

Box Hill Metropolitan Activity Centre to 2036 DRAFT Urban Design Framework

October 2021

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Description

Review of Strategic Direction
Box Hill Metropolitan Activity Centre
Draft Urban Design Framework
October 2021

Prepared by MGS Architects

Client

Whitehorse City Council

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The Wurundjeri– Balluk Tribe are the traditional custodians of the land on which Geelong is located. The tribe, whose traditional language is Woi Wurrung, is one of the five tribes that make up the Kulin nation. The tribe has historical links with the wider area now known as the City of Whitehorse extending over 40,000 years. Whitehorse City Council respectfully acknowledges the Traditional owners of the land which is now called Whitehorse, the Wurundjeri people and their elders past and present.

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Glossary of terms

ACZ	Activity Centre Zone
BHOSS	Box Hill Open Space Strategy
BHITS	Box Hill Integrated Transport Strategy
BHTI	Box Hill Transit Interchange
BHURTG	Box Hill Urban Realm Treatment Guidelines
CBD	Central Business District
ESD	Environmentally Sustainable Development
DELWP	Department of Environment, Land, Water and Planning (State Government of Victoria)
DDA	Disability Discrimination Act 1992
DDO	Design and Development Overlay
MAC	Metropolitan Activity Centre (<i>Plan Melbourne 2017-2050</i>)
VIF	Victorian Government's Victoria in the Future forecasts

Introduction

1

1.1 Purpose

The purpose of the *Box Hill Metropolitan Activity Centre Urban Design Framework* (BHMAL UDF) is to provide recommendations for a revised built form framework for the centre, to ensure that future built form outcomes are both aligned with the vision for each neighbourhood and collectively with the centre. These recommendations underpin the built form and design objectives contained in the *Box Hill Metropolitan Activity Centre to 2036 Structure Plan*.

Structure

This document is organised into three sections (in addition to this introductory section):

- 1 Introduction:** provides an brief overview of existing built form controls and key issues.
- 2 Recommended Built Form Framework:** proposes new built form requirements and guidelines for the centre.
- 3 Testing Outcomes:** demonstrates the overall outcomes from the combination of proposed planning controls.
- 4 Implementation:** proposes an implementation framework for the direct integration of the built form framework into the planning scheme.



The revised Structure Plan

The revised Structure Plan, *Box Hill Metropolitan Activity Centre to 2036*, aims to reconcile the significant forecast growth in population, housing and employment with the necessary underpinning amenity, character, connectivity and resilience to support the centre's role as the pre-eminent urban centre of Melbourne's east. The

plan provides a new vision that is supported by a suite of objectives, strategies and actions. A key aspect of the plan is the establishment of a network of distinctive neighbourhoods (see Figure 1) and the introduction of overshadowing controls to ensure sunlight access is provided to the primary pedestrian network. This includes ensuring that built form outcomes are both consistent with the preferred character for each neighbourhood, as well as promoting a collective vision, through emphasis on an enhanced role for placemaking in the Centre.

The Vision for Box Hill

Box Hill is the pre-eminent urban centre for Melbourne's east. The centre supports a regionally significant focus for health, education and employment serviced by a major public transport hub. It provides a diverse and growing range of business, retail, entertainment, community and living opportunities.

An interconnected network of complementary and distinctive, accessible and vibrant neighbourhoods respond to the diverse community's desire for sustainable, engaging, safe, caring and healthy places. Future change in Box Hill will deliver a people-friendly environment with open and welcoming public spaces for all.

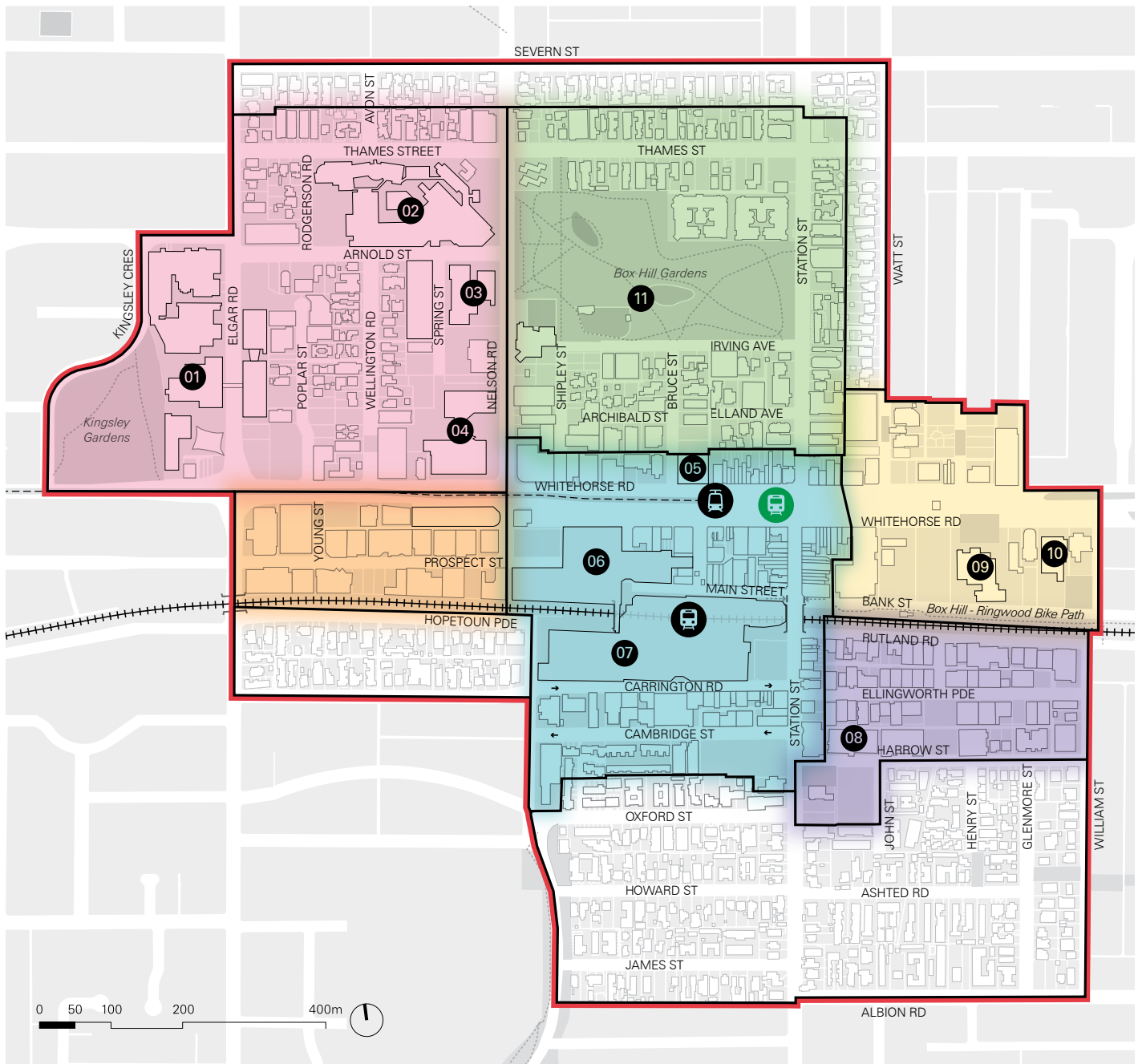


Figure 1 Distinctive neighbourhoods of Box Hill as proposed in the *Box Hill Metropolitan Activity Centre to 2036 Structure Plan*.

Legend

- Structure Plan (Activity Centre) Boundary
- Precinct Boundary

Neighbourhoods

- Precinct 1: Central
- Precinct 2: Health & Education
- Precinct 3: Prospect
- Precinct 4: Garden
- Precinct 5: Civic & Cultural
- Precinct 6: Enterprise
- Precinct 7: Transition

- Tram 109 terminus
- Box Hill Station
- SRL underground station - indicative only

Key Places

- 01** Box Hill Institute | Elgar campus
- 02** Box Hill Hospital
- 03** Epworth Hospital
- 04** Box Hill Institute | Nelson campus
- 05** Australian Tax Office
- 06** Box Hill Central North
- 07** Box Hill Central South
- 08** Centrelink & Medicare
- 09** Box Hill Town Hall
- 10** Box Hill Library
- 11** Box Hill Gardens

1.2 Existing built form controls

Unlike many major or metropolitan activity centres in Melbourne, there are no tailored zones or overlays relating to built form applicable in Box Hill: such as the Activity Centre Zone (ACZ) or Design and Development Overlay (DDO), (with the exception of DDO) for the neighbourhood centre located at Thames and Station Streets. As a result, there are no specific statutory mechanisms which specify built form objectives and requirements to implement the preferred built form outcomes contained in the *2007 Structure Plan*. The existing built form controls are contained within statements of desired outcomes and guidelines which specify building height limits, solar access, ground and upper level setbacks with varying degrees of clarity and precision.

Building heights

Heights are inconsistently specified in existing controls, with a preferred maximum in storeys and metres specified for some precincts whereas a range of storeys (4 to 6-storey) or no height limit is specified in Precinct E and F respectively.

Street wall height

None specified.

Upper level setbacks

Varying descriptions of upper level setback requirements but no distances specified.

Side (above street wall) setbacks

Varying descriptions of upper level setback requirements but no distances specified.

Side or rear setbacks

Varying descriptions of upper level setback requirements but no distances specified.

Solar access

Winter solstice controls specified for 11am-2pm to avoid overshadowing of key public spaces, peripheral residential precincts and residential areas outside the centre. This amounts to a discretionary control that applies to Precincts B, C, D and F. However, 'Key Public Spaces' is not clearly defined in the *2007 Structure Plan*. It would appear that this refers to 'Key Open Spaces' in the 'Built Form Precincts' plan (Figure 9, p.58). Furthermore, there no specific application requirements outlined in the Planning Scheme itself.

Table 1 Existing built form controls

Built Form Precinct	Building height	Upper level setback	Side / rear setbacks	Ground level setbacks	Solar access	
A	Peripheral residential	Clause 54 & 55				
B	Low-rise higher density residential	3-storey preferred (11m approx. Including roof)	None required	None required	Match adjoining, adopt less if both sides differ	Solstice 11-2 - avoid overshadowing of Key Public Spaces, Peripheral Residential Precincts or residential areas outside
C	Traditional town centre	3-storey preferred (11m approx.)	Any height above 11m should be setback	Do not create side setback	Do not create ground level setback	Solstice 11-2 void overshadowing of Key Public Spaces
D	Mix-rise commercial and mixed use	4-storey preferred (14m approx. including roof)	None specified	Avoid unless required for access	Avoid	Solstice 11-2 - avoid overshadowing of Key Public Spaces, Peripheral Residential Precincts or residential areas outside
E	Town hall	4 to 6-storey preferred limit (nominally 20m)	No distances specified, set back should respect heritage buildings	None specified	Provide as appropriate to context of significant buildings	None specified
F	Major development	No specific height limit	Varied but distances not specified	Avoid	Avoid	Solstice 11-2 - avoid overshadowing of Key Public Spaces, Peripheral Residential Precincts or residential areas outside

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1.3 Issues with existing built form

An analysis of urban design and built form was undertaken in the *Box Hill Metropolitan Activity Centre Analysis and Options Report (May 2019)*, which underscored the challenge of delivering taller buildings in what remains a largely suburban streetscape and arterial road streetscape. This has introduced a range of issues with existing and emerging built form. These issues will need to be managed to ensure that the centre's continued growth and role as the pre-eminent urban centre for Melbourne's east is supported by high-quality urban design and built form outcomes.

Land use and built form coordination

There have been issues with the integration of built form outcomes and preferred future land uses, due in part to conflicting messages, State Government zone reforms and limited consideration of development economics. In some areas, particularly in the Health and Education Neighbourhood, as well as parts of Prospect Street, existing built form controls have encouraged built form that has not delivered the land use outcomes being sought. Similarly, the Enterprise Neighbourhood has traditionally provided opportunities for a variety of scales of proprietary businesses to prosper but planning provisions have not precluded residential uses. Higher and better land value outcomes have been achieved through predominantly residentially focussed towers which in turn, out-compete lower rise commercial use for value.



Figure 3 Higher density residential development with high-capacity car parks on Fairbank Lane.

In some areas, lots with constrained access arrangements have been overdeveloped. For example, large-scale residential buildings with high-capacity car parks are constructed within street networks that do not support that outcome. Development proposals on modestly scaled sites in hinterland locations are being put forward, which rely on exclusive street access for vehicle loading and pedestrian access. The Forrest Hill Precinct in South Yarra is a mature example of the very poor urban outcome arising from such an arrangement.

The existing policies have not delivered the conversion from shopping centre to town centre achieved in other transit rich urban areas such as QV in the Melbourne CBD. It is noted that Council has recently undertaken steps towards addressing these shortfalls, notably the Box Hill Urban Realm Treatment Guidelines (BHURTG).

Heights, setbacks and building separation

The majority of approved development has been located on relatively small sites, either from a single existing lot or a small number of contiguous lots. Approximately two-thirds of approved developments are on sites measuring less than 1500 sqm, which is approximately the equivalent of two standard Box Hill house blocks. As a positive this has meant that development can occur relatively rapidly without the need for site amalgamation. The negative outcome of these developments from a design perspective is the inconsistent application of equitable development principles, where the development on one lot makes de facto use of some of the development potential of an adjoining site by building close to the boundary. There is also the significantly increased number of inactive sideages where new buildings are constructed up to the lot boundary on all sides. Where habitable rooms face the side boundaries there is an over-reliance on screening to manage privacy and reduce overlooking between developments. It would be preferable that larger setbacks and coordinated outlooks towards public areas are provided.

On the few sites large enough to contain multiple towers above podium level (5 projects from our sample) the average separation between towers is 11m. This suggests one potential benefit from the development of larger sites – the greater potential for managing access to light and air between taller built forms. This observation is tempered by the fact that each of these 5 examples has side setbacks of less than 4.5m. While there is adequate separation between towers within the sites, there is potential for taller towers on adjoining sites to be too close, leading to diminished amenity.

Integration with the public realm

Many new developments in Box Hill demonstrate multiple issues regarding the integration with the adjoining public realm. Development on larger sites would more positively integrate with the surrounding public movement network if 24-hour accessible pedestrian and cycle connections were provided. This can be to either replace existing informal connections severed by the new development or to provide new links within impermeable street blocks.

It is notable that many new developments make very little landscape contribution towards quality urban streetscapes, places and amenity. While there are a small number of developments that provide improved mid-block connectivity, there is more generally an absence of contributions towards upgraded footpath capacity in existing streets and lanes. In some neighbourhoods the magnitude of growth means that more space is needed to enable enhanced interconnection of neighbourhoods and key destinations within the activity centre. While the public realm is a council managed space, there is an absence of substantial public realm improvements for areas immediately adjoining the project site, as part of development proposals.

There are many locations where the comfort and amenity of pedestrians at street level is relatively poor. Overshadowing and wind impacts have had a negative impact on the public realm surrounding the development. The consideration of wind effects from taller buildings have in many cases not been demonstrated. The use of canopies and continuous weather protection along active pedestrian-focussed street interfaces is intermittent where provided.

There is inconsistent activation of laneway and street podium interfaces leading to perceived diminished safety and security within the public realm. With respect to building interface arrangements, podium heights appear to be determined more by functional requirements of the internal use than in response to the role of the street and the need for wind mitigation in some locations.

The substantial increase in lot coverage in many areas has resulted in a substantial loss of tree canopy cover and shade as sites have been intensified. This is an inevitable outcome from a substantial intensification in use, however there has been insufficient provision of landscape within the proposed developments and the contribution back towards the broader neighbourhood. There is a need to consider where the landscape opportunities might be accommodated if not in the site, particularly in locations where substantial trees won't fit into the streetscape due to the narrow width of road reserves. Where the public realm is too narrow the landscape contribution to the streetscape will need to be accommodated within individual private lots.

The Council has recently prepared the 'Box Hill Urban Realm Treatment Guidelines'. This operational document defines a hierarchy of public realm types and promotes high quality public realm outcomes through a high-level specification of an improved landscape and materials palette across the centre. These guidelines constitute an important part of a broader overall response that is needed to address these issues.

Cumulative impacts of traffic generation and parking

In all of the instances of permit applications that were analysed, the traffic impacts generated by the development were considered acceptable and able to be accommodated within the existing local and arterial road network. However, the traffic impacts of these applications were considered on an individual, site by site basis. There was no evidence within the decisions that the potential cumulative impact of traffic generated by valid permits was considered.

Some tribunal decisions highlighted that any permit conditions for traffic impact mitigation works needs to relate to the impacts generated by development, not broader traffic management issues. However, there are also developments that require traffic studies to be carried out in the area of other approved developments and determine if mitigating works are required for that precinct. Council is currently preparing the Box Hill Integrated Transport Strategy (BHITS) which seeks to provide an integrated strategy with a clear underlying focus on sustainable and more efficient modes of transport, including addressing the impacts of traffic and car parking.

Built form and design quality

Box Hill lacks clear policy support for design excellence for taller built form as defined through quality and durability of materials and finishes and detailing of ground level services. The quality and long-term durability of materials is a concern that has been noted during community consultation. New development within the activity centre has delivered city scale buildings but the underlying development economics is pushing preferences for shorter life materials and detailing. For example, painted concrete and lightweight claddings have been specified on prominent buildings. On taller built form, commercial glazing systems have been specified that are more appropriate to shorter life commercial buildings. These have been used as longer term solutions for strata titled residential towers without clear consideration about how the maintenance and eventual replacement of these systems will be achieved.

In relation to improved environmental sustainability outcomes, Council has an Environmentally Sustainable Development (ESD) policy through Amendment C130 which was incorporated into the Scheme in November 2015. This policy sets out specific application requirements for different types of development towards incorporating ESD principles in development.

Recommended Built Form Framework

2

2.1 Proposed built form controls

The purpose of the recommended built form framework is to provide guidance on preferred outcomes that will address the key issues identified in the urban design analysis, implement the vision for each neighbourhood, and respond to the key messages from community and stakeholder consultation.

There was strong support from the community for clearer built form guidance for future development in Box Hill. In particular, the importance of protecting and improving the amenity of the public realm was emphasised. In response, the impacts of taller buildings needs to be managed to protect the quality of the public realm, provide clear views to the sky from the street and improve the quality of the building at the ground level.

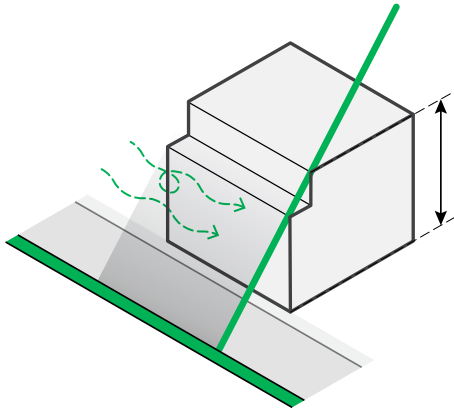
How is the distinct character of each precinct defined and delivered?

- 1 Urban character statements for each precinct are expressed in the Structure Plan and integrated into the precinct objectives in the ACZ, which offers further guidance about the character and built form outcomes sought.
- 2 The precinct map, objectives and guidelines in the ACZ provide direction about the development outcomes to be achieved in each precinct. These have been developed with specific reference to the vision statements for each precinct.
- 3 Overshadowing controls forms the primary amenity control to ensure that the amenity of key public spaces contributing to the distinct character and quality of each precinct are protected from overshadowing.
- 4 Preferred building height provisions are expressed for each precinct, which link to an overarching logic for building heights across the centre, and are tailored to respond to the specific character and amenity outcomes sought for each precinct.

How are built form and amenity outcomes managed?

- 1 The ACZ includes Centre Wide Design and Development provisions relating to:
 - Overshadowing
 - Street wall height and upper level setbacks (above street wall)
 - Building height
 - Wind effects
 - Street wall setback
 - Building separation, side and rear setbacks
 - Active street frontages
 - Vehicle access, car parking and loading
 - Building services
 - Architecture, articulation, materials and finishes
 - Landscape contributions
 - Pedestrian links
- 2 Further direction is provided within the precinct objectives and guidelines, as needed, to give effect to precinct specific outcomes that are distinctly different from those otherwise delivered by the Centre Wide provisions.

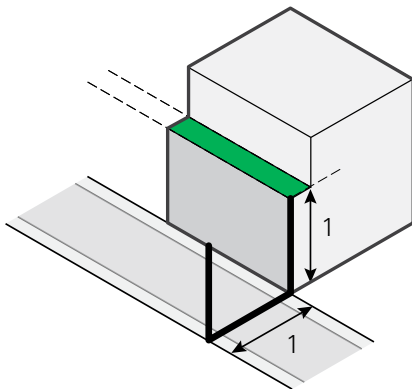
2.2 Primary controls



1

Overshadowing and wind controls

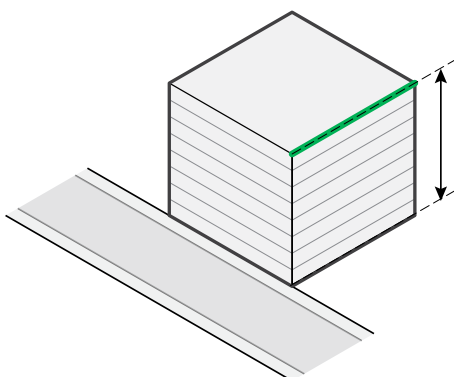
Overshadowing controls are a **key determinant** for building height on adjoining sites. These controls **override the maximum preferred height** specified to ensure that the amenity of the primary pedestrian network and key public spaces are protected from overshadowing. In addition, wind effects controls ensure that taller buildings do not result in unsafe and uncomfortable wind conditions.



2

Street wall height, upper level setbacks

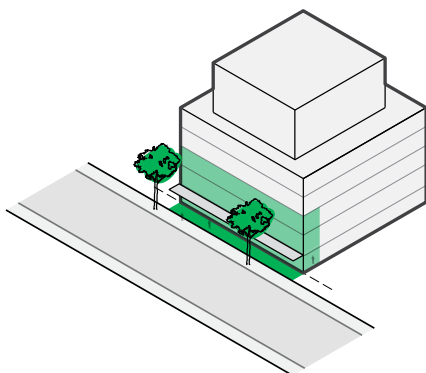
Maximum street wall heights and specification of minimum and preferred upper level setbacks above establishes a base level of height that relates to the width of streets and laneways and defines setbacks above the street wall. This also contributes to a sense of enclosure while ensuring access to sunlight and views to the sky.



3

Building height

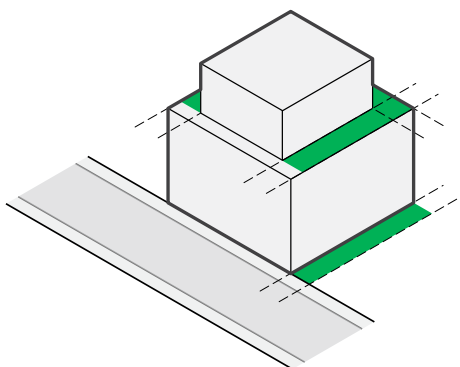
Preferred maximum overall building heights are identified in specific areas of the centre and within neighbourhoods and are linked to specific urban character and amenity outcomes sought.



4

Street wall setbacks and active street frontages

The definition of street wall setbacks will help improve the quality of the building at the ground and define the types of interfaces. Guidance on the activation of street frontages and interfaces ensures high levels of visual and physical engagement between people within building and those on the street and contributes to the vibrancy of street life in the centre.



5

Building separation, side and rear setbacks

Ensuring building separation, and side and rear setbacks are provided within developments and provide clear views to the sky from the street and improves the amenity and outlook from within buildings.

2.2.1 Overshadowing

Recommendation

Introduce overshadowing controls to key public spaces and streets which determine maximum building heights

A major contributory factor to the quality and amenity of the public realm for pedestrians is the amount of sunlight they receive during the middle of the day at cooler periods of the year when the sun is lower in the sky. There is a need for clear and explicit overshadowing and solar access controls across the centre and specifically on main streets on the primary pedestrian network and key existing and future public spaces.

These controls will apply at specific times of the day at winter solstice and the spring equinox and will ensure that these areas are protected from overshadowing from future development. Planning permit applicants must provide shadow modelling to demonstrate that relevant overshadowing controls are satisfied.

These controls were developed in response to community concerns that the amenity of key streets and spaces would be impacted by taller built form on adjacent sites. There are numerous approved permits that would not meet these controls if they were constructed, such outcomes are not supported on urban design grounds.

Table 2 Winter solstice control, 11:00am to 2:00pm, 21 June (mandatory requirement)

Overshadowing Protection Areas as shown in Figure 4
Ashted Road Reserve
Box Hill Gardens
Future Ellingworth Parade Open Space
Future Whitehorse Road Open Space (Central)
Glenmore Street Reserve
Kingsley Gardens
Linsley Park
Market Street and Main Street
Pioneer Park
Town Hall Forecourt

Table 3 Spring equinox control, 11:00am to 2:00pm, 22 September (Mandatory requirement)

Overshadowing Protection Areas as shown in Figure 4
Future Court Street Open Space
Future Watts Street Open Space
Future Whitehorse Road Open Space (West)
Future Whitehorse Road Open Space (East)
North-South Steet (No additional overshadowing on any part of the opposite footpath, measured 6 metres from boundary)
East-West Street (No additional overshadowing to south footpath (measured 6 metres from boundary)

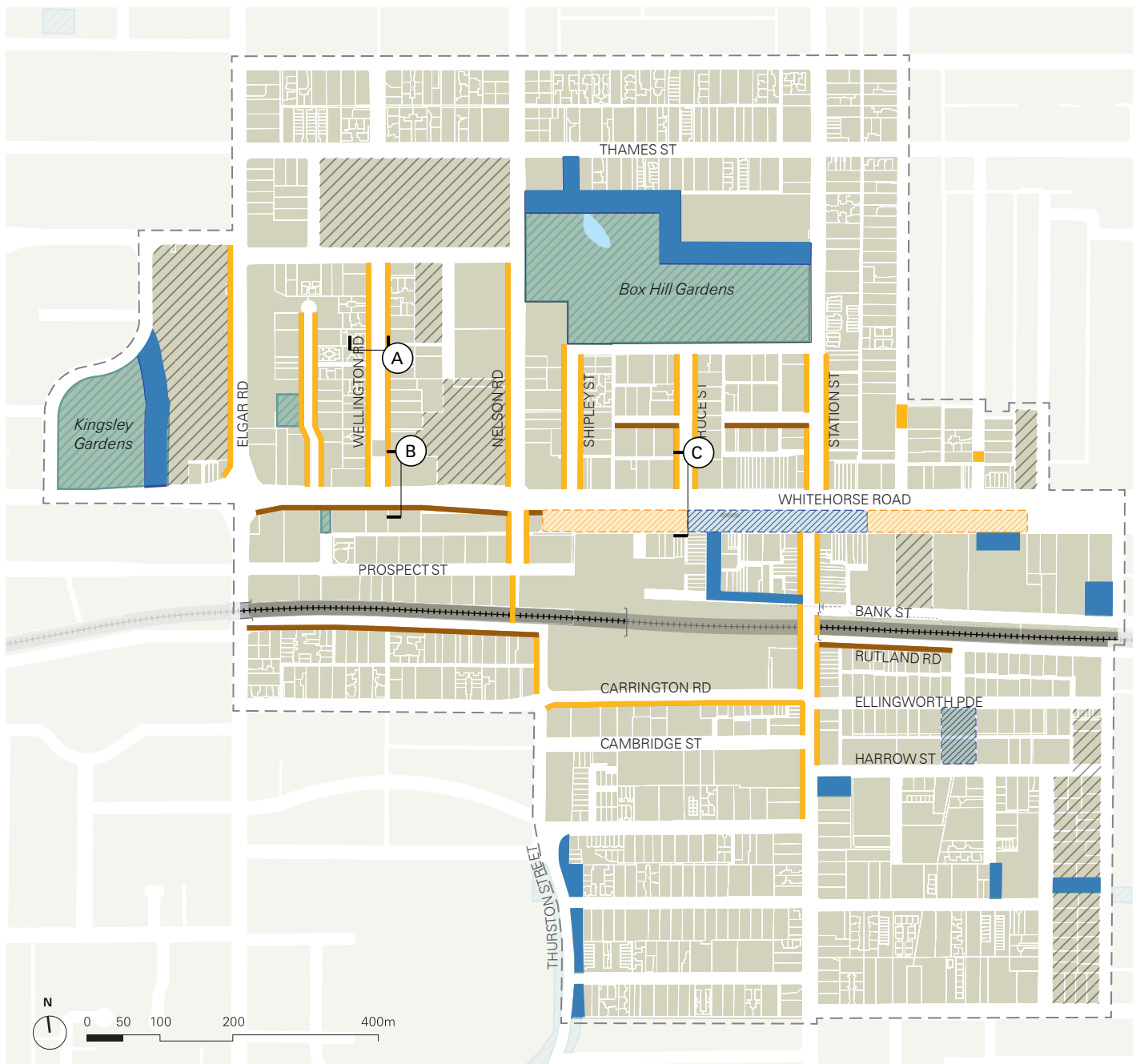
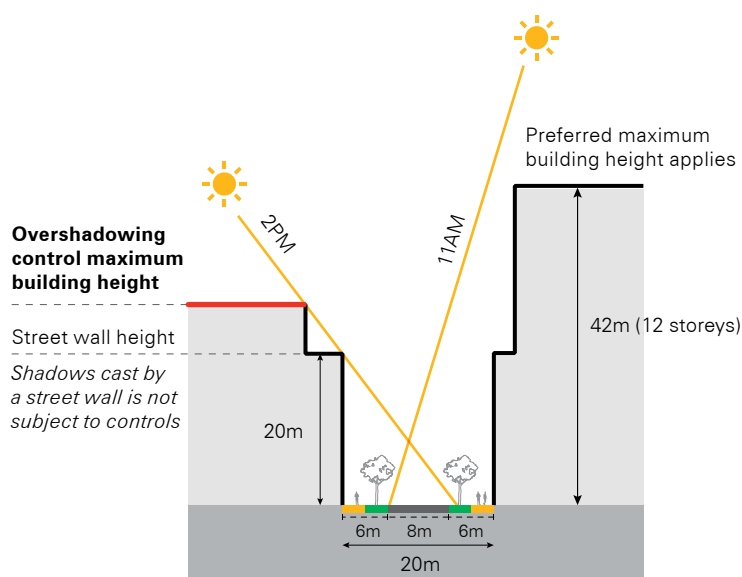


Figure 4 Overshadowing control areas

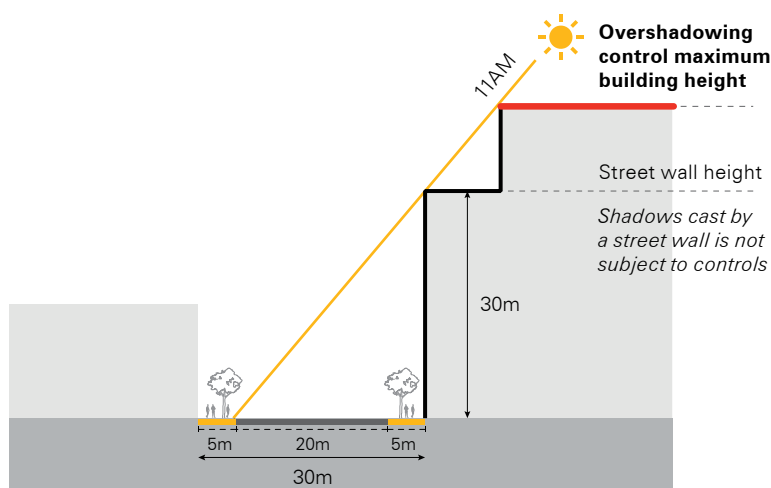
- | | |
|--------------------------------------|---|
| [---] Activity Centre Boundary | <i>Overshadowing protection footpaths</i> |
| [---] Belgrave/Lilydale railway line | — North-South Street |
| [---] Existing Open Space | — East-West Street |
| [---] Future Open Space | <i>Overshadowing protection areas</i> |
| [---] Not in ACZ | — Spring equinox existing open space |
| | — Spring equinox future open space |
| | — Winter solstice existing open space |
| | — Winter solstice future open space |

Figure 5 Section A: Wellington Road 20m north/south street demonstrating no additional overshadowing above the street wall height between 11am and 2pm on 22 September.



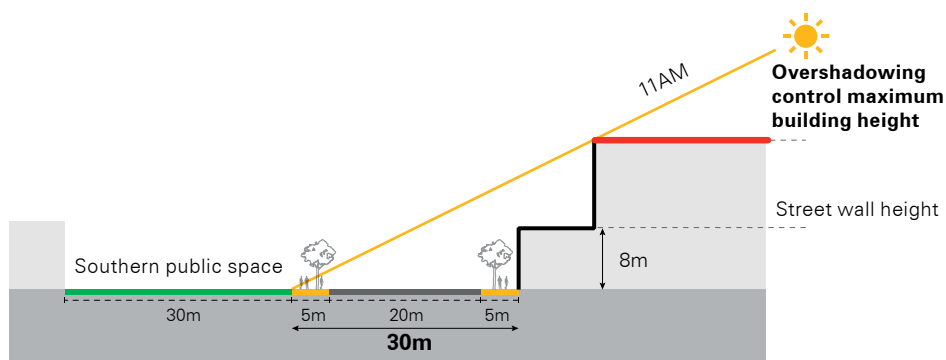
Solar Equinox 20m North South Street (Wellington Road)

Figure 6 Section B: Whitehorse Road (west of Nelson Road) 30m east/west alignment street demonstrating no additional overshadowing above the street wall height between 11am and 2pm on 22 September.



Solar Equinox Whitehorse Road (west of Nelson Road)

Figure 7 Section C: Whitehorse Road (east of Bruce Street) 30m east/west alignment street demonstrating no additional overshadowing above the street wall height between 11am and 2pm on 21 June.



Winter Solstice Whitehorse Road (east of Bruce Street)

2.2.2 Street wall height and upper level setbacks

Recommendation

Introduce preferred maximum street wall heights that relate to the width of streets and laneways

Controls that guide the height of the street wall, or the height of built form at the interface with the public realm, help deliver inviting, human-scaled public spaces that encourage pedestrian movement. An appropriately scaled wall height that relates to the width of the street contributes to creating a sense of enclosure without overwhelming the public realm and provides access to sunlight and views to the sky. Currently, there is no clear guidance on preferred street wall heights in the activity centre.

Typically, most streets within Box Hill are approximately 20 metres wide. Applying a 1:1 ratio of street width to wall height suggests 20 metres is an appropriate baseline measure for wall height across the centre. However, there are a number of specific contexts where the preferred maximum street wall height varies from this ratio.

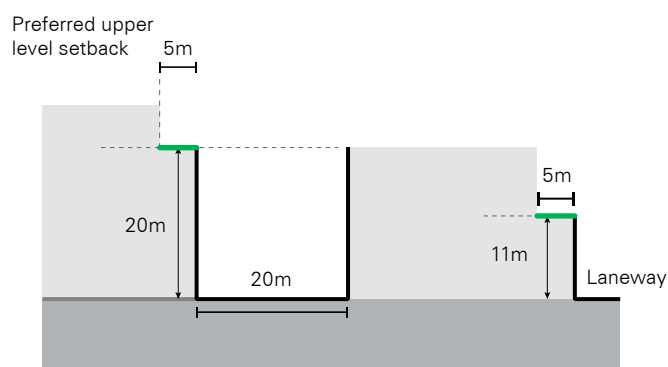
- Within the traditional town centre the established wall heights that define the character of the precinct should be retained. These are typically 2 storeys high, or up to 11 metres. Where there is a missing frontage or lower individual frontage the preferred height should be set in proportion to the adjoining frontages.
- Whitehorse Road is the focus for more substantial built form (outside of the traditional town centre) and the street wall requires emphasis in proportion to this role. The road reserve width varies from 30 to 60 metres. However, a 60 metre street wall would be wholly inappropriate for the section between Nelson Road and Kangerong Road, not only because of its overwhelming scale but this would result in the overshadowing of the proposed urban space on the southern carriageway of Whitehorse Road. As a result, a street wall height of 30 metres would be consistent with existing width of Whitehorse Road west of Nelson Road and the reconfigured width of the carriageway east of Nelson Road. This 1:1 ratio would provide an appropriate balance between enclosure and pedestrian amenity adjacent to the buildings.
- Laneways and new pedestrian links require a lower street wall to provide access to light and sky views, however a 1:1 ratio (6–8 metres) would be disproportionately low and would result in a poorly defined building base. This would be disproportional to the overall maximum height of the building. The preferred wall height for laneways and new pedestrian links is 11 metres to accommodate a scale of 2-3 storeys at these interfaces. Importantly, this lower street wall would provide laneways and new pedestrian links with good levels of day light during the day. A taller street wall height would compromise this key amenity outcome.
- In minor streets in peripheral areas a preferred street wall of 13.5 metres applies, consistent with the lower overall preferred heights in these locations.
- Transition zone control for corner sites with varying maximum street wall heights, see Figure 9 (overleaf).
- In no location should the street wall height be more than twice the width of the adjoining street.

The setbacks for upper level built form should be sufficient to create a visual distinction between upper and lower forms. As buildings increase in height, this upper level setback should be larger, as set out in the table below. The traditional town centre will require a larger upper level setback whilst retaining the existing street wall height. This ensures that developments in this area responds to heritage and does not detract from the fine-grain urban character of traditional town centre.

Table 4 Upper level setbacks (for all built form above street wall height)

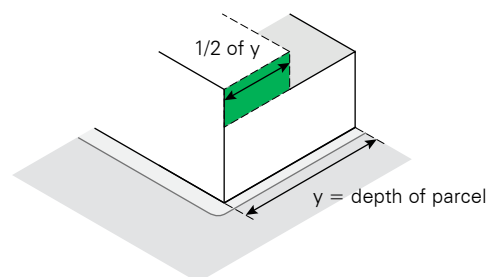
Overall building height	Mandatory	Preferred
Traditional town centre		
<i>Retain existing street wall height</i>		
Below 17.5 metres	6m for heritage buildings	6m
All other areas		
Below 28 metres		4.5m
28 metres or greater		6m
52 metres or greater		10m

Figure 8 Indicative section demonstrating 20m street wall height in relation to a 20m street and the application of a preferred upper level setback for a building with an overall height of 28m.



Street wall height and upper level setbacks

Figure 9 Transition zone provisions For corner sites with differing street walls on each side of the street, a transition zone applies to half the depth along the side with the lower street wall height. The higher street wall height is allowed within the green zone, however, the lower street wall applies beyond this zone.



Transition zone for corner sites

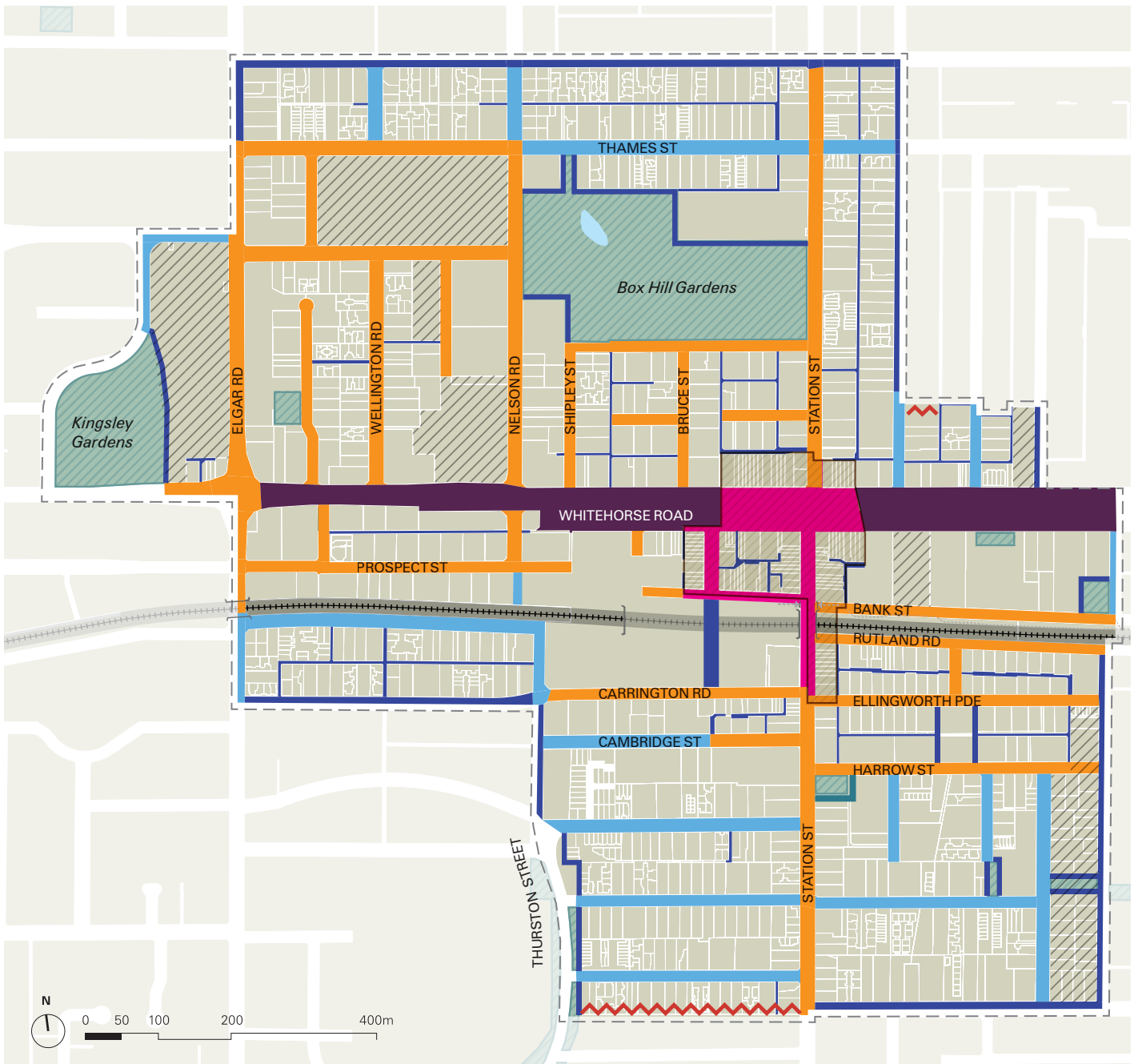


Figure 10 Preferred maximum street wall heights

- | | |
|---------------------------------|------------------------------------|
| Activity Centre Boundary | 30m |
| Belgrave/Lilydale railway line | 20m |
| Existing Open Space | 13.5m |
| Traditional Town Centre | 11m |
| Sensitive Residential Interface | Retain existing street wall height |
| Not in ACZ | |

2.2.3 Preferred maximum building height

Recommendation

Introduce preferred maximum building heights that respond to the vision and preferred character and amenity outcomes of each neighbourhood

It is proposed that clearly specified maximum building heights are introduced to ensure that building heights respond to the vision and preferred character and amenity outcomes of each neighbourhood. The vision statements contained in the neighbourhood plans outline preferred building typologies that are aligned with the preferred land use outcomes of each neighbourhood.

Furthermore, maximum building heights were informed by the need to protect key public spaces and the primary pedestrian network from overshadowing. As a result, the overshadowing requirements override the preferred maximum height in every case. Similarly, the building height should stay in proportion with the surrounding development to provide an appropriate transition, particularly to adjoining heritage places when viewed from the street, for example in the traditional town centre or the town hall context.

As an example of the general underlying rationale in establishing heights, in the Central Neighbourhood, where the historical scale of the traditional town centre and key adjoining public spaces on Market and Main Streets are highly valued, it is proposed that the existing fine-grain and scale of 2 storeys are retained. There is an opportunity to provide for additional height above this scale where it provides an appropriate response to heritage and the surrounding development. This would require the incorporation of a upper level setback of 6m above this 2 storey scale. Elsewhere in the core, taller mixed-use podium towers are encouraged on both Box Hill Central sites where off-site impacts (such as overshadowing, wind effects, views to the sky) are appropriately managed. Similarly, a stepping down to mid-rise mixed use scale on Carrington Road ensures an appropriate transition is achieved to residential areas to the south of Cambridge Street.

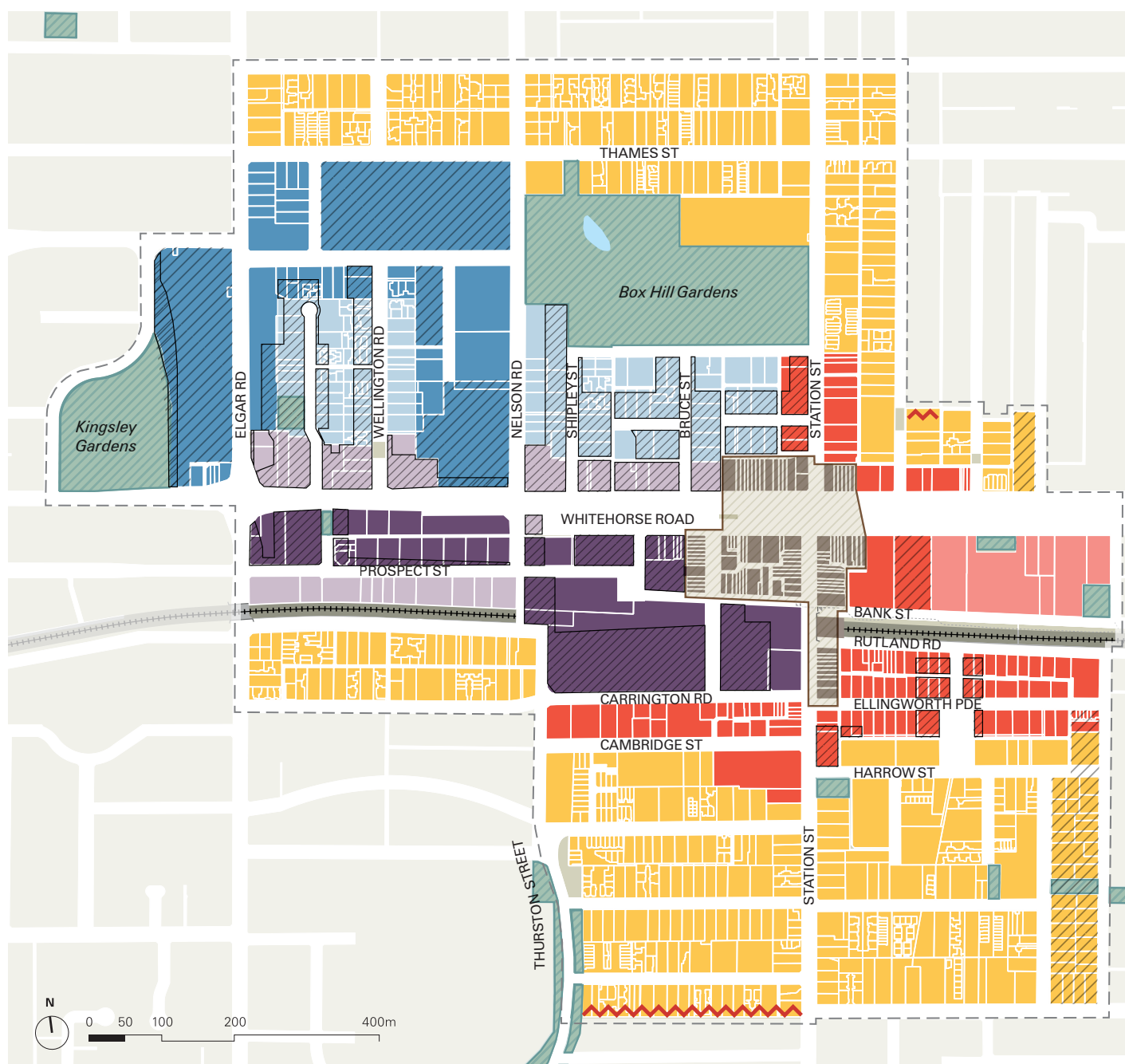
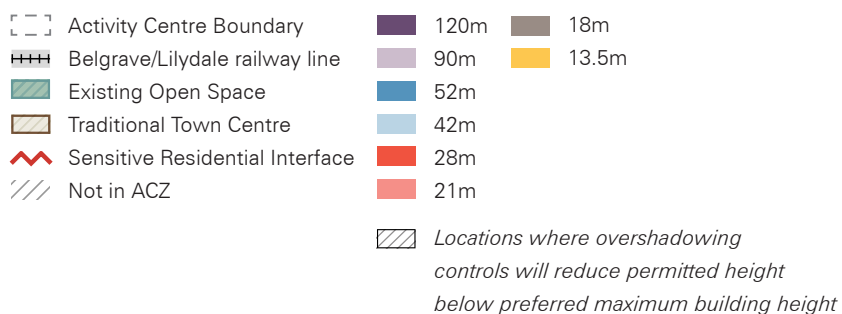


Figure 11 Preferred building heights



2.2.4 Wind effects

Recommendation

Introduce wind effects controls

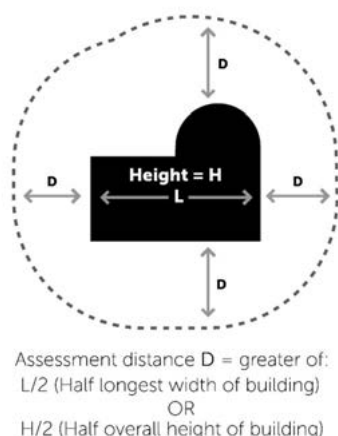
As with sunlight, comfortable and safe wind conditions are also a key contributory factor to the quality of the public realm. There is a need to ensure that taller buildings do not result in windy conditions that would impact on the comfort of key public spaces and streets. This is particularly important for urban spaces and open spaces where sitting are provided. Similarly, there is a need to ensure comfortable wind conditions for standing on streets with higher levels of pedestrian activity. The specification of wind maximum wind speeds for sitting, standing and walking areas will provide clear and measurable guidelines for comfortable wind conditions.

To achieve this amenity outcome, planning permit applicants for a building with a total building height exceeding 18 metres would need to provide a wind report demonstrating that the building would not create unsafe and uncomfortable wind conditions within distances shown in Figure 12.

Table 6 Wind conditions and requirements

Wind condition	Mandatory Requirement
Unsafe wind conditions	The hourly maximum 3 second gust from any wind direction (considering at least 16 wind directions) with a corresponding probability of exceedance percentage greater than 20 metres per second.
Wind condition	Preferred Requirement
Comfortable wind conditions	<p>The Hourly mean wind speed from all wind directions combined with a probability of exceedance of 20 per cent, is less than or equal to:</p> <ul style="list-style-type: none"> — 3 metres/second for sitting areas. — 4 metres/second for standing areas. — 5 metres/second for walking areas. <p>Hourly mean wind speed is the maximum of:</p> <ul style="list-style-type: none"> — The hourly mean wind speed. — The gust equivalent mean speed (3 second gust wind speed divided by 1.85).

Figure 12 Distances for the assessment of wind effects



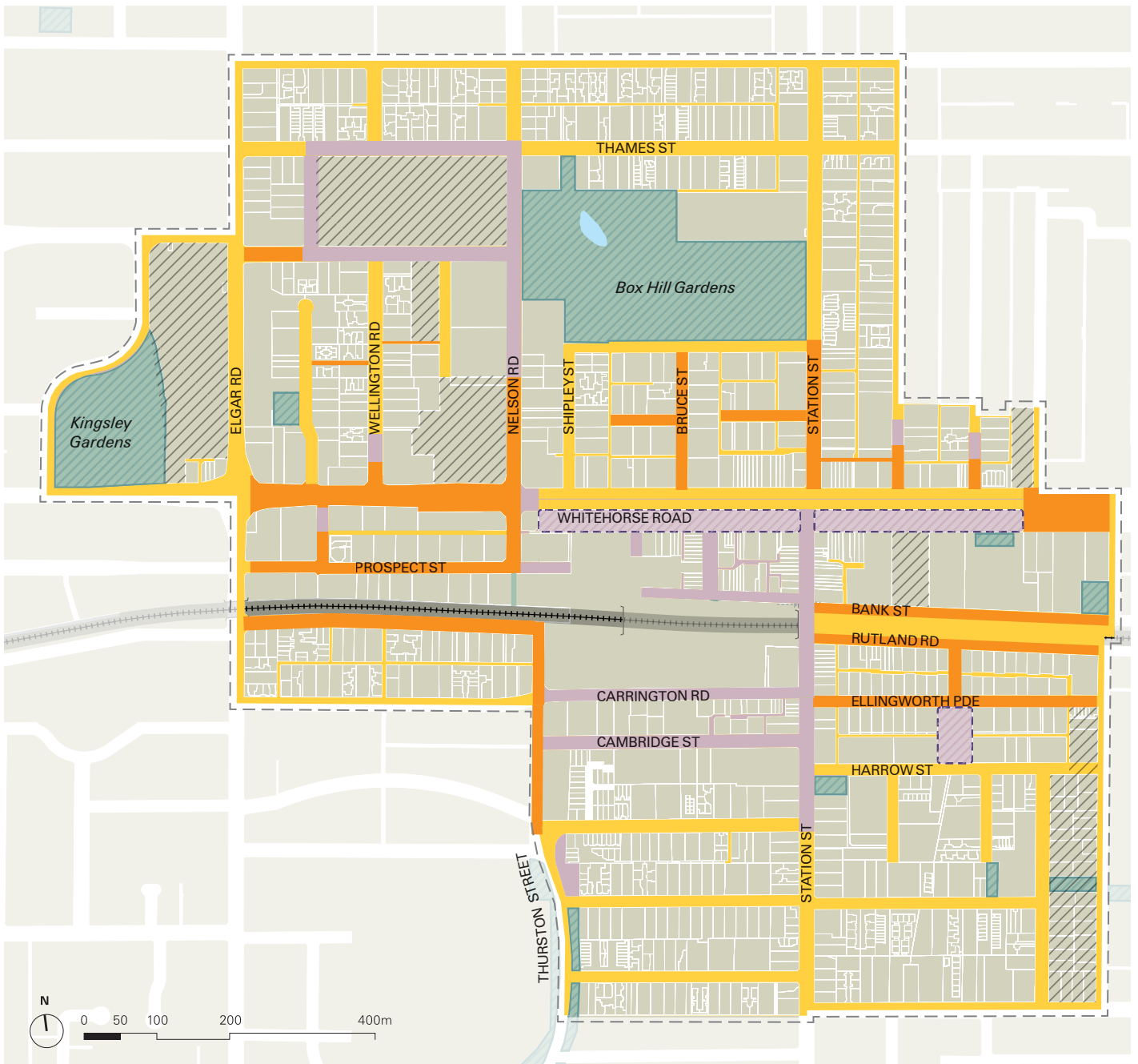


Figure 13 Comfortable wind conditions areas

- | | |
|------------------------------------|--------------------------------------|
| [- -] Activity Centre Boundary | Walking areas (5m/s) |
| +++ Belgrave/Lilydale railway line | Standing areas (4m/s) |
| Existing Open Space | Sitting areas (3m/s) |
| /// Not in ACZ | Future/proposed sitting areas (3m/s) |

2.2.5 Side and rear setbacks, and building separation within a site

Recommendation

Introduce controls on side and rear setbacks, and building separation within a site to provide clear views to the sky

Lack of, or insufficient distances, between the upper levels of taller buildings will obstruct views to the sky. In addition, enforcing minimum building separation distances through the specification of setbacks below and above the street wall will also ensure adequate sunlight and privacy to habitable rooms, private open space, and assists in providing visual and acoustic privacy, improves the quality and extent of outlook from within the building while ensuring equitable development of adjacent sites.

For larger developments with multiple buildings, there is also a need to consider building separation controls within the site to ensure that these concerns are also met on single sites.

As a principle, buildings must incorporate a single upper level setback above the street wall on the street frontage. This would avoid the creation of buildings with a tiered wedding cake form and ensure the formation of podium and tower form.

Table 7 Side and rear setback requirements

Qualification	Overall Building height	Preferred setback
Side and rear setbacks below the street wall <i>If the building is not built on the boundary</i>	Below 28 metres	4.5m
	28 metres or greater	6m
	52 metres or greater	10m
Side and rear setbacks above the street wall <i>If the building is built to the boundary</i>	Below 28 metres	4.5m
	28 metres or greater	6m
	52 metres or greater	10m

Figure 14 Side and rear setbacks below the street wall. These side and rear setbacks apply if the new building is not built on or within 300mm of a side or rear boundary

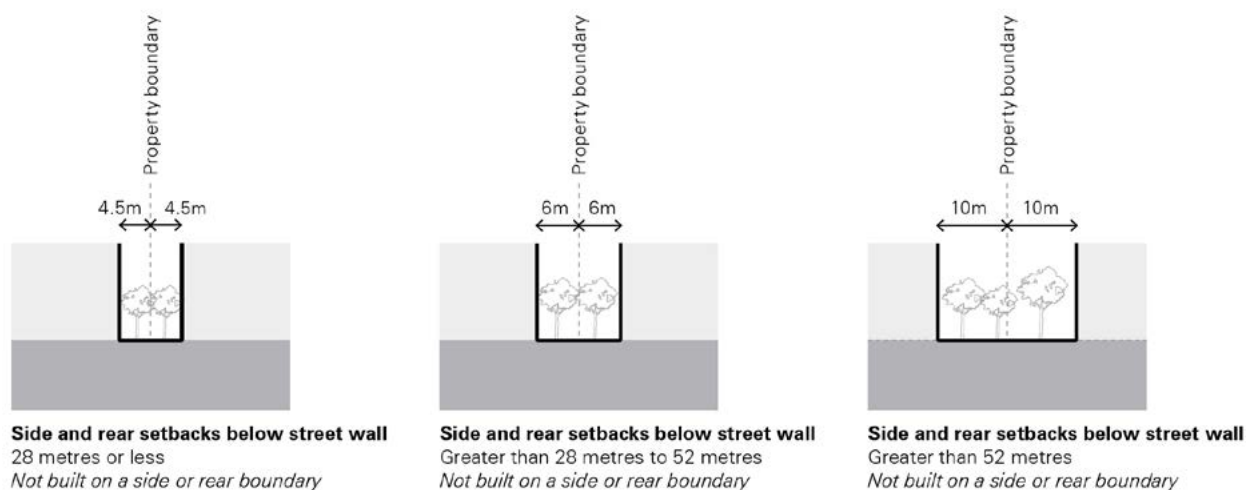


Figure 15 Side and rear setbacks above the street wall. These side and rear setbacks apply if the building below the street wall is built to the boundary

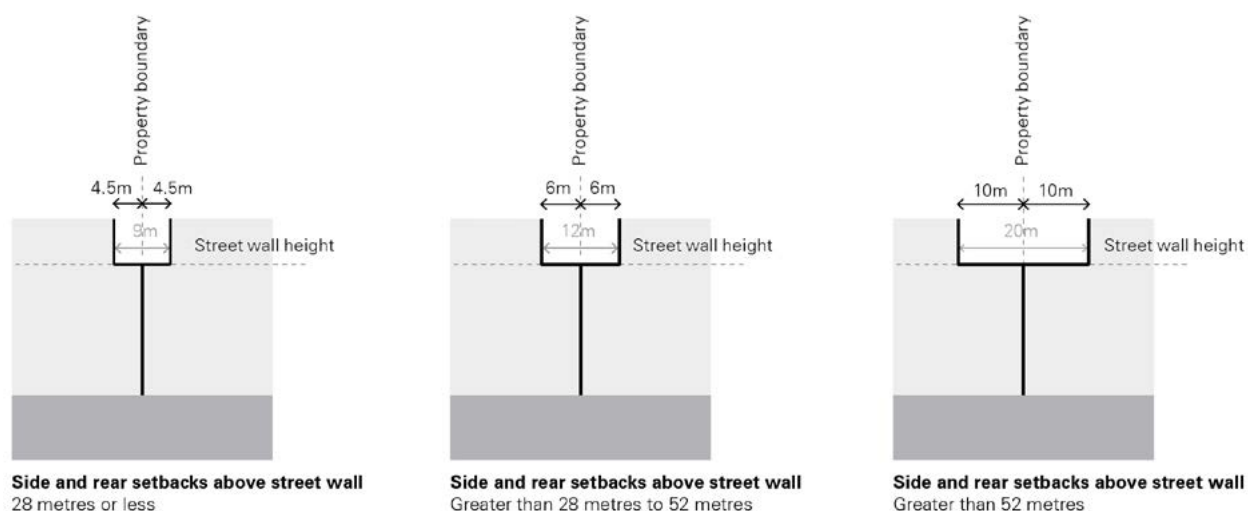
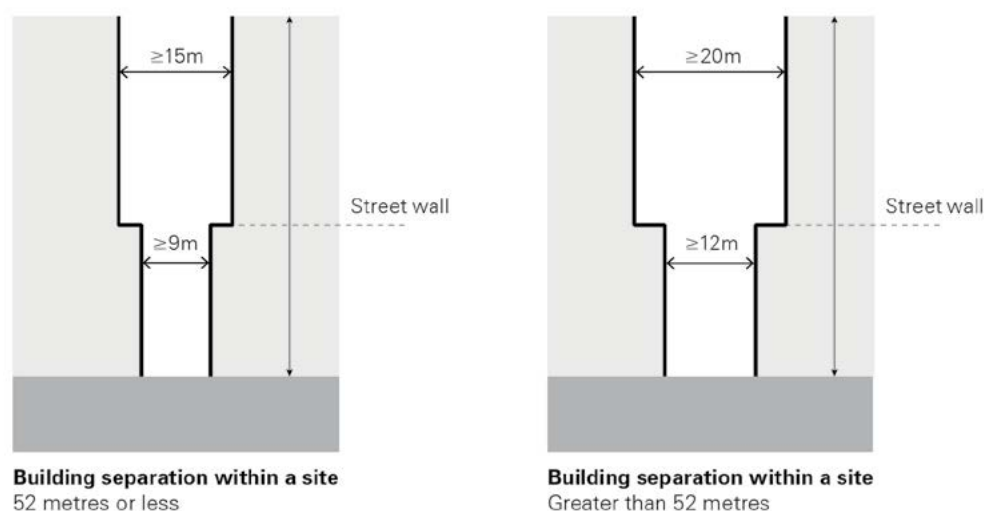


Table 8 Requirements on building separation within a site

Part of building	Overall Building height	Minimum building separation
Below the maximum street wall height	Below 52 metres	9m
	52 metres or greater	12m
Above the maximum street wall height	Below 52 metres	15m
	52 metres or greater	20m



2.2.6 Street wall setback

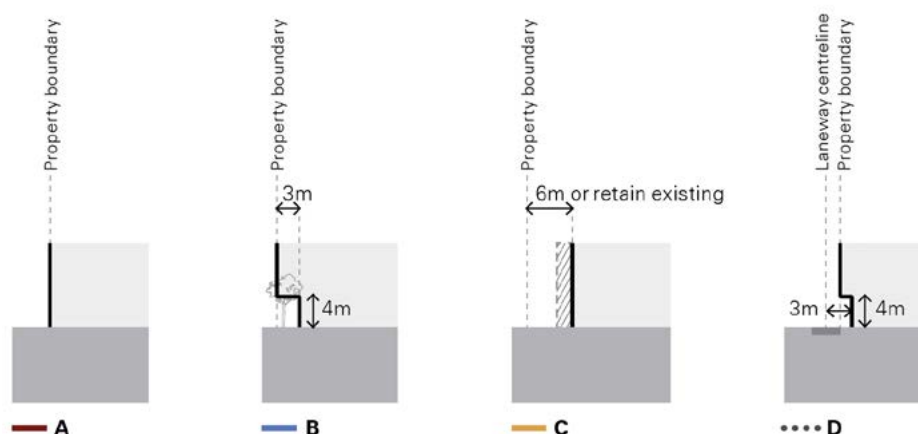
Recommendation

Define setbacks at ground level to improve the quality of the building at the ground level and the amenity of the adjoining public realm

In Box Hill, there are specific segments of the primary pedestrian network where the width of footpaths are inadequate for its role as a primary movement corridor for pedestrians. In addition to this, there is a need to provide inadequate space for the planting of street canopy trees to improve the amenity of the public realm in particular segments. As a result, there is a need to co-ordinate development along these segments to incorporate setbacks at ground level from the boundary line to provide for footpath widening and landscaping, including canopy trees.

In principle, areas within the urban core with higher levels of activation (such as retail, hospitality), buildings should be built to the boundary. In areas where setbacks need to respond to heritage, setbacks should be set to ensure that existing heritage places can be viewed from the street. Similarly, where there is a generous existing landscape setback, new development should retain this outcome.

Figure 16 Indicative sections of Street wall setback (Types A to D)



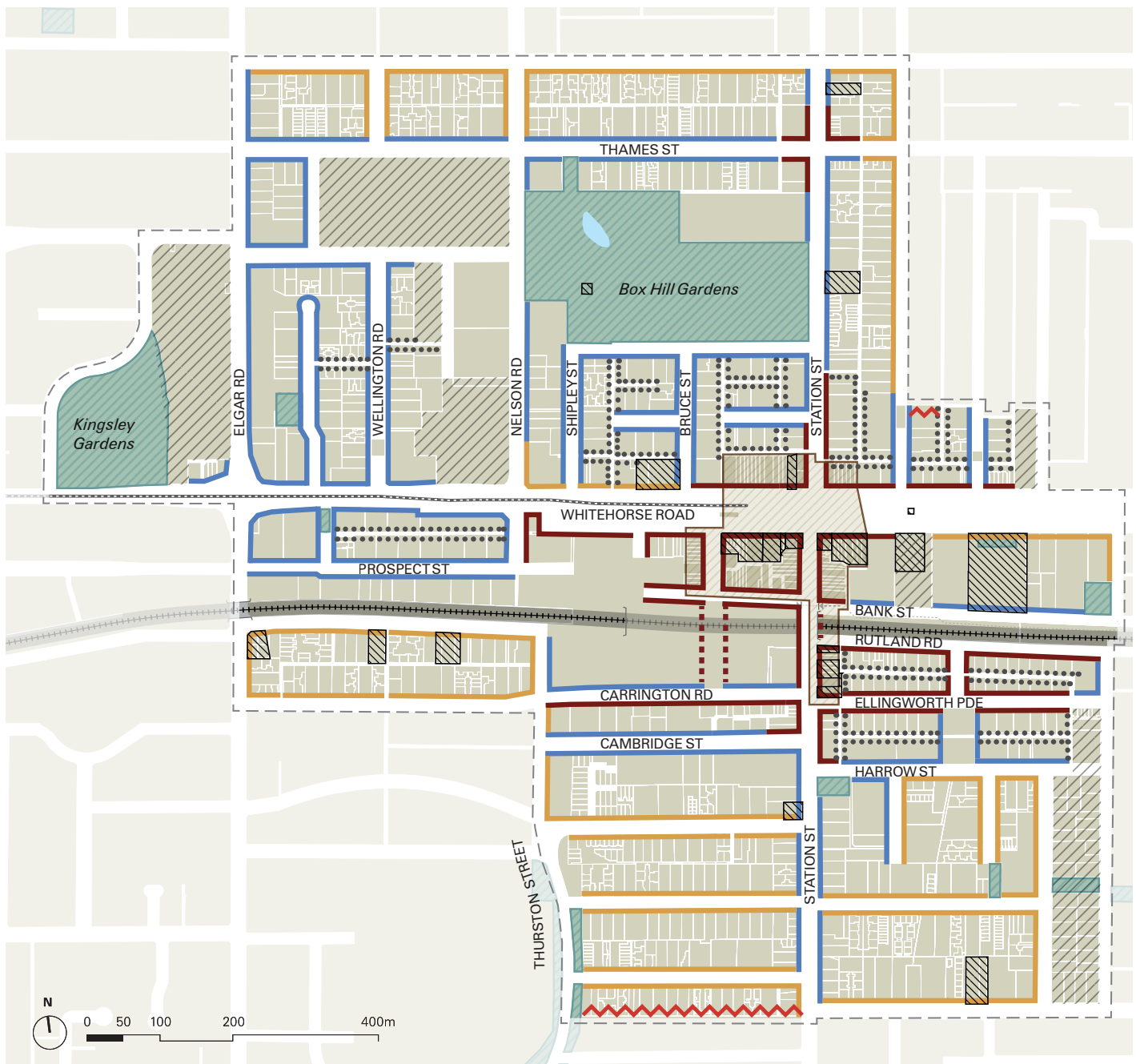


Figure 17 Street wall setback

- | | |
|---------------------------------|--|
| Activity Centre Boundary | Type A – 0m |
| Belgrave/Lilydale railway line | Type A – 0m (future) |
| Existing Open Space | Type B – 3m |
| Traditional Town Centre | Type C – Retain existing or 6m, whichever is |
| Sensitive Residential Interface | Type D – 3m from laneway centreline |
| Heritage Overlay | Type E – Accommodate hospital requirements |
| Not in ACZ | Type F – Respond to heritage |
| | Heritage overlay |

2.2.7 Active street frontages

Recommendation

Provide guidance on preferred outcomes for active street frontages and public realm interfaces

Active street frontages and interfaces provide high levels of visual engagement between people in the public realm and those at ground level and upper floors of buildings. Active interfaces contribute to the vibrancy, appearance and sense of safety within a mixed-use centre. Activation can be achieved by:

- Creating a clear street address with appropriate levels of clear glazing and legible building entries for higher levels of permeability and visibility from the street.
- Sleeving podium level car parking with active uses.
- Providing canopies over footpaths where retail and hospitality uses are proposed. This should offer continuous and functional weather protection.
- Consolidation of services within the sites and within buildings and ensure that any externally accessible services are integrated into the building facade design in a carefully resolved and unobtrusive manner.
- Avoid incorporating external steps or pronounced level changes at ground level that visually and physically separate the building from the street.
- Providing openable windows and balconies within the street wall, and orienting habitable rooms towards the street to increase passive surveillance opportunities.
- Ensuring that building indents, including integrated seating, are at a depth that remains visible from the street to avoid creating unsafe entrapment spaces.
- Where practicable, direct individual entries to dwellings or home offices at ground level should be encouraged to create a clear sense of address at ground level.

Specific glazing requirements

Buildings with frontages to Urban Core Street, Urban Activity Street and Active Laneway should deliver the clear glazing specified in Table 9 below.

Open space interfaces

New buildings within sites directly abutting open spaces should provide habitable rooms orientated towards the open space to maximise interaction and opportunities for passive surveillance.

Institutional interfaces

Institutional buildings should, where practicable, create activated façades to increase the degree of visual and physical interaction between people in the street and those within.

Heritage interfaces

Note that it may be difficult to achieve the interface types on sites where there is a heritage overlay. In these locations the heritage requirements take precedence over the activation requirements.

Table 9 Active street frontages — clear glazing requirements

Description	Glazing
A Urban Core Street	<p>Where retail uses are proposed, at least 75 per cent clear glazing along the ground level frontage to a height of 2.5 metres, excluding any solid plinth or base.</p> <p>Where residential and office uses are proposed, at least 65 per cent clear glazing along the ground level frontage to a height of 2.5 metres, excluding any solid plinth or base.</p> <p>Encourage operable windows and detailing that engages with the street.</p> <p>Grilles or mesh should provide a high level of transparency where they are used.</p>
B Urban Activity Street	<p>At least 30 per cent clear glazing along the ground level frontage to a height of 2.5 metres, excluding any solid plinth or base.</p>
C Active Laneway	<p>Provide clear glazing along the ground level frontage to a height of 2.5 metres, excluding any solid plinth or base and should be maximised where it is practicable.</p> <p>Encourage operable windows and detailing that engages with the street</p>

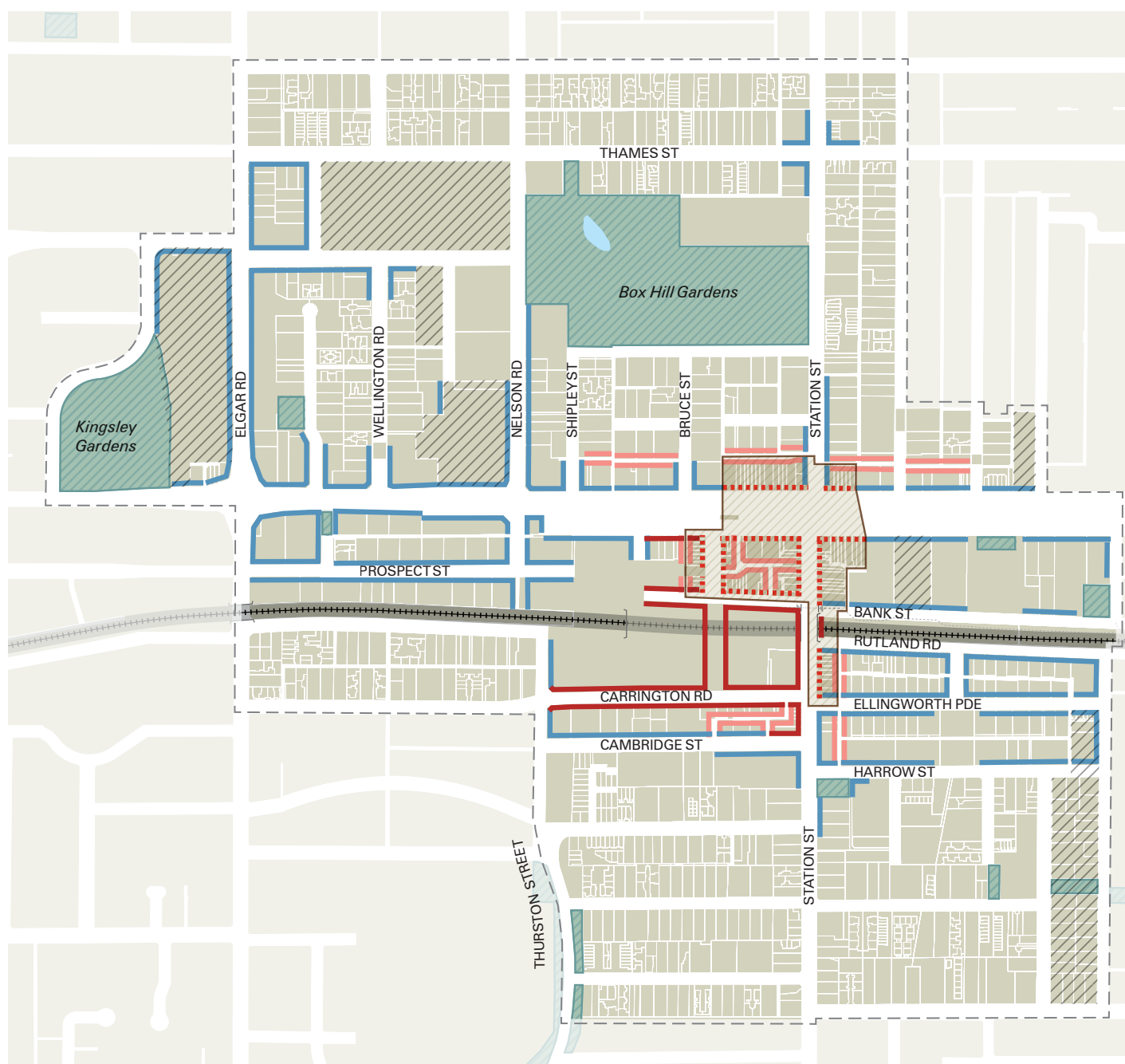


Figure 18 Active street frontages

- | | | | |
|--|--------------------------------|--|--|
| | Activity Centre Boundary | — | Urban Core Street |
| | Belgrave/Lilydale railway line | - - - | Urban Core Street – retain rhythm of existing fine grain |
| | Existing Open Space | — | Urban Activity Street |
| | Traditional Town Centre | - - - | Active Laneway |
| | Not in ACZ | | |

Note: The classification of active street frontage types are intended to be consistent with the urban realm terminology used in BHURTG. Only key frontages with design and development requirements are identified.

2.2.8 Vehicle access, car parking and loading

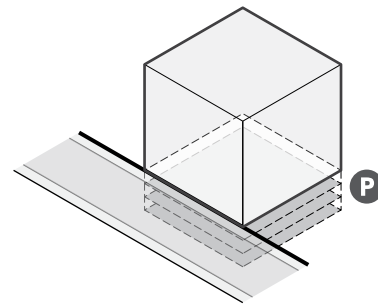
Recommendation

Provide guidance on the design of vehicle access and car parking

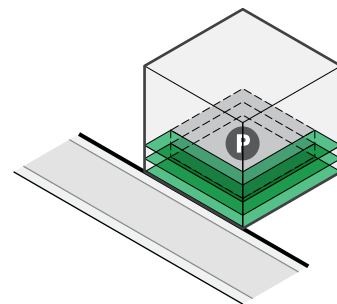
The provision of car parking at podium levels results in a poor street interface that does not provide any activation or visual interest. Parking should be located at full basement levels of the building and be sleeved with active uses if it is located at podium levels, see Figure 19. This will help provide adequate passive surveillance to the public realm and provide visual interest to the public realm.

Vehicular access to car parking should be located away from main streets, and the primary and local pedestrian network, to ensure high levels of amenity and safety of these streets for pedestrians, see Figure 20.

Figure 19 Preferred location of car parking



Basement carparking



Sleeve podium car parking with active uses

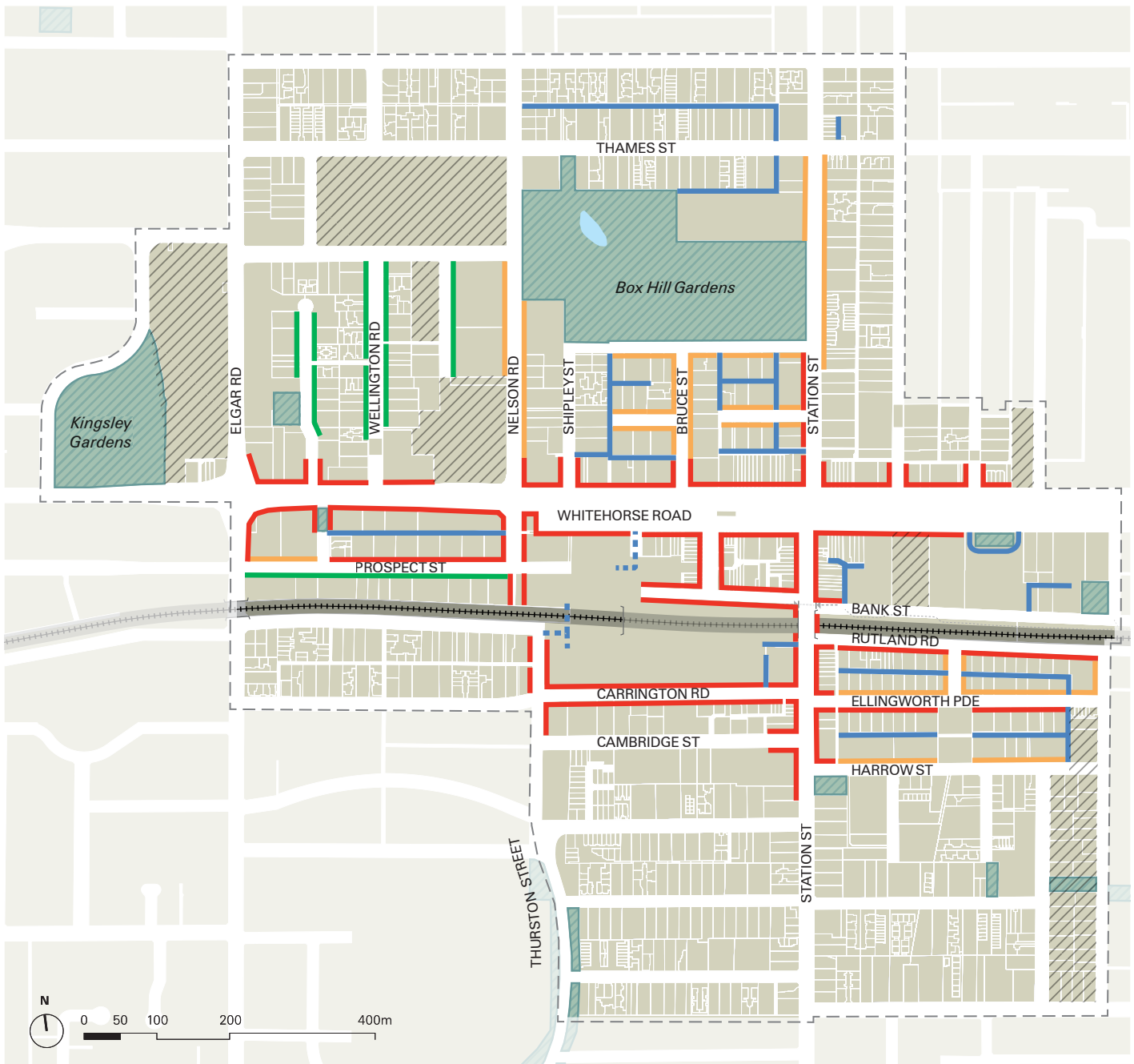


Figure 20 Vehicular access to car parking and loading areas

- [- - -] Activity Centre Boundary
- ++++ Belgrave/Lilydale railway line
- Existing Open Space
- Not in ACZ
- Service laneway – preferred access
- Proposed service laneway – preferred access
- No crossovers – strongly discouraged
- Crossovers discouraged
- Shared crossovers strongly encouraged

2.2.9 Building services

Recommendation

Provide guidance on the design of building services

The design and configuration of building services, including waste and loading, is a key consideration towards creating high-quality and safe interfaces between the building and the public realm. This can be achieved by minimising the amount of space occupied by services at ground level, consolidating and integrating services within the building and facade design in an unobtrusive manner to maximise active street frontages. This could be achieved by:

- Locating services away from main street frontages where possible.
- Consolidation of vehicular access entries for parking and loading.
- Locating substations above or below ground level to reduce the footprint of building services at ground level.
- Distributing separate service elements along the street frontage to reduce the creation of large blank walls.
- Integrating externally accessible service elements into the building facade design. This could include exposing some service elements and/or reducing the height of cabinets to maximise glazing to ground floor uses.



Figure 21 2-4 Bruce Street, Box Hill | Service cabinets and vehicular access dominate the street frontage.



Figure 22 Nightingale 1, Brunswick | Breathe Architecture Building service elements are partially exposed to maximise clear glazing at ground level (Photo: Bonnie Herring)



Figure 23 Harrow St Carpark, Box Hill | MGS Architects Building service cabinets are integrated into the building facade design.

2.2.10 Architecture, articulation and materials & finishes

Recommendation

Provide guidance on building materials, finishes and articulation

There is a need to ensure high quality, well-considered architecture that demonstrates design excellence, careful articulation and design detailing. The quality and resolution of materials and finishes deployed and the design and articulation of the building expression has a range of impacts on the public realm and for owners and occupiers of these buildings.

The use of robust materials improves the durability of buildings which is increasingly important in Box Hill with taller, strata titled buildings where maintenance is a key concern. Similarly, the use of appropriate materials, glazing systems and finishes is needed to ensure both durability and road safety (glare).

Encourage taller built form above street wall height to be designed 'in the round' – meaning that the intended design should wrap around corners and be seen from all sides. Blank or unarticulated walls are an inappropriate response for taller built forms.

Table 10 Materials, finishes and articulation guidelines

Guidance

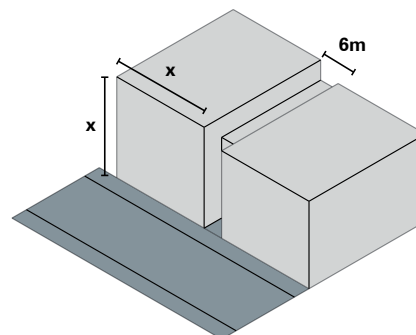
Materials and finishes

- Buildings with frontages to major and arterial roads should use materials and finishes with a perpendicular reflectivity less than 20 per cent, measured at 90 degrees to the façade surface.

Articulation

- Buildings should be detailed to provide visual interest to streets and public spaces.
- Buildings should avoid blank walls or façades.
- Sites with multiple buildings should be designed and detailed to create distinctive families of building elements (including building entrances, balconies and balustrades, awnings, planters, pergolas, boundary walls and fences).
- Buildings should be detailed to:
 - establish a fine-grain rhythm and scale within the façade.
 - be detailed to provide visual interest to streets and public spaces
 - integrate landscape opportunities
- Buildings with a frontage of more than 45m should be massed and modulated to create two or more building components with distinct architectural expressions as follows (see Figure 24):
 - The frontage length of each architectural component should not exceed the height of the street wall
 - The minimum separation between these expressions should be no less than 6 metres for the full height of the building
 - The depth of the separation should be no less than the upper level setback for the full height of the building.

Figure 24 Articulation requirement



2.2.11 Landscaping

Recommendation

Provide guidance on landscaping

Increasing densities within Box Hill over the next 20 years needs to be serviced by an increase in public open space. In this regard individual lots will need to contribute towards increased greenery and landscape character, particularly in specific areas where there is a clear deficit in landscape quality and provision. On very large sites, development should provide a significant landscape contribution to the amenity of the public realm. In addition, the character sought in each neighbourhood defines the type of landscaping required. For instance, in streets where a garden suburban character is preferred, developments should allow for rear landscape breaks.

In the urban core, this contribution could come in the form of high quality hard landscapes such as a square or plaza that provides a connection to the street but where greening does not necessarily dominate. The provision of landscaping on private land should support and supplement the outcomes sought in the Box Hill Open Space Strategy (BHOSS).

Table 11 Landscaping guidelines

Requirements
General requirements <ul style="list-style-type: none">Where practical, provide landscaping consistent with the preferred landscape character for each Neighbourhood as indicated in the Structure Plan. This should be consistent with the urban realm treatments specified in <i>Box Hill Urban Realm Treatment Guidelines</i> (BHURTG).
Strategic development sites <ul style="list-style-type: none">Areas identified as 'investigation area – development' in the Structure Plan, or larger sites enabled through aggregation, should provide landscaping commensurate with the scale and scope of the development proposal.

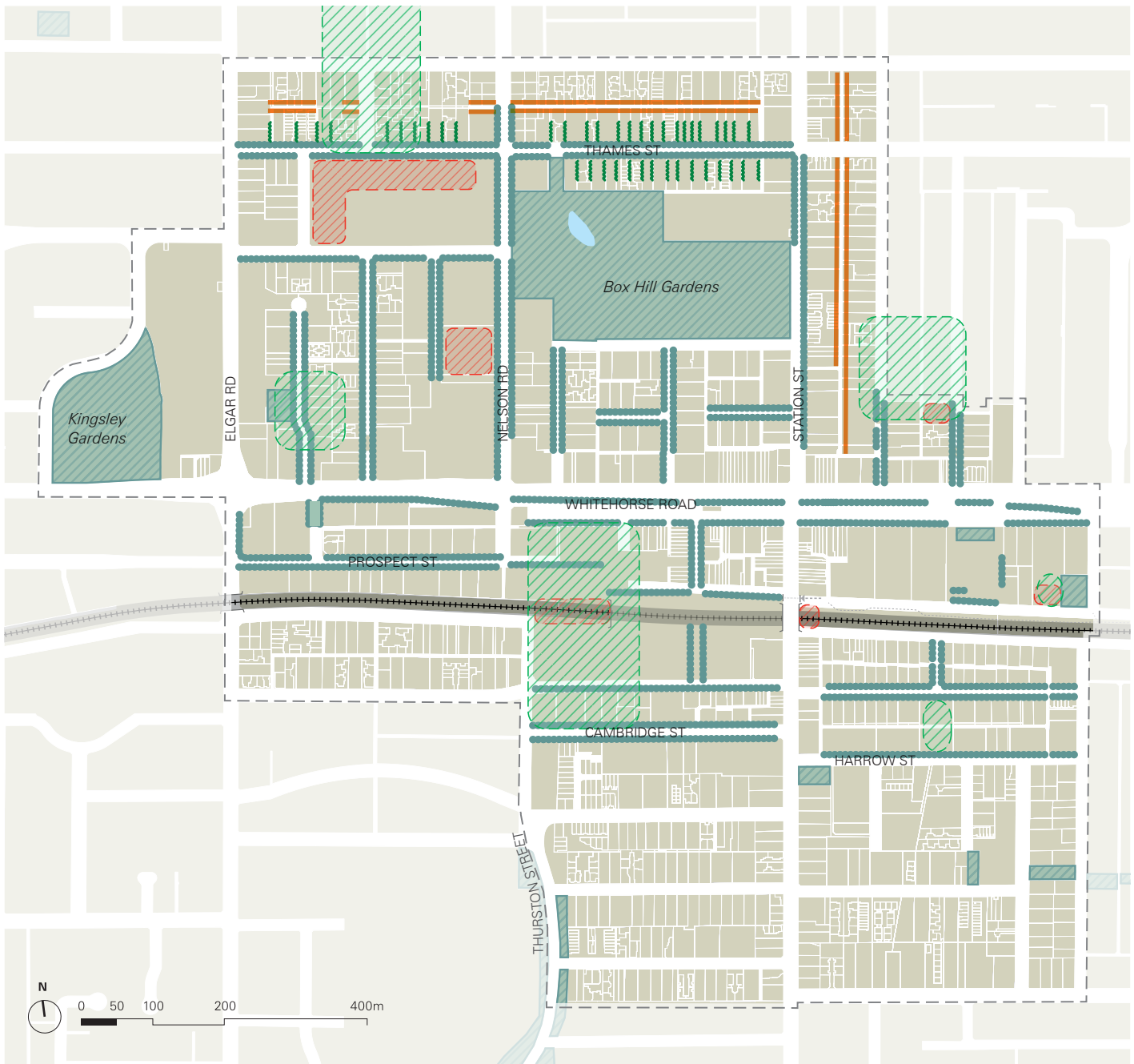


Figure 25 Landscape contribution areas

- [- - -] Structure Plan boundary
- Landscaping areas*
- Side breaks | side setback planting
- Rear breaks | rear setback planting
- Increase street canopy trees
- Future open space investigation areas (BHOSS)
- Investigation area | development major landscaping opportunities
- Existing open space

2.2.12 Pedestrian links

Recommendation

Provide guidance to co-ordinate new pedestrian links with future development in preferred locations

A major challenge for Box Hill is to deliver new and high-quality through block pedestrian links towards creating a CBD-like network of primary and local streets for walking. There are key gaps in the primary pedestrian network that require co-ordination (negotiated outcomes) with future development in these areas. It is proposed that this be implemented through subdivision provisions and decision guidelines in the ACZ. This would require proponents to make provisions for the delivery of new primary and links generally in accordance with the Figure 24. This may include the use of section 173 agreements to deliver these outcomes. Section 173 agreements is a negotiated agreement between the Responsible Authority with a landowner to achieve planning objectives in relation to the land.

Key moves include the following:

- New priority pedestrian and cycle link from Nelson Road to Thurston Street
- Completion of the east-west corridor north of Whitehorse Road between:
 - Archibald Street and Shipley Street
 - Shipley Street and Nelson Road
 - Nelson Road and Spring Street (in alignment with existing easement)
 - Elland Avenue and Bruce Street
- Extension of Market Street to Carrington Road, and extension of Main Street to Prospect Street in co-ordination with redevelopment of the major shopping centre. In addition to these key gaps, there is a need to provide new local through-block links that increases the overall permeability of the network.

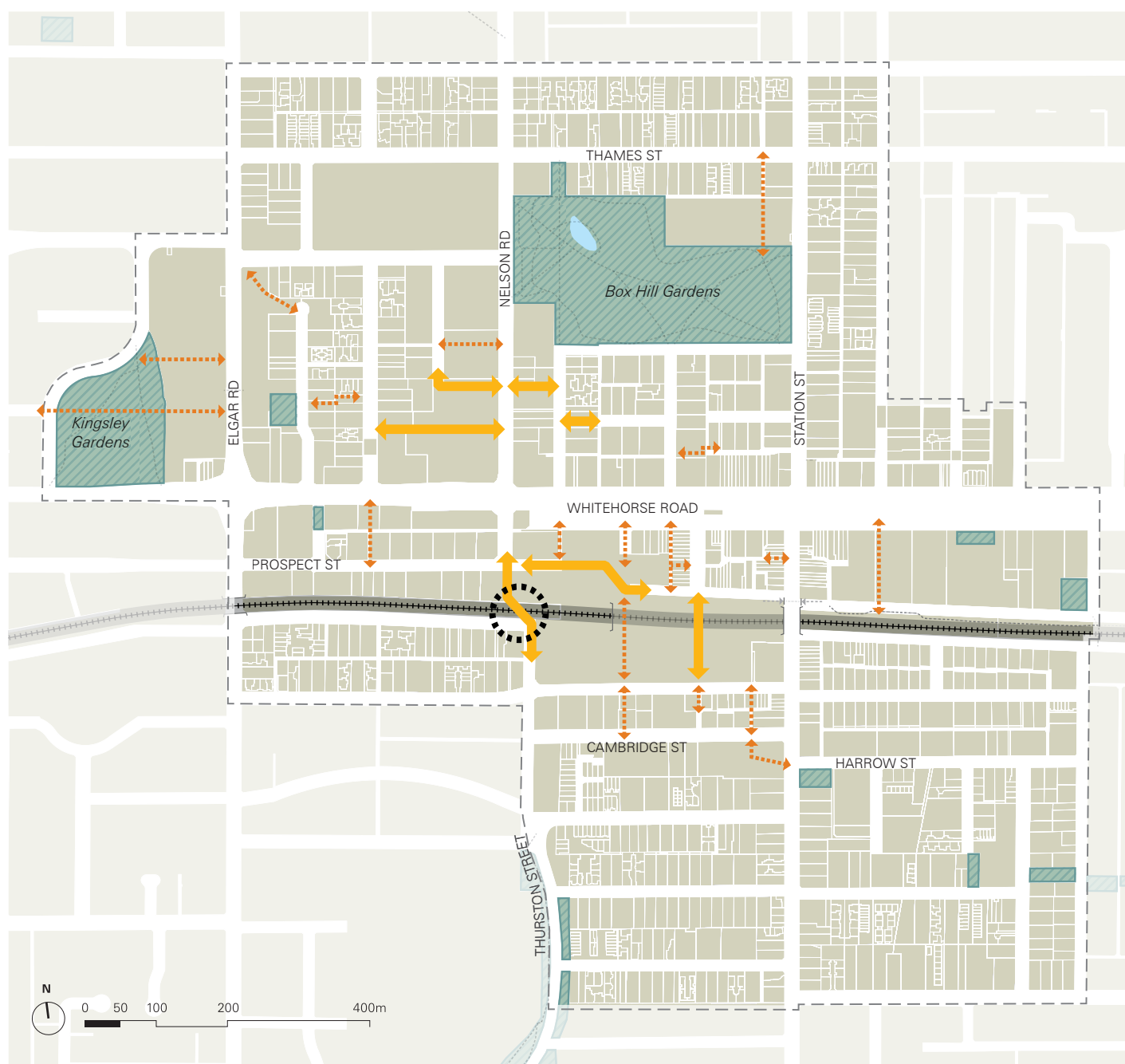


Figure 26 Preferred locations of future primary and local links on the Primary Pedestrian Network and Local Pedestrian Network.

- Structure Plan boundary
- Priority pedestrian and cycle link from Nelson Rd to Thurston St, including new crossing over the rail corridor

Preferred locations for future pedestrian links

- ↔ Primary Pedestrian Network | desirable
- ⋈ Local Pedestrian Network | desirable
- Existing open space

Testing Outcomes

3

3.1 Is there capacity to accommodate the proposed land use mix within Box Hill's neighbourhoods?

In order to test the overall planning outcomes for the activity centre we have prepared an estimate of future floorspace growth over the next twenty years. This has been prepared on a precinct-by-precinct basis to understand the differing growth outcomes foreshadowed by the vision and land use framework.

This is not a floorspace target or a prediction of future change, it is one growth scenario amongst many potential outcomes.

It is anticipated that some neighbourhoods will grow significantly faster, and some neighbourhoods may grow at a slower rate compared to this estimate. Some sectors, for example major health and tertiary education, are strongly influenced by State and Federal Government funding priorities. Private development is greatly influenced by the development market and economic cycles, which may accelerate or slow down development outcomes. Overall, the centre as a whole may also grow much faster or slower than projected, particularly in the context of future major transport investment such as the Suburban Rail Loop.

This estimate is based primarily on projected demographic growth for the centre as a whole, derived from Victorian Government's Victoria in the Future (VIF) 2016 forecasts. Analysis from SGS Economics and Planning has indicated that this is a conservative estimate of potential change compared to other estimates such as .id Consulting and preliminary indications from VIF2019.

Our methodology distributes this growth across the neighbourhoods in the centre based on both the existing land uses and preferred future land use mix derived from the vision statements.

For example, the majority of existing health related floorspace is located within the Health and Education precinct. It is reasonable to assume that the majority of growth in health related employment is likely to occur within the same precinct, with a small proportion of health floorspace growth spilling over into adjacent neighbourhoods

The distribution of floor area in this model uses the residential / non-residential maximum percentages proposed for the ACZ schedule. Where a 30% maximum for residential floorspace is applied this is reflected in future growth estimates.

Most sites across the centre are already occupied by existing buildings and uses. Thus we need to estimate what sites are available for future development. Using a mapping database we set aside sites that have recently been developed or are under construction. Of the available sites, we estimated that only two out of every three (65%) will actually be developed over the next 20 years.

The floor area of buildings that are replaced does not disappear. It is important to estimate the overall floor area required to replace existing uses as well as generating the net growth in floorspace. Floorspace for existing uses is displaced and reallocated within new development across the centre. Thus a greater amount of future development is needed to be constructed to achieve the net growth required to meet demographic projections.

The overall figures and breakdown by neighbourhood is set out below.

Table 12 Required approvals to achieve projected growth — how much development is required to deliver the floorspace needed to accommodate the projected growth in employment and dwellings?

	Overall Growth in GFA (net)	Gross GFA required to account for growth and displaced uses
Box Hill MAC	731,000	895,000
Health and Education	294,000	301,000
Prospect	78,000	117,000
Garden	59,000	74,000
Central	223,000	281,000
Civic & Cultural	16,000	30,000
Enterprise	29,000	48,000
Residential Transition	30,000	45,000

3.2 How much development is provided within the envelope defined by the built form guidelines?

Estimating a development envelope

3D modelling produced an initial planning envelope for sites across the centre (generating floorplates allowing a measurement of gross floor area). These envelopes were derived from centre-wide built form controls, including: preferred maximum building height, street wall height and upper level setbacks, side and rear setbacks as well as overshadowing controls.

This model also assumes all sites are separately owned and individually developed. This is a conservative assumption, since consolidated sites are likely to generate greater potential yields. This envelope does not account for granular controls or guidelines such as street wall setbacks or other site-specific circumstances, nor attempt to model actual building depths. As a conservative assumption (*Assumption 1*), the yield of the 3D-model derived planning envelope was reduced by half (50%) to provide an estimate for the lower GFA resulting from actually developable floorplates resulting from applying the planning guidelines. This provides us with an estimated yield of a hypothetical development envelope.

Estimating an indication of yield over the next 20 years

To determine the feasibility of the recommended built form framework in accommodating both significant forecast growth and land use aspirations for each neighbourhood, a high-level estimation of indicative yield over the next 20 years was prepared. This estimation relied on a range of assumptions, these included:

- Only 65% of available sites, i.e. 65% of estimated development envelope, will be developed (*Assumption 2*)
- All developments currently under construction and approved permits will be constructed.
- Buildings 4 storeys and lower were not modelled. We applied a general assumption for low-rise developments over the next twenty years based on analysis of planning permit applications. This assumed that 50 sites across the centre will be developed with an average GFA of 2000m².

As a whole, 3D modelling and high-level indicative yield estimates strongly suggest that the recommended built form controls would comfortably accommodate forecast growth on a gross basis even accounting for displaced uses. Future growth would use 74% of the available yield if 65% of sites were developed in accordance with the estimated development envelope.

Figure 27 Illustrative difference between 3D model envelope and estimated development envelope.

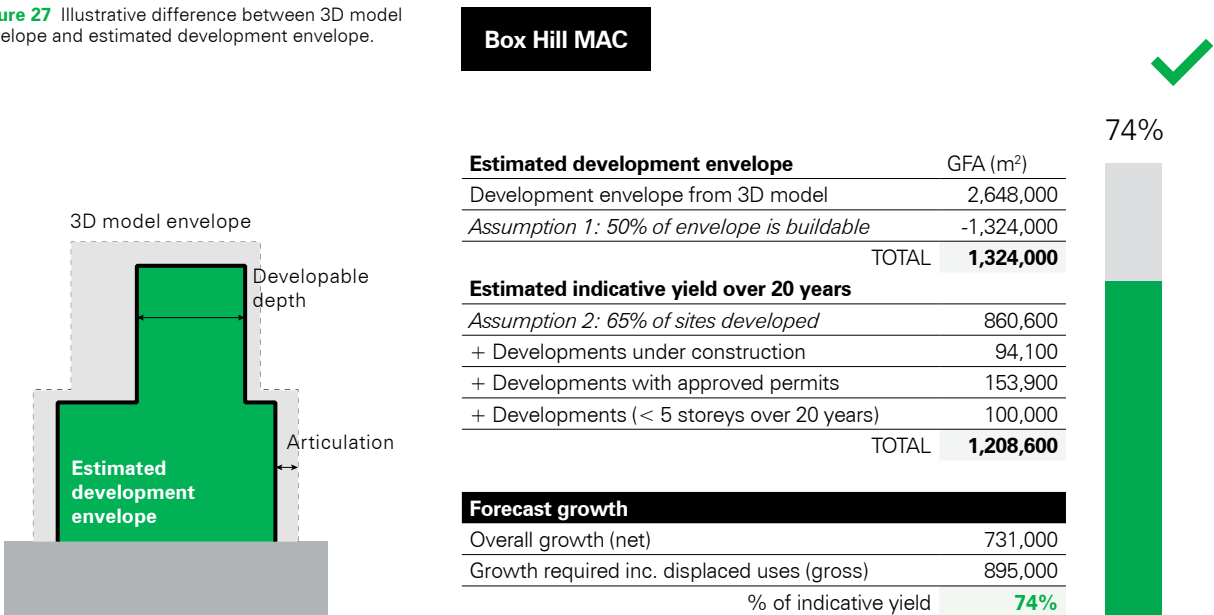


Figure 28 View 1 of estimated planning envelopes in Box Hill for buildings of 5 storeys and above

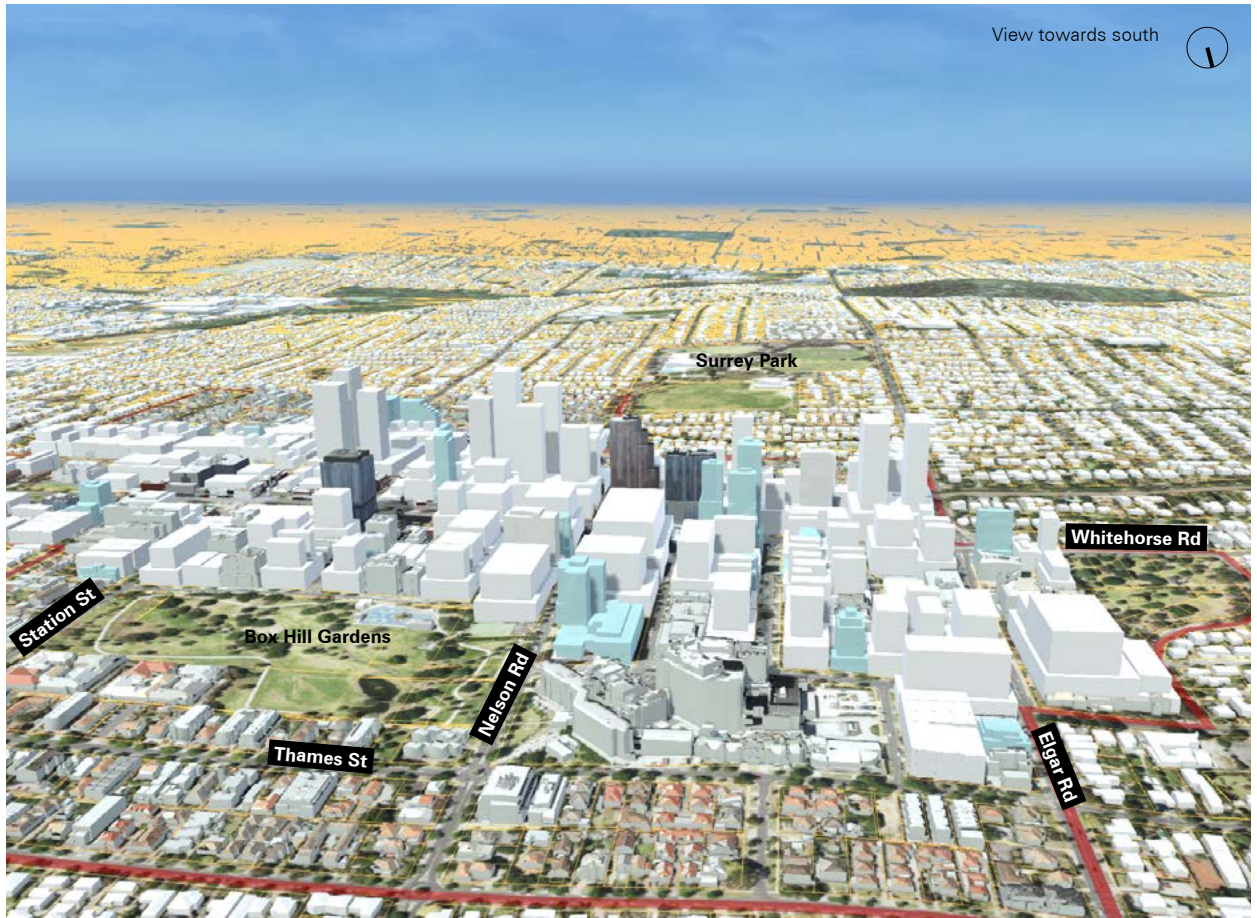


Figure 29 View 2 of estimated planning envelopes in Box Hill for buildings of 5 storeys and above



Precinct 1: Central

Precinct development envelope ■
Approved built form ■

79%

Estimated development envelope		GFA (m ²)
Development envelope from 3D model		777,000
Assumption 1: 50% of envelope is buildable		-388,500
TOTAL		388,500

Estimated indicative yield over 20 years		
Assumption 2: 65% of sites developed		252,525
+ Developments under construction		47,700
+ Developments with approved permits		56,500
+ Developments (< 5 storeys over 20 years)		-
TOTAL		356,725

Forecast growth

Overall growth (net)		223,000
Growth required inc. displaced uses (gross)		281,000
% of indicative yield		79%



Precinct 2: Health & Education

81%

Estimated development envelope		GFA (m ²)
Development envelope from 3D model		918,000
Assumption 1: 50% of envelope is buildable		-459,000
TOTAL		459,000

Estimated indicative yield over 20 years		
Assumption 2: 65% of sites developed		298,350
+ Developments under construction		1,300
+ Developments with approved permits		72,200
+ Developments (< 5 storeys over 20 years)		-
TOTAL		371,850

Forecast growth

Overall growth (net)		294,000
Growth required inc. displaced uses (gross)		301,000
% of indicative yield		81%



Precinct 3: Prospect

66%

Estimated development envelope		GFA (m ²)
Development envelope from 3D model		444,000
Assumption 1: 50% of envelope is buildable		-222,000
TOTAL		222,000

Estimated indicative yield over 20 years		
Assumption 2: 65% of sites developed		144,300
+ Developments under construction		29,900
+ Developments with approved permits		3,700
+ Developments (< 5 storeys over 20 years)		-
TOTAL		177,900

Forecast growth

Overall growth (net)		78,000
Growth required inc. displaced uses (gross)		117,000
% of indicative yield		66%



Precinct 4: Garden

Precinct development envelope

Approved built form

Estimated development envelope	GFA (m ²)
Development envelope from 3D model	153,000
Assumption 1: 50% of envelope is buildable	-76,500
TOTAL	76,500

Estimated indicative yield over 20 years

Assumption 2: 65% of sites developed	49,725
+ Developments under construction	15,200
+ Developments with approved permits	3,600
+ Developments (< 5 storeys over 20 years)	40,000
TOTAL	108,525

68%

Forecast growth

Overall growth (net)	59,000
Growth required inc. displaced uses (gross)	74,000
% of indicative yield	68%



Precinct 5: Civic & Cultural

Estimated development envelope	GFA (m ²)
Development envelope from 3D model	133,000
Assumption 1: 50% of envelope is buildable	-66,500
TOTAL	66,500

Estimated indicative yield over 20 years

Assumption 2: 65% of sites developed	43,225
+ Developments under construction	0
+ Developments with approved permits	8,700
+ Developments (< 5 storeys over 20 years)	10,000
TOTAL	61,925

48%

Forecast growth

Overall growth (net)	16,000
Growth required inc. displaced uses (gross)	30,000
% of indicative yield	48%



Precinct 6: Enterprise

Estimated development envelope	GFA (m ²)
Development envelope from 3D model	223,000
Assumption 1: 50% of envelope is buildable	-111,500
TOTAL	111,500

Estimated indicative yield over 20 years

Assumption 2: 65% of sites developed	72,475
+ Developments under construction	0
+ Developments with approved permits	5,000
+ Developments (< 5 storeys over 20 years)	-
TOTAL	77,475

62%

Forecast growth

Overall growth (net)	29,000
Growth required inc. displaced uses (gross)	48,000
% of indicative yield	62%



Precinct 7: Northern and Southern Residential Transition

Estimated development envelope		GFA (m ²)
Development envelope from 3D model		Not modelled
Assumption 1: 50% of envelope is buildable		-
TOTAL		-
Estimated indicative yield over 20 years		
Assumption 2: 65% of sites developed		-
+ Developments under construction		-
+ Developments with approved permits		4,200
+ Developments (< 5 storeys over 20 years)		50,000
TOTAL		54,200

Forecast growth	
Overall growth (net)	30,000
Growth required inc. displaced uses (gross)	45,000
% of indicative yield	83%

83%



3.3 Testing the built form guidelines — planning envelopes for potential development

The combination of setbacks to the front, rear and sides above street wall height means that some smaller sites may not be able to be built to the preferred maximum height of its location. This is intentional and is a specific response to community feedback that built form height should relate to the size of the land as well as the height of surrounding buildings.

Side and rear setbacks

The side and rear setbacks ensure that there is adequate separation between built form on adjoining sites above the street wall height. The separation ensures that it is possible to see the sky in between taller built form. The setbacks also ensure that taller built form is designed to be seen from all sides rather than presenting a blank facade to an adjoining site.

There are two thresholds where side and rear setbacks may constrain overall building height:

- For very narrow or small sites the required side setbacks may mean there is no feasible footprint for built form above street wall height. Sites less than 10 metres wide will only be able to be built to the street wall height.
- For moderately sized sites there may be a feasible footprint for development above street wall height providing 5 metre setbacks but not for 10 metre setbacks. These sites will be constrained to a maximum of 15 storeys.

Figure 30 Testing outcomes of side and rear setbacks to sites on Prospect Street



Incentivising lot consolidation

The combination of existing lot size and setback requirements provides a clear incentive for lot consolidation in locations where taller built form is otherwise possible (see Figure 31 and Figure 30). Larger sites created through lot consolidation are better able to manage off-site impacts, such as vehicular access, services and loading, and accommodate built form while still ensuring there is appropriate separation between towers.

Street wall height and upper level setbacks

The application of a street wall ensures that the height of the lower levels of a building (podium) is related to the width of the street (see Figure 32). This demonstrates how recessive built form is achieved above the street wall through the application of upper level setbacks. This ensures an appropriate sense of enclosure while providing clear views to the sky from the street.

Figure 31 The application of side and rear setbacks above the street wall provides a clear incentive for lot consolidation in locations where taller built form is possible.

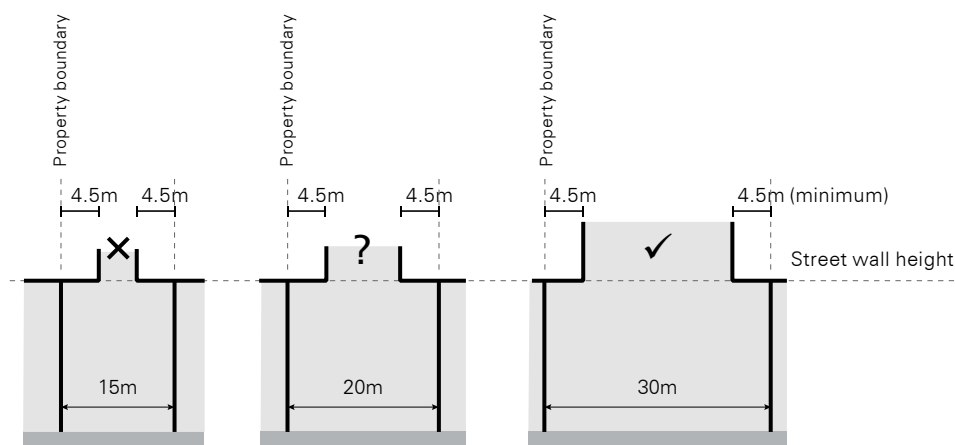
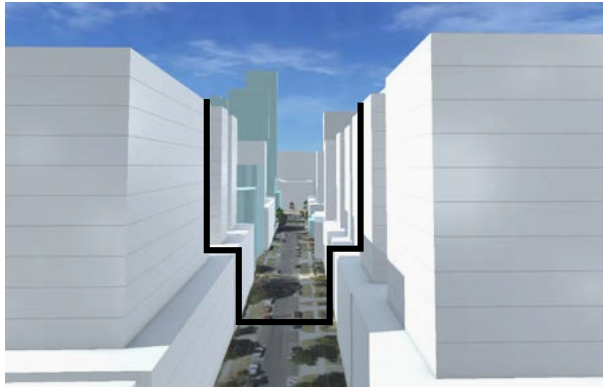
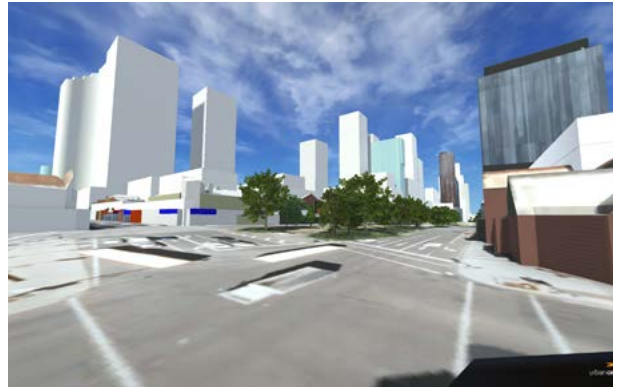


Figure 32 Testing street wall heights and upper level setbacks



Wellington Road towards south, demonstrating the street wall and upper level setbacks in relation to width of the street



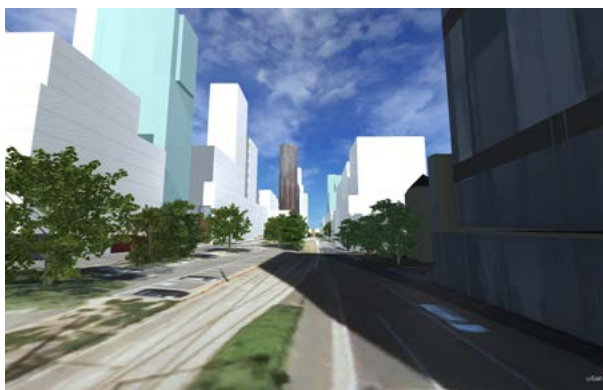
Streetscape view of Central Neighbourhood from Station Street/Whitehorse Road



Streetscape view of Carrington Road towards the east



Streetscape view of Prospect Street towards the west



Streetscape view of Whitehorse Road towards the west



Streetscape view of Station Street towards the south



Streetscape view of Bruce Street towards the south from Irving Avenue



Streetscape view of Garden Neighbourhood from Box Hill Gardens

Implementation

4

4.1 Integration into the Activity Centre Zone

The recommended built form framework should be tightly integrated into the Activity Centre Zone. Specifically, the primary controls should be incorporated as Centre Wide Design and Development provisions with particular precinct-specific requirements, such as landscaping and provision of new links, be incorporated through Precinct Provisions.

Figure 33 Implementation of the UDF within the Activity Centre Zone

