Hodyl & Co

Preston Central
Built Form Framework - Technical Report

Prepared for the Darebin City Council
February 2022

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Introduction

Purpose

The purpose of the Preston Built Form Framework Technical Report is to test and refine the proposed built form controls. The work undertaken to date identified key issues to be resolved through the testing and established six design strategies to guide future development in Preston Central.

Design strategies

BUILDINGS NEED TO CONTRIBUTE TO THE PRECINCTS

Buildings should make a positive contribution to precincts by enhancing the valued characteristics that are particular to each of those places.

BUILDINGS NEED TO BE SUSTAINABLY DESIGNED

Buildings should be designed to reduce energy consumption through reduced reliance on artificial lighting, heating and cooling.

BUILDINGS NEED TO INTEGRATE LANDSCAPE

Buildings should integrate landscape in order to reduce Urban Heat Island Effect and contribute to the amenity of Preston Central.

BUILDINGS NEED TO BE GOOD NEIGHBOURS

Buildings should have a positive interface to the houses that interface the study area.

STREETS NEED TO BE SAFE AND ENGAGING

Buildings should make a positive contribution to the street and be responsive to the width of the street.

STREETS AND PARKS NEED TO STAY SUNNY

Streets and parks need to remain sunny with the important spaces identified as High Street, Gower/Cramer Street and Preston Oval.

Precincts

Six precincts have been identified based on the existing character in Preston Central (Figure 1).

HIGH STREET PRECINCT

The High Street Precinct is the central street in Preston Central and is lined with shops, cafes and restaurants. The character is a mix of buildings of different styles and eras and many of the buildings are adorned with colourful signage.

REGENT PRECINCT

The Regent Precinct is the continuation of High Street to the north and has predominantly large format warehousing and car yards. Substantial change is anticipated in this precinct.

MARKET PRECINCT

The Market Precinct sits between High Street and Preston Station. The Market Precinct excludes the Preston Market as the site is currently in the planning stage of redevelopment. However, the built form approach is informed by the vision for transformational change on the site. The Preston Market is excluded as the site is currently in the planning stage of redevelopment and the outcome is not determined. The precinct boundary includes sites that surround Preston Market including those that interface Preston Oval and those that interface Murray Road.

CIVIC PRECINCT

The Civic Precinct is home to many civic buildings that serve the broader community of Darebin including the Darebin Town Hall, Darebin Council offices, the Preston Library, the Preston Police Station and a local childcare centre. A Masterplan was prepared for the Civic Precinct in 2006.

HIGH STREET NORTH PRECINCT

The High Street North Precinct has a mixed character with different types of heritage buildings, car yards and industrial buildings. There are also a mixture of uses including gyms, wholesalers, restaurants and cafe. This mix of building types means that an interesting mix of uses can be supported.

BELL STREET PRECINCT

The Bell Street Precinct is to the south of the study area and is oriented east-west along Bell Street and anchored by Bell Station in the west. There are predominately large sites in the precinct, that are being redeveloped into large-scale commercial and residential buildings. The existing buildings are majority multi-story commercial and residential buildings.

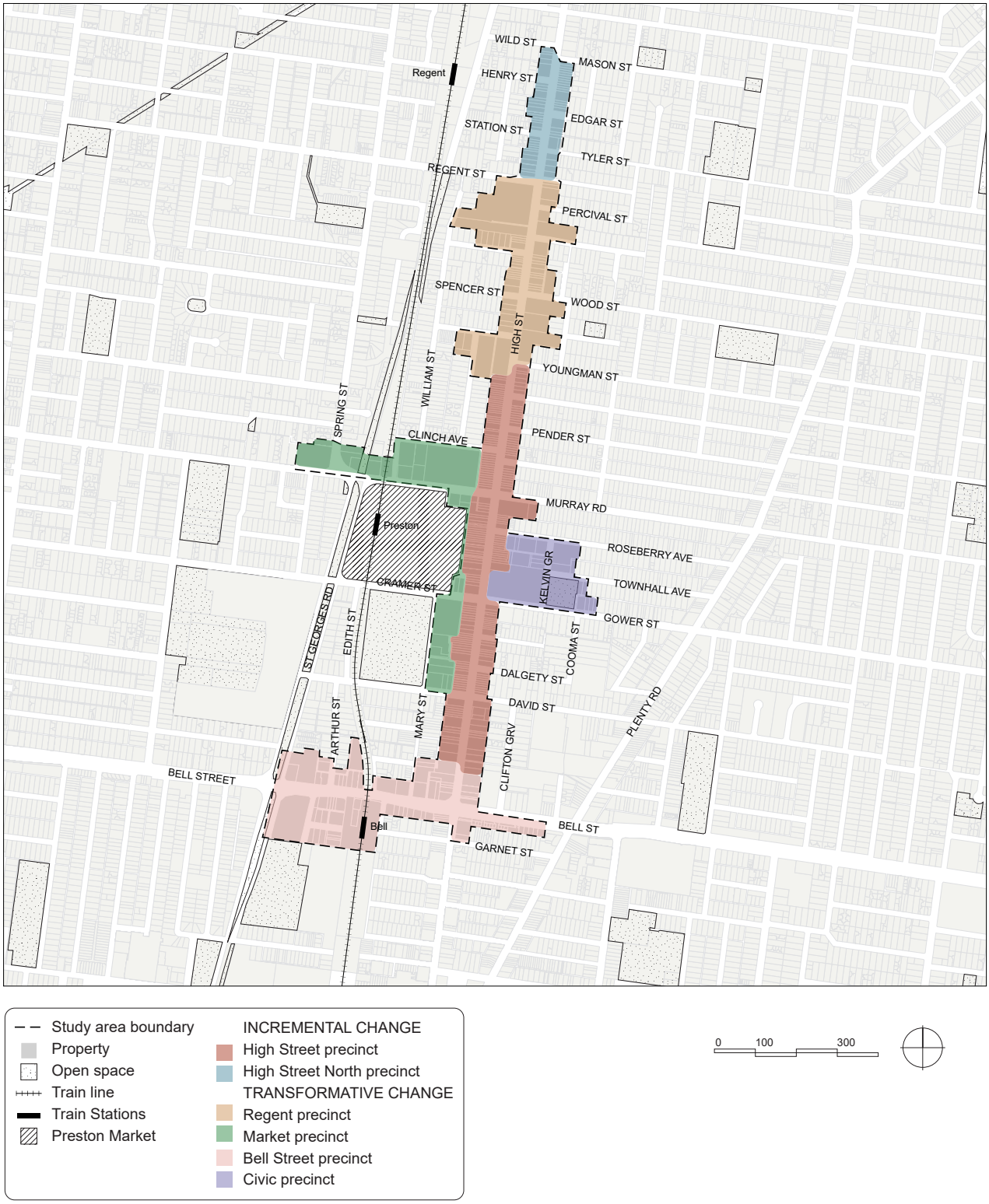


Figure 1. Precincts in Preston Central.

Introduction

Methodology

The methodology for the Technical Report was a five stage process. This is summarised in Figure 3.

1. DETERMINING ISSUES

The Draft Built Form Framework identified the key issues to resolve through the testing phase.

2. IMPLEMENTING STRATEGIES

The Draft Built Form Framework identified six design strategies that needed to be implemented and tested in the testing phase. Translating these qualitative design strategies into metrics ensures that they are measurable and implementable.

3. ESTABLISHING ASSUMPTIONS

Built form assumptions were established to ensure that a clear and transparent approach was taken to the built form testing. This included the adoption of the building separation controls outlined in the Darebin Good Design Guide.

4. UNDERTAKING ANALYSIS

Two types of analysis were undertaken - sensitive interface testing and precinct testing on selected sites.

5. MAKING REFINEMENTS

The findings from the testing were then used to inform recommended updates to finalise the Built Form Framework (see Figure 2).

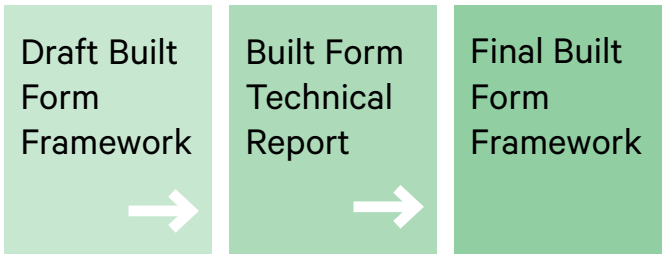


Figure 2. Preparation of the Final Built Form Framework.

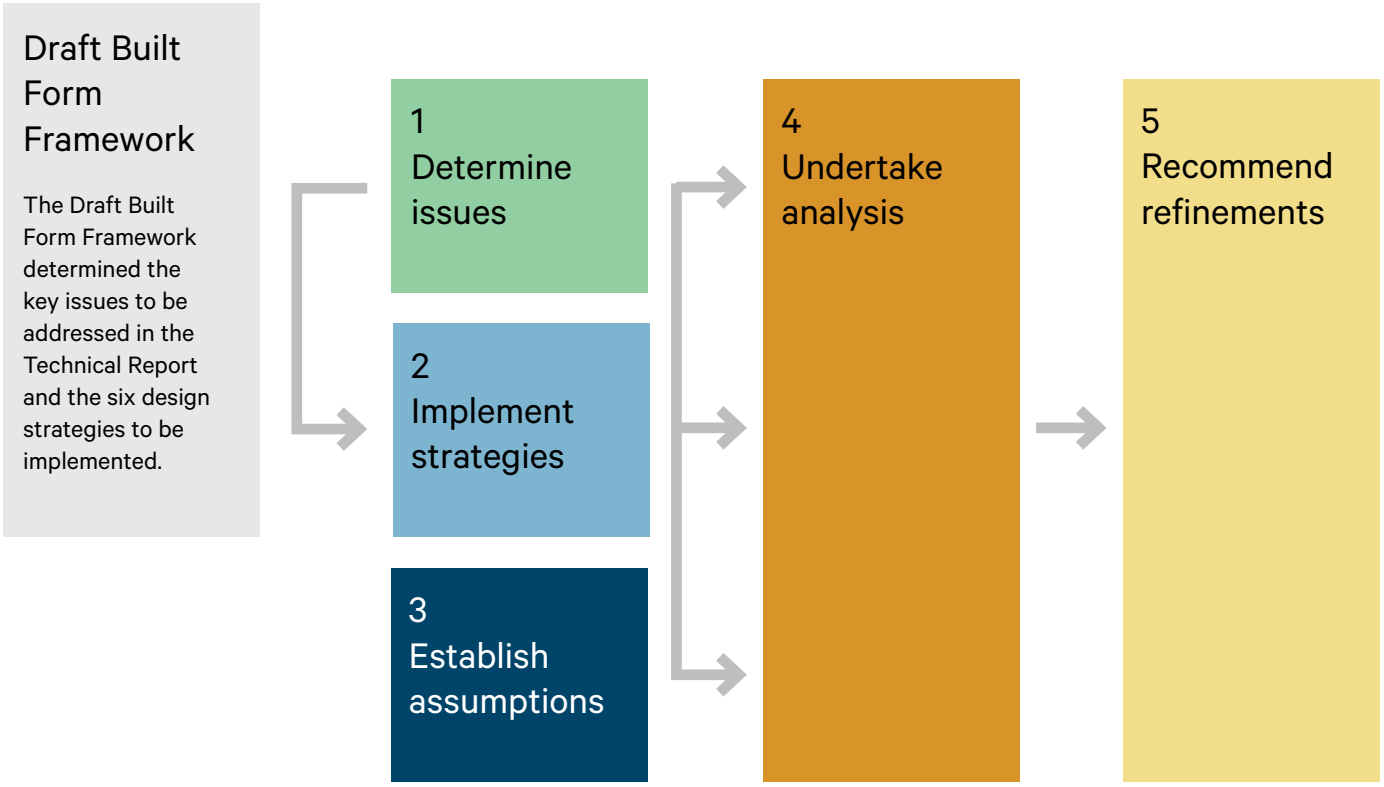


Figure 3. Technical report method

1. Determine issues

The Draft Built Form Framework identified the following key issues to resolve through the testing phase:

- Review heights in selected precincts.
- Review street wall heights and upper-level setbacks.
- Establish an approach to managing sensitive interfaces.
- Determine appropriate Floor Area Ratio (FAR) controls
- Introduce building separation requirements.

Figure 4 summarises the method used to address key issues identified in the Draft Built Form Framework.

Review heights

Review the existing height controls to reflect the evolution of Preston Central since they were both drafted. This review will ensure that proposed heights align with the proposition to protect solar access to key streets and public spaces. This analysis is progressed in the precinct testing.

Review street wall heights and upper-level setback

Review the existing street wall heights and upper-level setbacks to establish precinct specific built form controls that are responsive to context. This analysis is progressed in the precinct testing.

Establish approach to sensitive interfaces

Establish and test design outcomes at sensitive interfaces to provide clarity on the preferred outcome to manage amenity to neighbouring low-scale areas. This analysis is progressed through the sensitive interface testing.

Determine appropriate FARs

Determine appropriate Floor Area Ratio (FAR) controls that support sustainable building typologies that integrate landscape and minimise energy demand. This analysis is progressed in the precinct testing.

Introduce building separation controls

Introduce building separation controls to ensure that sufficient building separation is provided to support good design outcomes internally and for neighbouring sites. The Darebin Good Design Guide outlines preferred building separation controls in Darebin. These are currently used to negotiate building separation requirements in the municipality. These have been adopted as assumptions in the testing to ensure that a consistent approach is taken to building separation controls in the municipality. A summary of these requirements is provided in the assumptions section of the report.

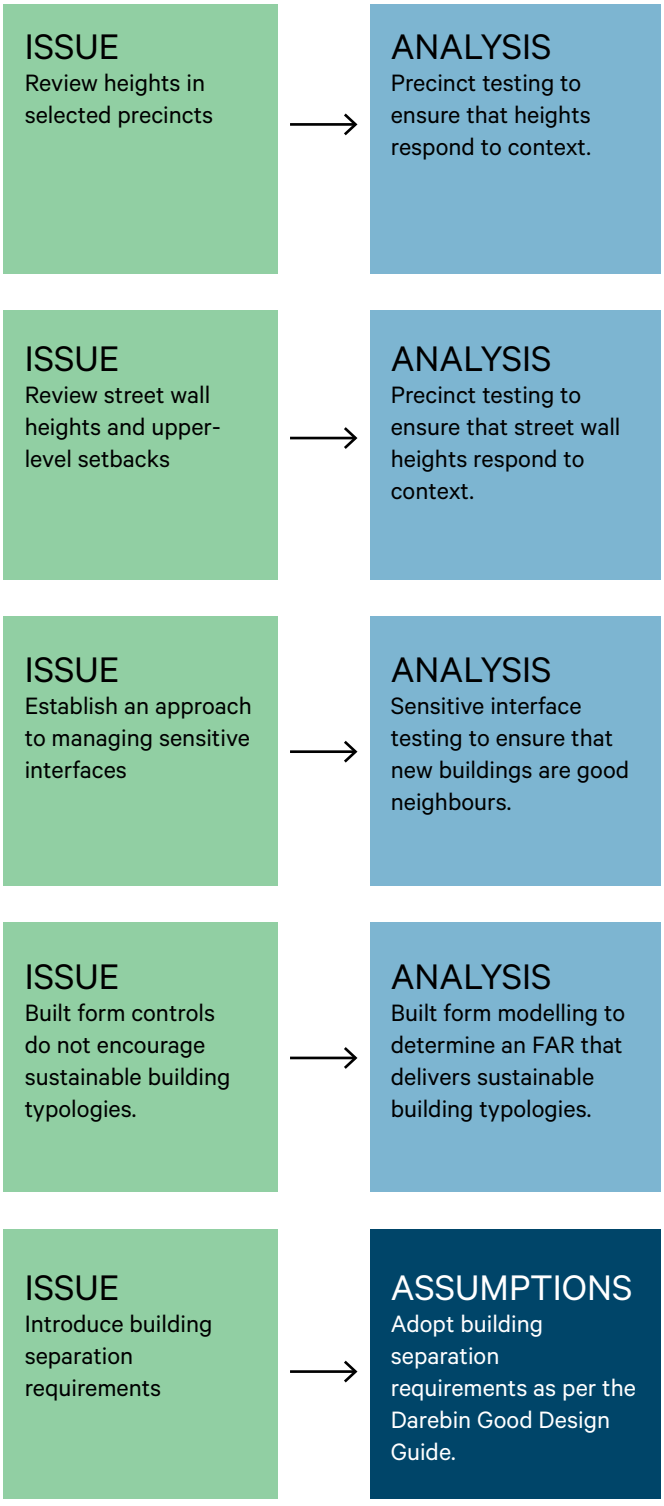


Figure 4. Method to address key issues identified in the Draft Built Form Framework.

Preliminary height review

A preliminary review of the existing height controls was undertaken for each of the identified precincts in Preston Central (see below).

A minor review of the existing heights is proposed. The existing height range of between 4 and 6 storeys is an appropriate scale for the fine-grain retail core, however, opportunities to increase from 4 to 6 storeys should be tested.

A review of the existing heights is proposed in response to the progression of major projects in the Market Precinct. This includes the Level Crossing Removal Project and the Draft Preston Market Precinct Structure Plan which proposes building heights ranging between 10 and 20 storeys.

A review of the existing heights is proposed that identifies opportunities to increase building heights while providing a good design outcome for houses neighbouring the precinct. This is considered appropriate due to the large scale of sites and changing land use in the precinct.

No review is proposed of the existing heights in the Civic Precinct. The area has existing heights proposed of between 5 and 7 storeys with heights increasing to 7 storeys at the centre of the site on a central carpark. This is still considered an appropriate outcome for the Civic Precinct.

No height limits are currently in place in the High Street North Precinct. A height limit of four storeys should be tested based on its high heritage value and its interfaces to single storey houses to the east and west.

A review of the existing heights heights is proposed in response to the progression of the Level Crossing Removal Project in the Bell Street Precinct. There is a need to review in particular to the west of the station around the Darebin Arts and Entertainment Centre.

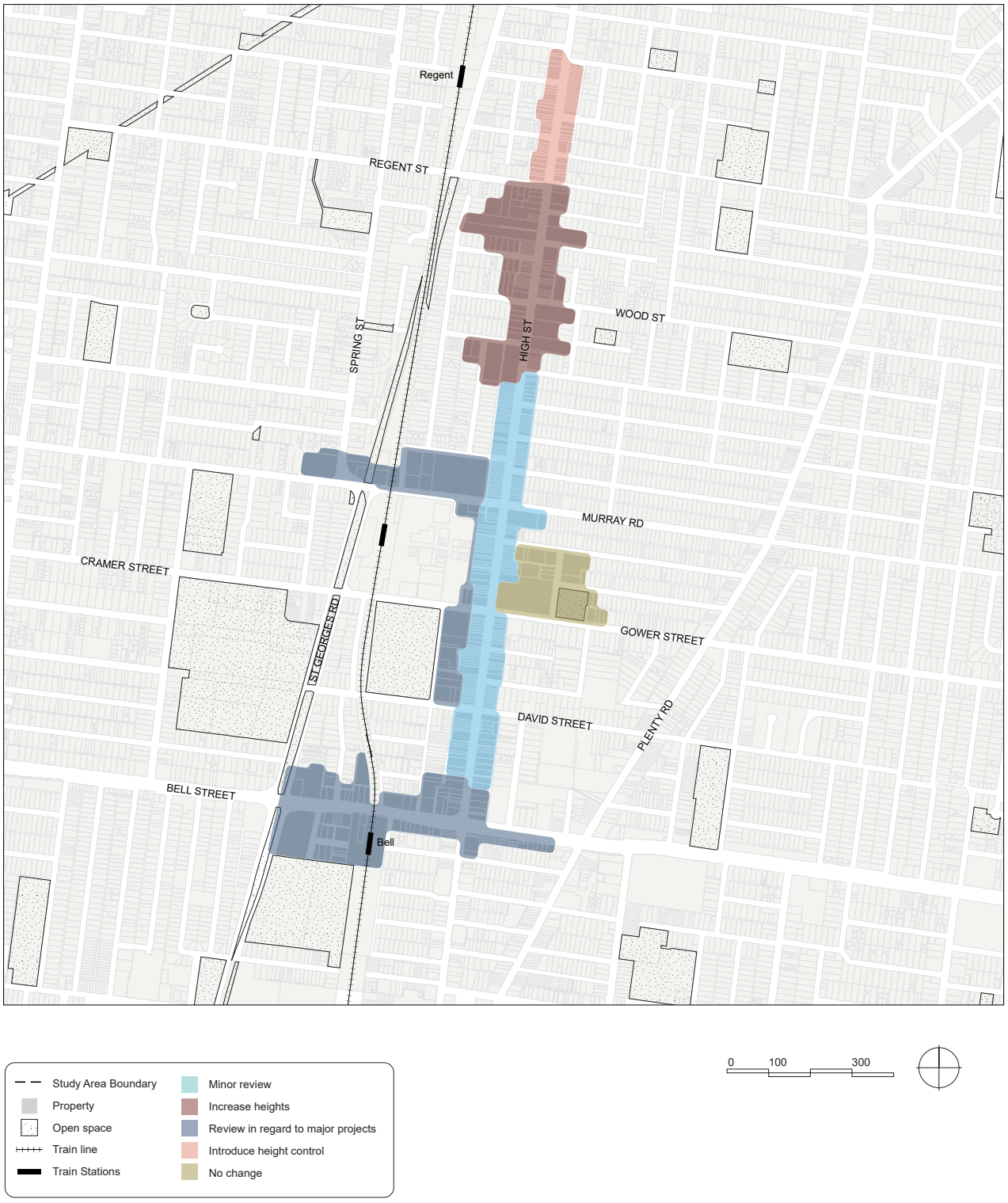


Figure 5. Preliminary review of existing building height controls to inform testing.

Table 1 summarises the six design strategies to guide development in Preston Central. The translation of these design strategies into metrics will ensure that they are measurable and implementable. The provision of these metrics ensures that development applicants and those assessing applications have clarity on the preferred outcomes.

Table 1 outlines the proposed built form controls to give effect to the design strategies.

DESIGN STRATEGY	Height controls	Floor Area Ratio controls	Site coverage controls	Ground floor landscape controls	Solar access controls	Sensitive interface controls	Street wall heights and upper level setbacks
Buildings need to contribute to the precinct	●	●	●	●	●	●	●
Buildings need to be sustainably designed		●	●	●			
Buildings need to integrate landscape		●	●	●			
Buildings need to be good neighbours	●	●			●	●	
Streets need to be safe and engaging	●			●	●	●	●
Streets and parks need to stay sunny	●				●		

Table 1. Built form metrics that give effect to the design strategies.

Buildings need to contribute to the precinct

Buildings should make a positive contribution to precincts by enhancing the valued characteristics that are particular to each of those places. This can be achieved by designing buildings that respond to the existing context and provide new amenity in the form of laneways, open spaces and landscape.

Buildings need to be sustainably designed

Buildings should be designed to reduce energy consumption through reduced reliance on artificial lighting, heating and cooling. This can be achieved by optimising access to daylight, creating good thermal mass, integrating landscape to reduce runoff and heat gain and supporting natural ventilation to internal spaces.

Buildings need to integrate landscape

Increased density does not have to result in buildings that cover the entirety of sites. There is an opportunity to build up without building out and to retain spaces for greening, entrance ways and other design features. This is beneficial for the environment, improves amenity and reduces pressure on infrastructure.

Buildings need to be good neighbours

Buildings should have a positive interface to the houses that interface the study area. Sensitive interface guidelines are required to sensitively transition between buildings of different scales.

Streets need to be safe and engaging

Buildings should make a positive contribution to the street and be responsive to the existing heritage context and width of the street.

Streets and parks need to stay sunny

Streets and parks need to remain sunny with the important spaces identified as High Street, Gower/Cramer Street and Preston Oval.

Figure 6. The six design strategies.

Floor Area Ratio controls

Floor Area Ratios (FARs) control the total floor area of a building in relation to the area of the site. It is important to set the FAR at a level that balances support for development intensification with the delivery of well-designed buildings.

FARs support context responsive and sustainable design. Controlling the amount of floorspace yield on site is a direct and effective way of supporting contextually sensitive design responses. Further to this, FARs support the design of more sustainable building forms by facilitating the delivery of building typologies that have reduced reliance on artificial lighting, heating and cooling.

This is because FARs set the amount of floorspace that can be delivered and thereby shift the focus from maximising floorspace yield, to maximising the design benefits that can be delivered. This reduces the pressure to deliver excess floorspace within built form envelopes which can lead to poorly designed buildings that are unsustainable by design.

The design outcomes that can be delivered through a combination of building envelope controls (overall heights, setbacks, solar controls) and FAR controls are:

- Sufficient daylight and sunlight access to interiors of buildings
- Provision of high-quality outlook from internal apartment areas.
- Integration of landscape and permeable surfaces.
- Avoidance of 'wedding cake' building designs where planar (e.g. solar plane) controls apply and the envelope is 'filled' with the maximum amount of floorspace on each level (see middle diagram of Figure 7).

Determining FARs

A FAR control is proposed to manage the overall density allowable within sites. This FAR controls needs to be mandatory to have meaningful effect. FAR controls are proposed based on the level of change anticipated in each of these precincts.

Test FARs have been established for each of the precincts based on their characteristics. A capacity of either 50% or 70% has been set. A capacity of 70% was applied to typical infill sites along the High Street (High Street North and High Street) and a capacity of 50% was applied to sites on which a more significant transformation is anticipated (Regent, Market, Civic and Bell). This capacity metric is then used to multiply the overall height, resulting in a test FAR range (e.g. 0.5x6=3:1). Figure 7 visualises two different capacities tested on the same site.

The suitability of these FARs is then tested through the precinct testing to determine the most appropriate metric.

	CAPACITY	HEIGHT	FAR
	70%	4-6 storeys	2.8:1 - 4.2:1
	50%	5-10 storeys	2.5:1 - 5:1

Table 2. FAR test range.

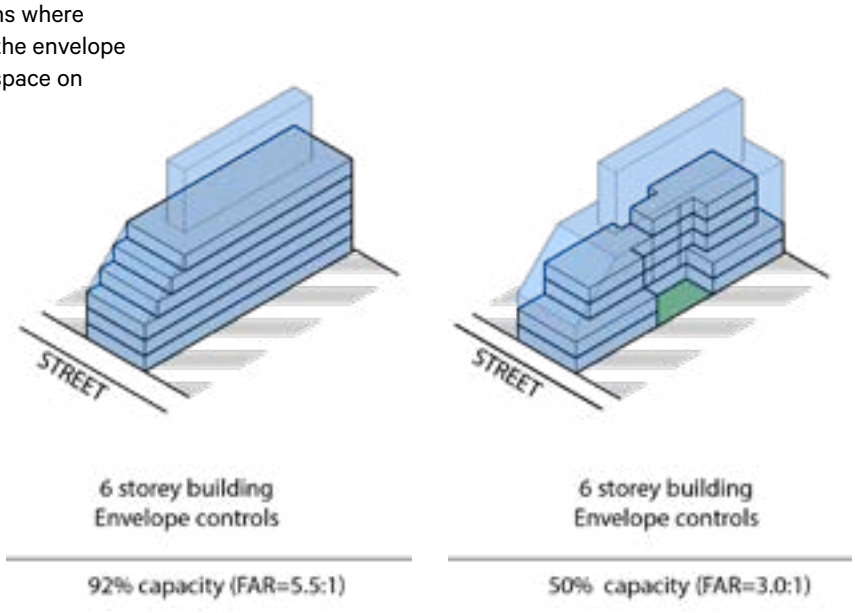


Figure 7. FAR capacity diagrams (for illustrative purposes only).

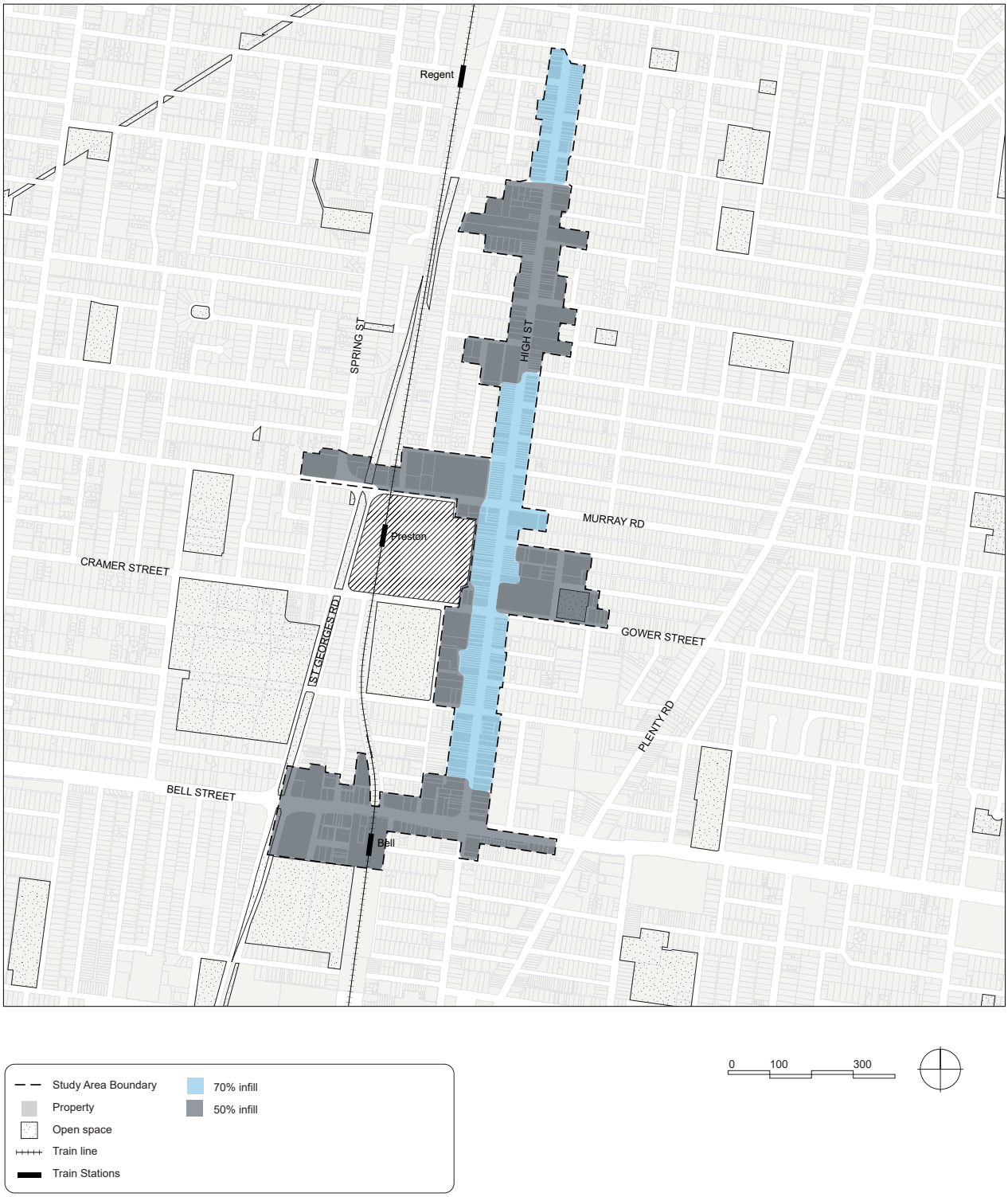


Figure 8. Test FAR controls.

2. Implement strategies

There are different opportunities afforded in each of the different precincts to integrate landscape into the design of buildings. This depends on the precinct characteristic including the degree of change anticipated, the site characteristics, the presence of arterial roads and the need to respond to houses that interface the study area. Three different levels of landscape integration are proposed for teting - low, medium and high.

The following built form controls are proposed to give effect to this design strategy:

- Ground floor landscape controls
- Site coverage controls

Table 3 demonstrates how these different built form controls are proposed to apply based on these different landscape approaches (low, medium and high).

LOW

A low level of landscape integration is proposed in precincts with small scale sites and existing buildings with high levels of site coverage (High Street and High Street North).

MEDIUM

A medium level of landscape integration is proposed in the Bell Street Precinct where there is greater opportunity for landscape integration due to the larger scale of sites and the opportunity to improve character in this low-amenity precinct.

HIGH

A high level of landscape integration is proposed in the Market Precinct, the Civic Precinct and the Regent Precinct due to the large scale of sites and the opportunity to drive different building typologies in the precincts undergoing significant transformation.

Site coverage controls

Site coverage controls manage the degree to which a building can 'cover' a site. Limiting the extent of site coverage means that there are remaining areas within sites that remain unbuilt. This allows for landscaping to be integrated into the design of buildings and for surfaces to remain permeable. This helps to manage drainage and Urban Heat Island Effect while contributing to the greening of Preston Central.

Ground floor landscape controls

There are various ways of incorporating landscape within built areas including the provision of landscaped setbacks, private open spaces and public open spaces. These greening strategies address multiple issues in urban areas including poor drainage, a decline in tree canopy, loss of biodiversity and lack of amenity. The Victorian Better Apartment Standards includes guidance and case studies on different approaches on integrating landscape into the design of buildings.

LANDSCAPE INTEGRATION	SITE COVERAGE CONTROLS	GROUND FLOOR LANDSCAPE CONTROLS
LOW	Max 90% site coverage	Min 5% landscape outcomes
MEDIUM	Max 80% site coverage	Min 10% landscape outcomes
HIGH	Max 70% site coverage	Min 20% landscape outcomes

Table 3. Test landscape integration controls, the above controls are proposed as minimums.

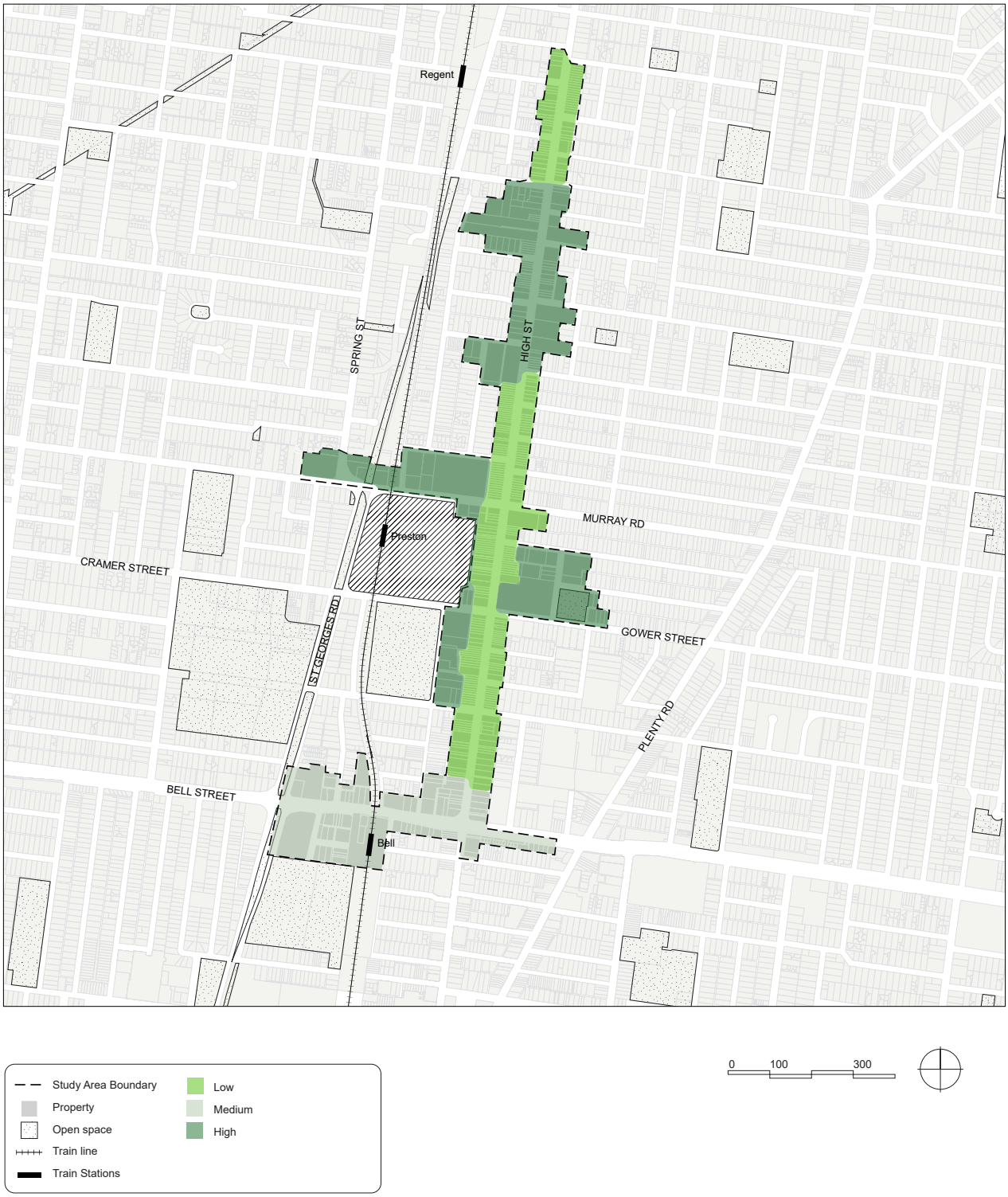


Figure 9. Test landscape integration controls.

2. Implement strategies

Sensitive interface guidance

Sensitive interface guidelines are required to sensitively transition between the study area and neighbouring residential properties. The treatment of sensitive interfaces was identified as an issue in the Draft Built Form Framework. The existing requirements for sensitive interfaces were found to result in the following unfavourable outcomes:

- The existing side interface controls do not provide sufficient separation between buildings to create good design outcomes internally and for neighbouring sites.
- The existing rear interface controls are not being adhered to and provide insufficient guidance on the preferred function and use of the ground floor setbacks provided to the rear.

SENSITIVE INTERFACE ANALYSIS

Figure 10 shows the various sensitive interface types across Preston. Table 4 proposes draft built form controls to guide design outcomes at these sensitive interfaces. The interface controls need to define appropriate side/rear profiles that achieve the following outcomes:

- Provide a transition in scale at sensitive interfaces to minimise visual bulk to neighbouring properties.
- Provide separation between new buildings and neighbouring properties through the provision of new laneways and landscaped ground floor setbacks.
- Private open space should receive a minimum of five hours of sunlight between 9 am and 3 pm on 22 September. If existing sunlight to the secluded private open space of an existing dwelling is less than the requirements of this standard, the amount of sunlight should not be further reduced. This has been adapted from Standard A14 and B21 in ResCode.

These rear/side profiles are analysed in the testing section of the report to assess whether they adequately achieve these outcomes. Diagrams of the draft rear/side profiles can be found on the following pages in Figure 11 to Figure 18.

RESIDENTIAL INTERFACE 01

Direct rear and side residential interfaces.

RESIDENTIAL INTERFACE 02

Direct rear and side residential interfaces, where the residential properties are to the south of the study area.

LANEWAY INTERFACE

Interfaces where residential properties abutting the study area are separated by a laneway.

NEW LANEWAY

New through connections that have been proposed as part of the Preston Transport Implementation Strategy or have been identified through this work as having an important service function.

KEY	INTERFACE	GROUND FLOOR SETBACK	INTERFACE WALL HEIGHT	UPPER LEVEL SETBACK
	Residential interface 01	3m	2 Storeys	5m
	Residential interface 02	5m	2 Storeys	5m
	Laneway interface	3m	2 Storeys	5m
	New laneway	3m	2 Storeys	5m

Table 4. Test built form controls to manage sensitive interfaces.

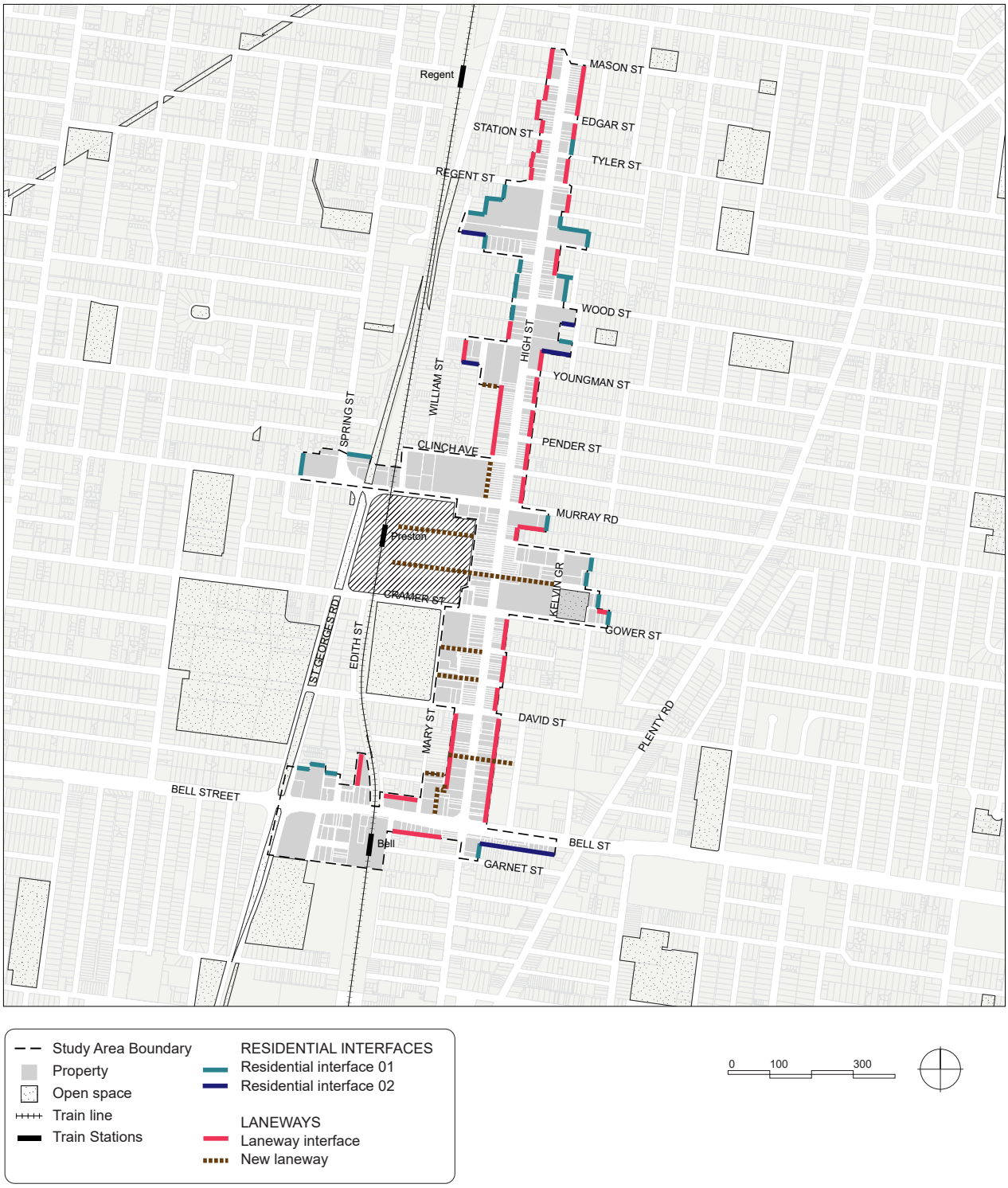


Figure 10. Interfaces types at the edge of the study area.

2. Implement strategies

KEY	INTERFACE	GROUND FLOOR SETBACK	INTERFACE WALL HEIGHT	Upper-level SETBACK
	Residential interface 01	3m	2 Storeys	5m
	Residential interface 02	5m	2 Storeys	5m
	Laneway interface	3m	2 Storeys	5m
	New laneway	3m	2 Storeys	5m

Table 5. Test built form controls to manage sensitive interfaces.

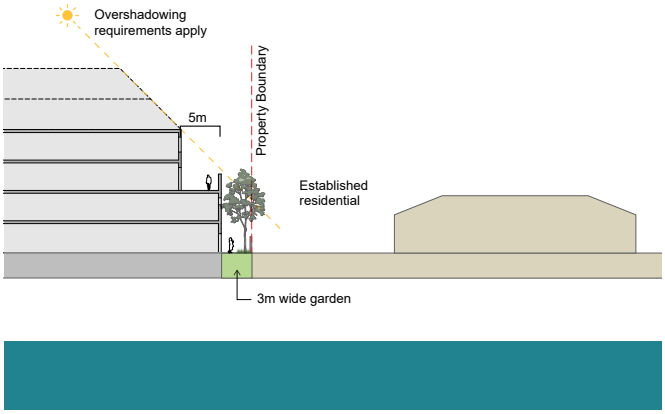


Figure 11. Acceptable outcome for a residential interface 01, direct residential interface with a 3m setback providing a garden. Diagrams demonstrate an indicative built form envelope only.

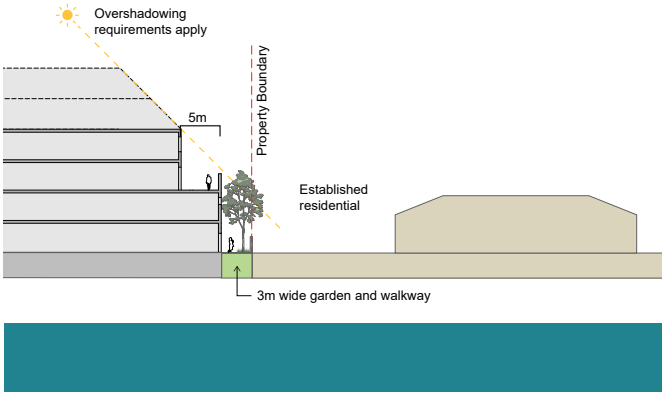


Figure 12. Acceptable outcome for a residential interface 01, direct residential interface with a 3m setback providing a 3m wide garden or walkway. Diagrams demonstrate an indicative built form envelope only.

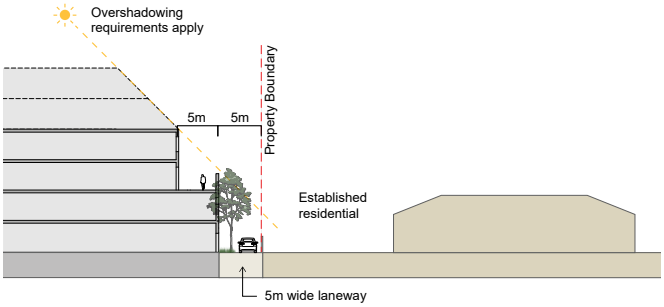


Figure 13. Acceptable outcome for a residential interface 02, direct residential interface with a 5m setback providing a rear laneway. Diagrams demonstrate an indicative built form envelope only.

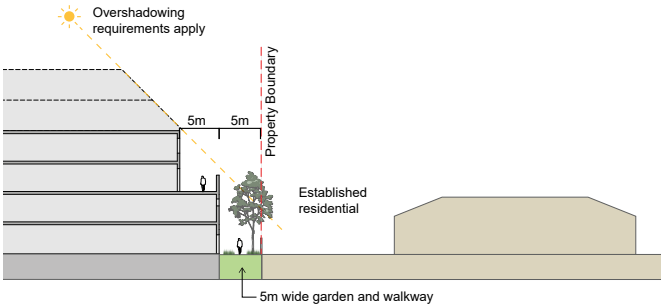


Figure 14. Acceptable outcome for a residential interface 02, direct residential interface with a 5m setback providing a rear walkway and garden.Diagrams demonstrate an indicative built form envelope only.

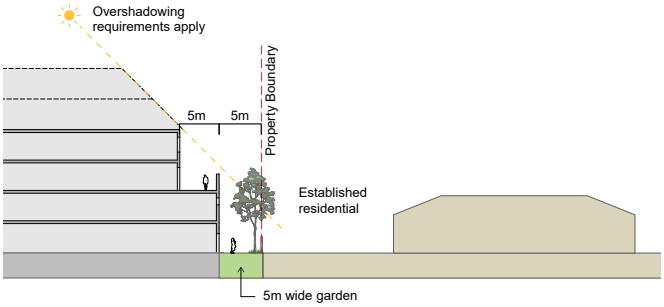


Figure 15. Acceptable outcome for a residential interface 02, direct residential interface with a 5m setback providing a rear garden. Diagrams demonstrate an indicative built form envelope only.

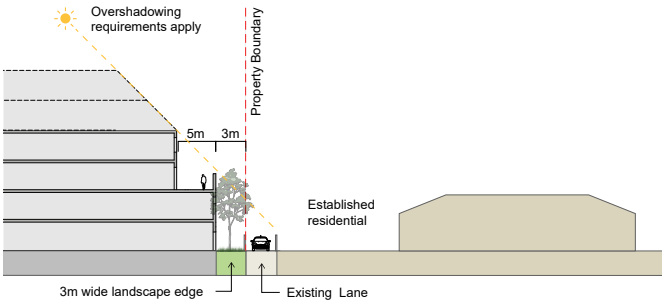


Figure 16. Acceptable outcome for laneway interface, 3m setback providing a landscape edge. Diagrams demonstrate an indicative built form envelope only.

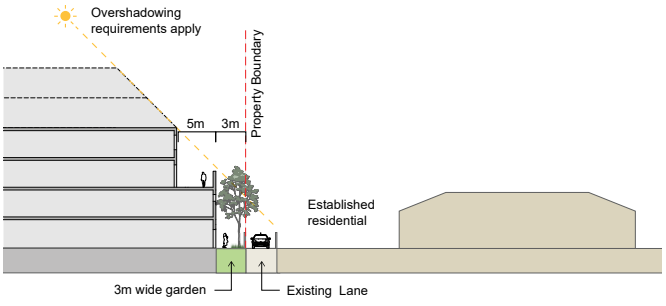


Figure 17. Acceptable outcome for a laneway interface, 3m setback providing a garden. Diagrams demonstrate an indicative built form envelope only.

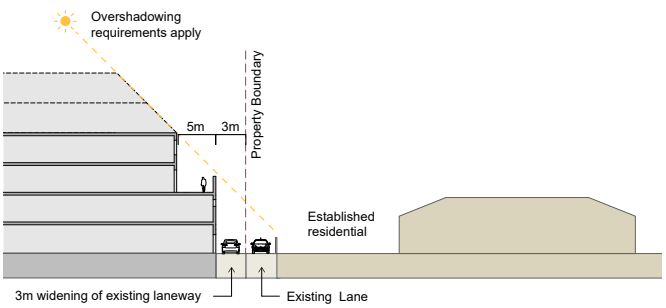


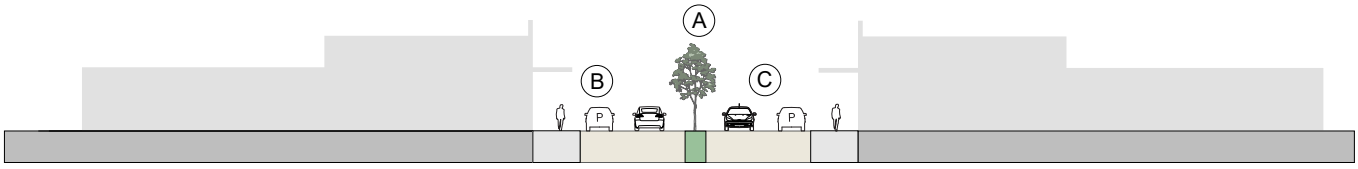
Figure 18. Acceptable outcome for a laneway interface, 3m setback used to widen existing laneway. Diagrams demonstrate an indicative built form envelope only.

Street design

There are opportunities to improve the design of High Street to make the street safer and more engaging. This street extends along the study area and has various conditions. There is an opportunity to improve the design of the street in the High Street Precinct, the Regent Precinct and in the High Street North Precinct.

Figure 19 demonstrates a proposed redesign of the street in the High Street Precinct which defines cycle lanes and offers increased opportunities for increased greening.

Figure 20 demonstrate redesign of the street in the Regent Precinct and the High Street North Precinct which propose protected cycle lanes and opportunities for increased greening.



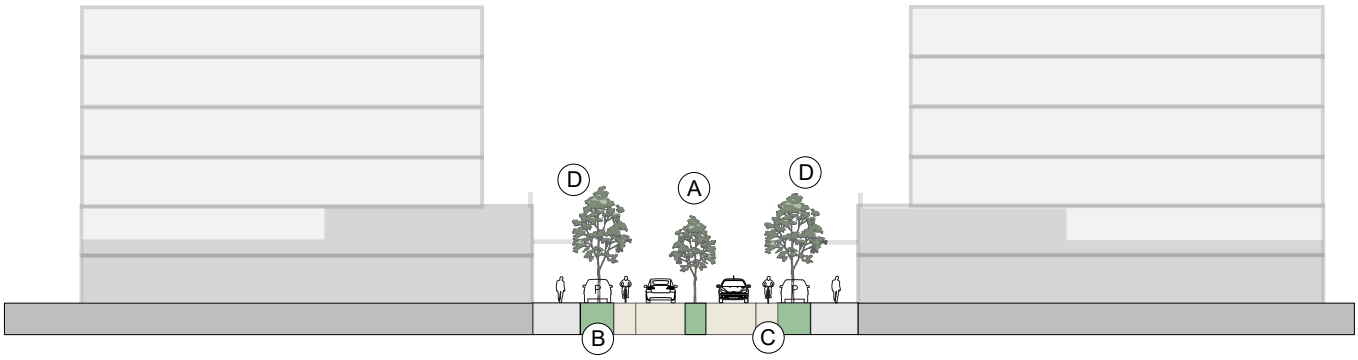
Existing Conditions

Key Issues

A Few street trees.

B Parallel parking takes up a large percentage of street space.

C Cyclists have no safe space to ride.



Opportunities

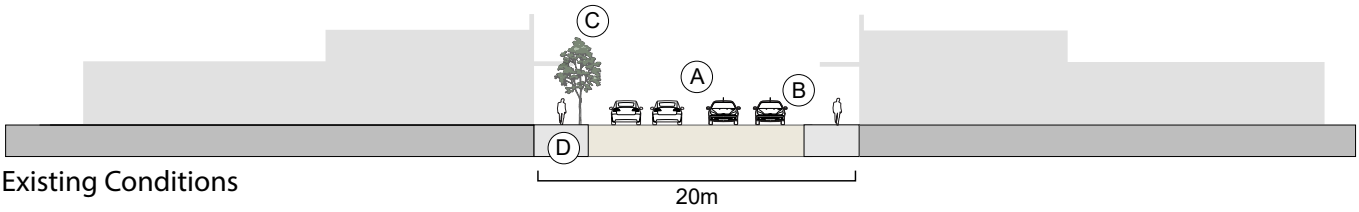
A Retain central median.

B Kerb outstands and greening (particularly at intersections).

C Defined cycle lanes.

D Large canopy street trees.

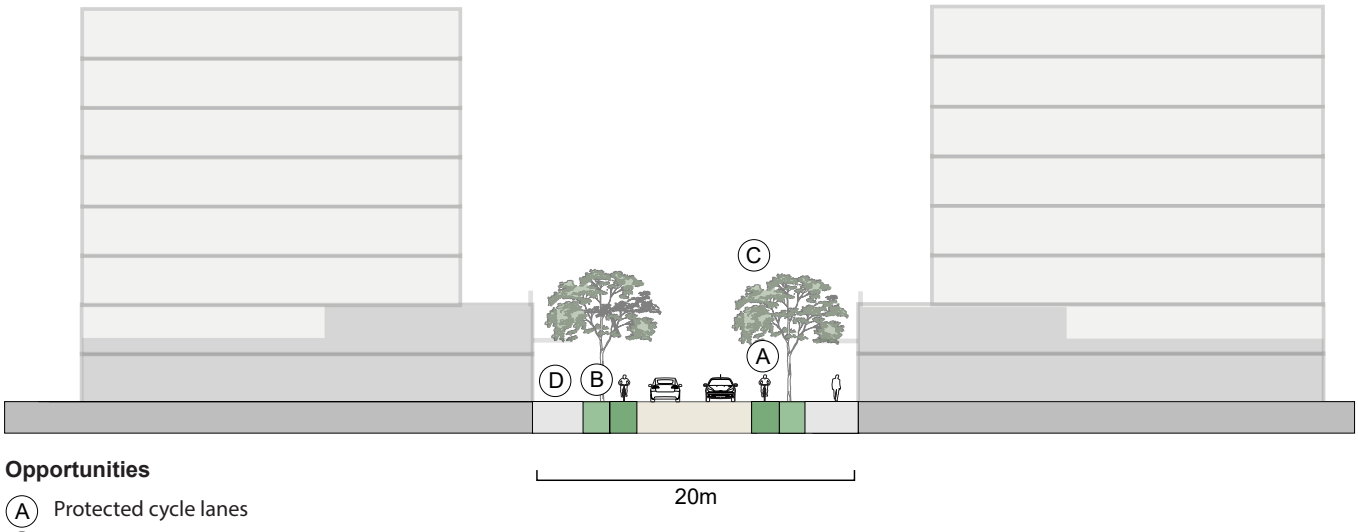
Figure 19. Key opportunities to redesign High Street in the High Street Precinct. A two-storey street wall height is proposed with upper-level setbacks to maintain the low-scale. fine-grain character in this precinct.



Existing Conditions

Key Issues

(A) Wide roadway
(B) No safe cycle lanes
(C) Inconsistent tree canopy
(D) Inconsistent street furniture / pavement finishes



Opportunities

(A) Protected cycle lanes
(B) Kerb outstands and additional greening.
(C) Consistent tree canopy
(D) Consistent street furniture / materials

Figure 20. Key opportunities to redesign High Street in the Regent and High Street North Precincts. A higher street wall height in the Regent Precinct as there is no heritage in this precinct. The street wall height is tested in the precinct testing section.

In order to protect solar access in Preston Central, key streets and spaces have been identified in Figure 21 where solar restrictions should apply. The key streets identified are High Street, Cramer Street and Gower Street. The key public open spaces are Preston Oval and Ray Brahams Gardens.

The public realm solar analysis involved testing consistent heights from 4 storeys - 10 storeys across the whole study area, within the times of 10am and 3pm. For each of the precincts, this solar analysis was used to inform the determination of preferred heights.

This outcomes from this testing is included in the precinct testing section.

Solar access controls

The following built form controls are proposed to protect key streets and public open spaces from overshadowing. This is consistent with best practice approaches to protecting solar access which applies a higher level of protection to public open spaces than it does to streets.

KEY STREETS

- No overshadowing of the adjacent footpath on High Street between 11am and 2pm at the spring equinox.
- No overshadowing of the southern footpath of Gower Street between 11am and 2pm at the spring equinox.

PUBLIC OPEN SPACE

- No overshadowing of Preston Oval between 10am and 3pm at the winter solstice.
- No overshadowing of Ray Bramham Gardens between 10am and 3pm at the winter solstice.

Figure 21. Public realm solar protection.

3. Establish assumptions

Assumptions were established to ensure that a clear and transparent approach was taken to the built form testing.

These assumptions formed the base conditions for the built form modelling including 3D modelling assumptions and building separation requirements. The building separation requirements were adopted from the Darebin Good Design Guide.

3D modelling assumptions

GENERAL BUILT FORM ASSUMPTIONS:

- The testing was completed on a flat ground plane.
- Floor to floor heights were 4m for the first 2 floors and 3.2m for all above floors.
- Sites were consolidated using the ownership data provided by Darebin City Council.

SOLAR TESTING - PUBLIC REALM:

- The buildings are built to the boundary, no setbacks were applied at this stage of testing.
- The edge of the footpath was assumed to be offset 3m from the property boundary.

SOLAR TESTING - PRIVATE OPEN SPACE:

- Any property that is shown to be overshadowed for more than 2 hours between 9 am and 3 pm at the spring equinox was deemed to have inadequate solar access (adapted from Standard A14 and B21 in ResCode).
- A property was considered to be overshadowed as soon as the shadow traversed the property boundary.

SITE SPECIFIC TESTING:

- The minimum floor plate width modelled was 5m.
- The maximum floor plate depth modelled was 30m.

Building separation

Adequate building separation distances are required to ensure that good levels of daylight and sunlight enter into buildings and into private or communal open spaces. Building separation also ensures that an outlook is provided from within buildings to connect occupants to the outside world.

Building separation is also important to provide development equity, ensuring that the way one site is developed does not diminish the potential to deliver a well-designed building on the adjacent site. Building separation is achieved by setting buildings back from side and rear boundaries and by separating buildings within sites.

The building separation requirements applied to the testing have been adopted from Darebin's Good Design Guide.

Figure 22 demonstrates building separation requirements for rooms with primary outlook. These include living and dining rooms.

Figure 23 demonstrates building separation requirements for rooms with secondary outlook. These include bedrooms, bathrooms, studies and corridors.

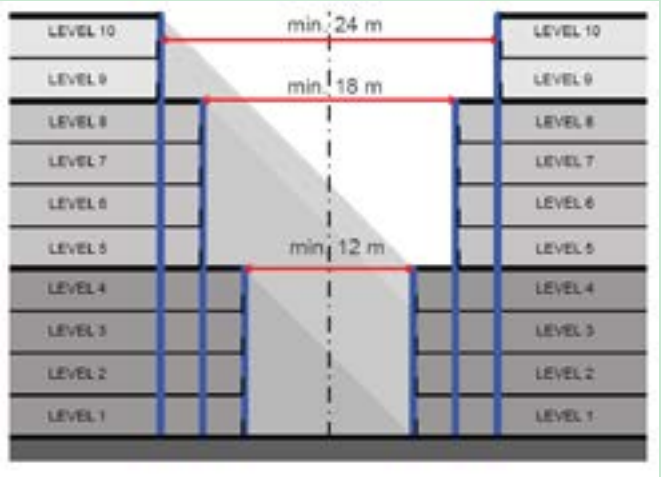


Figure 22. Building separation requirements for primary outlook

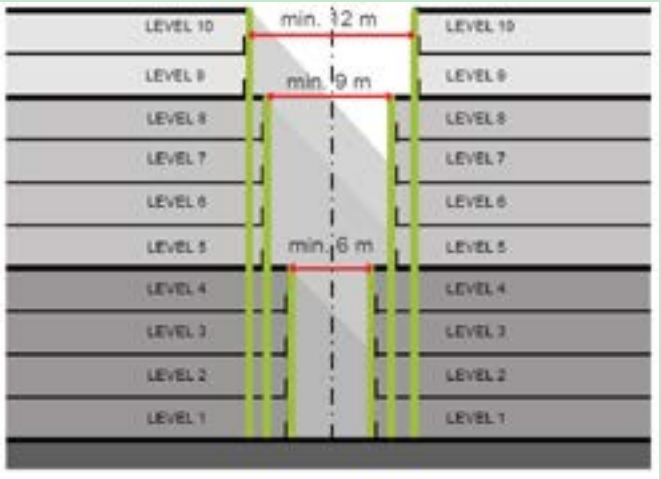


Figure 23. Building separation requirements for secondary outlook

Sensitive interfaces

Solar testing: private open space

The solar analysis of private open space identifies properties that do not meet the overshadowing requirement when the draft height proposition is applied and the rear/side profiles are applied at the interfaces.

PRIVATE OPEN SPACE

The following standard has been tested:

> Private open space should receive a minimum of five hours of sunlight between 9 am and 3 pm at the spring equinox. If existing sunlight to the secluded private open space of an existing dwelling is less than the requirements of this standard, the amount of sunlight should not be further reduced (adapted from Standard A14 and B21 in ResCode).

The overshadowing diagrams indicate properties that were overshadowed at 12pm. All properties that were overshadowed at 12pm were overshadowed for more than 2 hours.

KEY FINDINGS

- All residential properties that did not have solar access for a minimum of 5 hours between 9am and 3pm were located to the south of the study area.
- This occurred in the High Street North Precinct, the Regent Precinct and the Bell Street Precinct.
- This overshadowing was only present in a few locations in the High Street North Precinct. Therefore, it could be managed through the introduction of an adapted Private Open Space Standard (Standard A14 and B21 in ResCode).
- Overshadowing was more extensive in the Regent Precinct and the Bell Street Precinct.
- Heights should be reduced in the Bell Street Precinct to the south-east to ensure that the overshadowing requirement can be met on these shallow sites.
- On the larger sites in the Regent Precinct, the FAR in combination with the introduction of the adapted Private Open Space Standard should be used to manage overshadowing impacts.

HIGH STREET NORTH PRECINCT

The private open space solar analysis indicated that properties to the south of the study area would be overshadowed after the application of the profile Residential Interface 02.

Figure 24. Overshadowing of residential properties occurring at 6 Storeys at 12pm, at the spring equinox.

REGENT PRECINCT

The private open space solar analysis indicated that properties to the south of the study area would be overshadowed after the application of the profile Residential Interface 02.

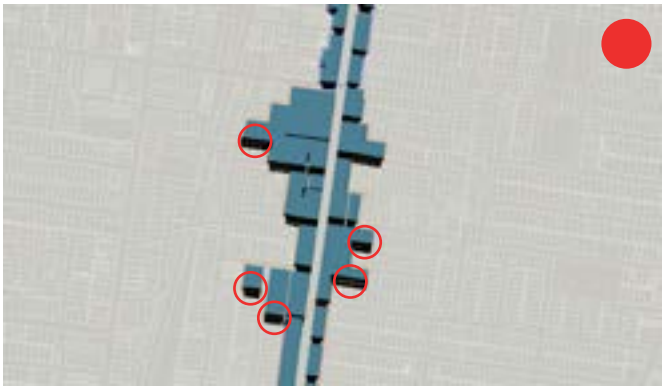


Figure 25. Overshadowing of residential properties occurring at 8 Storeys at 12pm, at the spring equinox.

No overshadowing

Overshadowing

HIGH STREET PRECINCT

The built form in the High Street precinct did not overshadow any neighbouring private open space for more than 2 hours between 9am and 3pm.

Figure 26. No overshadowing occurring at 6 Storeys at 12pm, at the spring equinox.

Figure 28. No overshadowing occurring at 6 Storeys at 12pm, at the spring equinox

MARKET PRECINCT

The built form in the Market precinct did not overshadow any neighbouring private open space for more than 2 hours between 9am and 3pm.

Figure 27. No overshadowing of residential properties occurring at 10 Storeys at 12pm, at the spring equinox. Shadows cast on to the front of residential properties from across the road of the modelled built form are not considered overshadowed.

CIVIC PRECINCT

The built form in the High Street Central precinct did not overshadow any neighbouring private open space for more than 2 hours.

Figure 29. No overshadowing occurring at 7 Storeys at 12pm, at the spring equinox

BELL STREET PRECINCT

The private open space solar analysis indicated that properties to the south of the study area would be overshadowed after the application of the profile Residential Interface 02.

Figure 30. Overshadowing of residential properties occurring at 10 Storeys at 12pm, at the spring equinox. Therefore a reduction in height is proposed, this will be resolved through site specific testing.

Precinct testing

Precinct testing was undertaken in order to test the draft built form controls. Two sites were tested for each of the six precincts (see Figure 31). Two types of testing were undertaken - a public realm solar analysis and site-specific testing.

PUBLIC REALM SOLAR ANALYSIS

The public realm solar analysis informed the draft heights to ensure that key streets and public spaces would not be overshadowed by new buildings.

SITE-SPECIFIC TESTING

Table 6 summarises the built form metrics that were tested through the site-specific testing. These metrics seek to implement the design strategies and to address the issues identified in the Draft Built Form Framework.

The objective of the site-specific testing was:

- To determine whether the identified built form controls delivered on the design strategies.
- To test whether the built form controls were suitable for the context.
- To establish whether the built form controls were effective when they were collectively applied to sites.
- To ensure that the built form controls are scalable and suitable to sites with different typologies.

	High Street North	Regent	High Street	Market	Civic	Bell Street
Overall height	6 storeys	8 storeys	6 storeys	10 storeys	5 - 7 storeys	10 storeys
Ground floor front setback	0m	0m	0m	0m	0m	5m on Bell Street
Street wall height	2 storeys	7 storeys	2 storeys	4 storeys	3 - 4 storeys	8 storeys
Upper-level front setback	3m	N/A	3m	3 - 5m	3m	N/A
FAR	4.2:1	2:1 - 4:1	2.8:1 - 4.2:1	3:1 - 5:1	2.5:1 - 3.5:1	3:1 - 5:1
Site coverage maximum	90%	70%	90%	80%	70%	80%

Table 6. Table of initial metrics that formed the basis of testing.

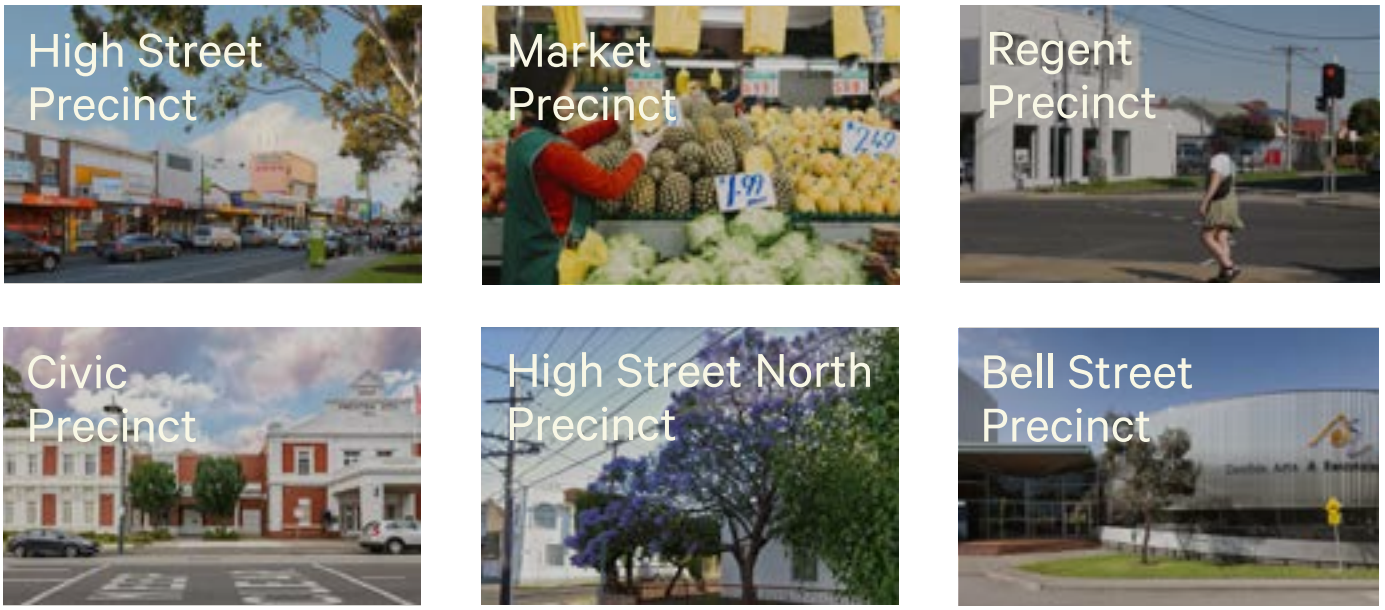


Figure 31. The six precincts.

Precinct testing

PUBLIC REALM SOLAR TESTING METHOD

- Consistent heights were modelled across each precinct from 4 storeys - 10 storeys.
- Shadow diagrams were produced for each height at every hour from 10am - 3pm.
- The results were recorded in a matrix which identified at which hours and heights the footpaths were overshadowed.
- The results of this testing indicated whether the draft height proposition was in alignment with the objective to maintain solar access. This identified any adjustments that needed to be made to the proposed height limits.

SITE SPECIFIC TESTING METHOD

- Two sites were selected within each precinct. The selected sites cover a variety of interface types, site orientations, and site sizes, see Figure 32.
- Built form outcomes were modelled within the envelope defined by the overall heights, street wall heights and setback parameters.
- Each built form outcome was tested to determine if the solar requirements were being met at a site level and that the outcome is visually comfortable from the perspective of the street.
- The FAR and site coverage were calculated for each outcome and compared against the initial metrics.
- All results were recorded in a table of metrics for each site. The green cells indicate that there is alignment between the built form modelling and the proposed metrics. The yellow cells indicate where there is a need to consider the revision of the built form metrics.

Selected testing sites

Study Area Boundary
Property
Open space
Train line
Train Stations
Selected sites

PRECINCTS
High Street North
Auto
High Street Central
Market
Civic
Bell

0 100 300

Figure 32. Selected test sites.

Precinct testing

High Street North

The Draft Built Form Framework identified that there were no existing height controls for the High Street North Precinct.

Testing is required to determine appropriate heights for this low-scale mixed use precinct, confirm proposed interface controls are effective and ensure density requirements can be met.

PARAMETERS	INITIAL METRICS
Overall Height	6 storeys
Ground floor rear setback	3m
Street wall height	2 storeys
Upper-level rear setback	5m (at 2 storeys)
Upper-level front setback	3m (at 2 storeys) OR 5m (heritage)
FAR	4.2:1
Landscape requirements	Maximum 90% site coverage 5% dedicated to landscaping

Table 7. Table of initial metricsto be tested

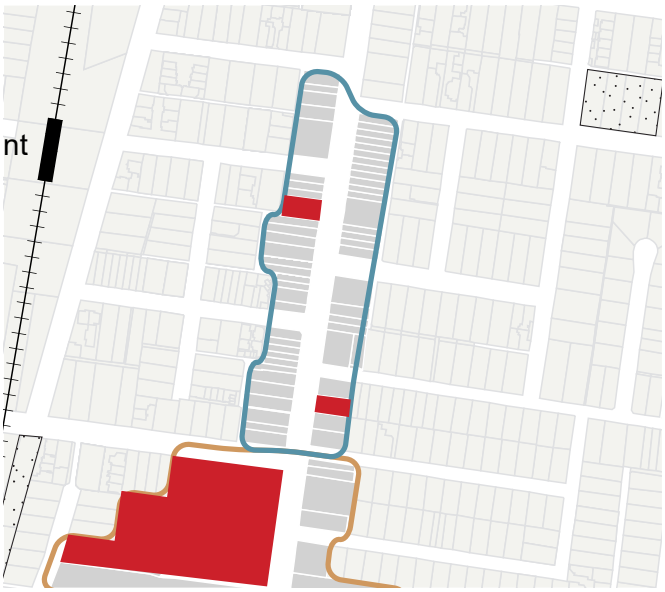


Figure 33. High Street North precinct map with selected testing sites

Solar Testing

To protect solar access to the public realm the High Street North precinct, High Street was identified as a key street to apply solar controls.

- No overshadowing
- Time within which no overshadowing can occur
- Overshadowing

	10AM	11AM	12PM	1PM	2PM	3PM
4						
5						
6						

Table 8. High Street North precinct overshadowing of High Street west footpath at the spring equinox.

	10AM	11AM	12PM	1PM	2PM	3PM
4						
5						
6						

Table 9. High Street North precinct overshadowing of High Street east footpath at the spring equinox.

Figure 35. 5 Storeys at 10am

Figure 34. 5 Storeys at 3pm

KEY FINDINGS

- A 4 - 6 storey height limit was tested for the High Street North Precinct. The testing indicated that solar access to the High Street footpath was able to be maintained at these heights.

Precinct testing

Site specific testing

SITE ONE

638 High Street, Preston

Site size: 15m x 30m

Site one for the High Street North precinct is located on the eastern side of the street, towards the south of the precinct area. The site runs east-west, fronting onto High Street and backing onto the side interface of neighbouring residential properties. Sensitive interface requirements apply at the rear interface.

KEY FINDINGS

- The overall height, street wall height and setbacks are all achievable.
- The FAR results are below the initial metric.
- The site coverage result is below the initial metric.

PARAMETERS	INITIAL METRICS	TESTING OUTCOMES
Overall Height	6 storeys	
Ground floor rear setback	3m	
Street wall height	2 storeys	
Upper-level rear setback	5m (at 2 storeys)	
Upper-level front setback	3m (at 2 storeys)	
FAR	4.2:1	3.9:1
Landscape requirements	Maximum 90% site coverage 5% dedicated to landscaping	83.3% site coverage

Table 10. Table of initial metrics and the testing outcomes for each metric.

Figure 36. Site one, plan view

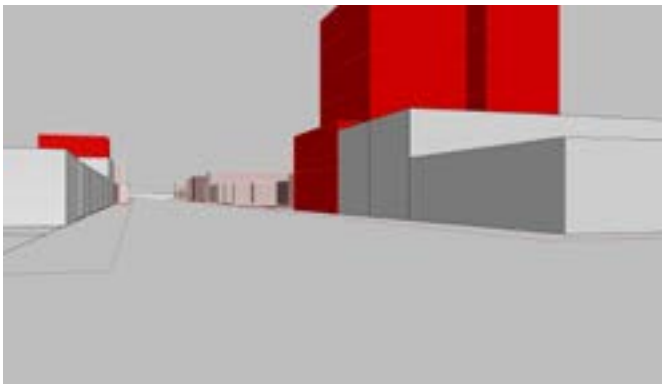


Figure 37. Site one, street view

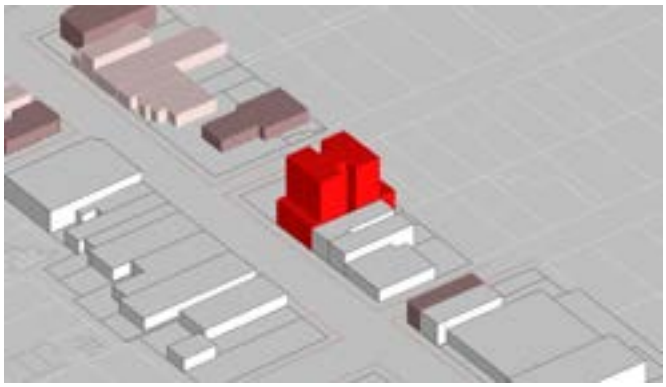


Figure 38. Site one, south-west isometric view

Figure 39. Site one, south-east isometric view

SITE TWO

785 High Street, Reservoir 33.8m x 18m

Site size: 33.8m x 18m

Site two for the High Street North precinct is located on the western side of the street, towards the south of the precinct area. The site runs east-west, fronting onto High Street and backing onto a rear laneway bordering a rear residential interface. Sensitive interface requirements apply at this rear interface. The existing building on the site is heritage listed, so the 5m setback required for a heritage response is applied. The footprint of the existing heritage building has been included in the site coverage calculations.

KEY FINDINGS

- The overall height, street wall and setbacks are all achievable on the site.
- The FAR and result is below the initial metric.
- The site coverage result is within 5% of the initial metric.

PARAMETERS	INITIAL METRICS	TESTING OUTCOMES
Overall Height	6 storeys	
Ground floor rear setback	3m	
Street wall height	2 storeys	N/A for heritage
Upper-level rear setback	5m (at 2 storeys)	
Upper-level front setback	5m (above heritage)	
FAR	4.2:1	3.8:1
Landscape requirements	Maximum 90% site coverage 5% dedicated to landscaping	86% site coverage

Table 11. Table of initial metrics and the testing outcomes for each metric.

Figure 40. Site two, plan view

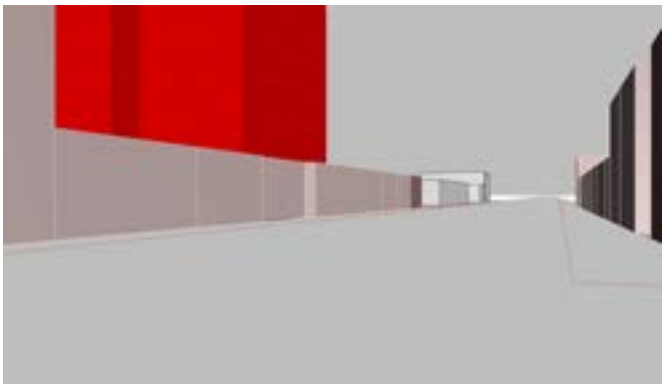


Figure 41. Site two, street view

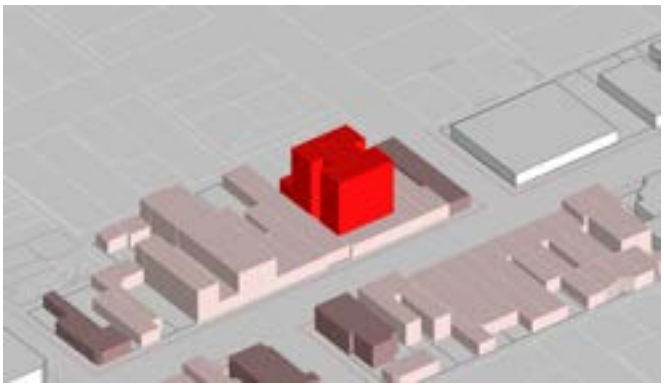


Figure 42. Site two, south-east isometric view

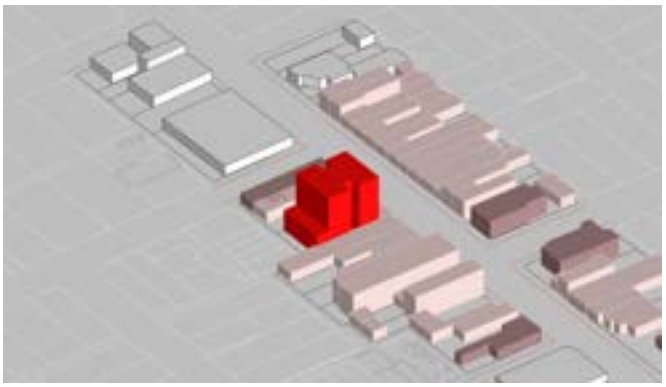


Figure 43. Site two, south-east isometric view

Precinct testing

High Street Central

The draft framework report identified that a minor review of the existing heights is required. The existing height control of 4 storeys is an appropriate scale for the fine-grain retail core, however, there are opportunities to test whether an increase to 6 storeys is supportable.

Testing was required in order to determine whether the height limits can be increased across the precinct and whether the interface requirements are effective.

PARAMETERS	INITIAL METRICS
Overall Height	6 storeys
Ground floor rear setback	N/A
Street wall height	2 storeys
Upper-level rear setback	N/A
Upper-level front setback	3m
FAR	4.2:1
Landscape requirements	Maximum 90% site coverage 5% dedicated to landscaping

Table 12. Table of initial test metrics.

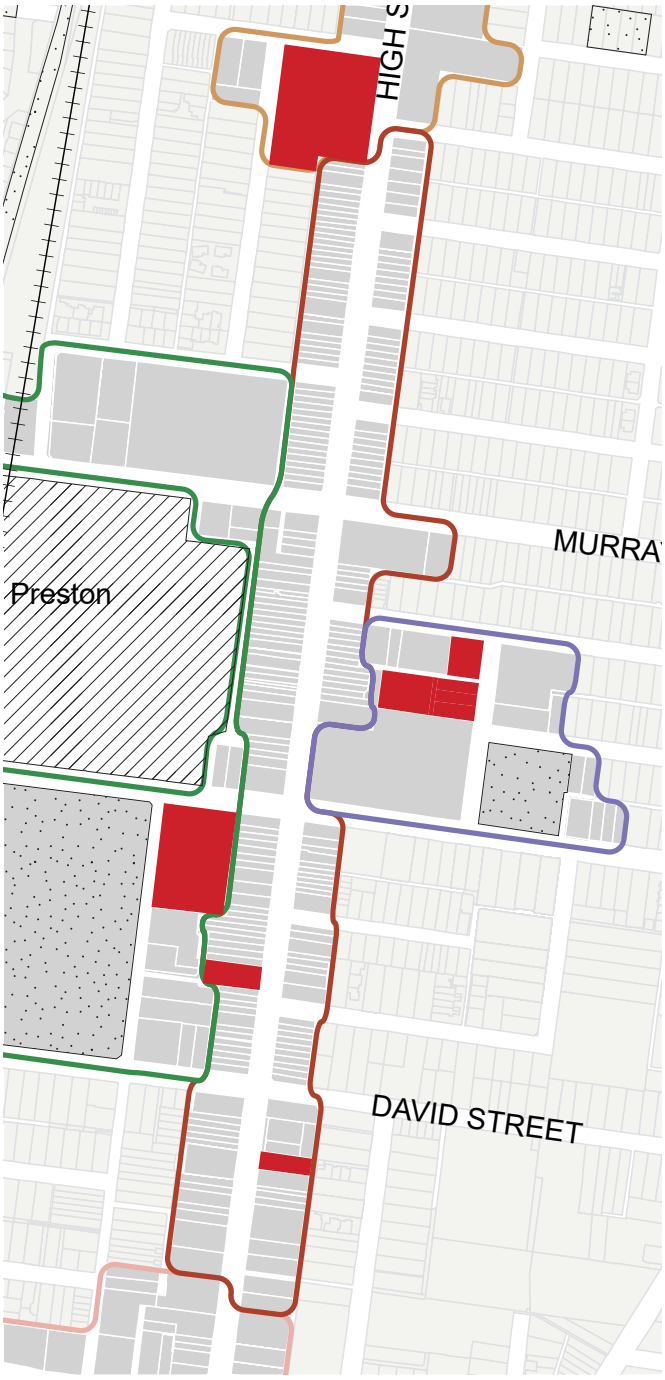


Figure 44. High Street Central precinct map with selected testing sites.

Solar testing: public realm

To protect solar access to the public realm in the High Street Central precinct, High Street was identified as a key street to apply solar controls.

No overshadowing

Time within which no overshadowing can occur

Overshadowing

	10AM	11AM	12PM	1PM	2PM	3PM
4						
5						
6						

Table 13. High Street Central precinct overshadowing of High Street west footpath at the spring equinox.

	10AM	11AM	12PM	1PM	2PM	3PM
4						
5						
6						

Table 14. High Street Central precinct overshadowing of High Street east footpath at the spring equinox.

KEY FINDINGS

- A 4 - 6 storey height limit was tested for the High Street Central Precinct. The testing indicated that solar access to the High Street footpath was able to be maintained at these heights.

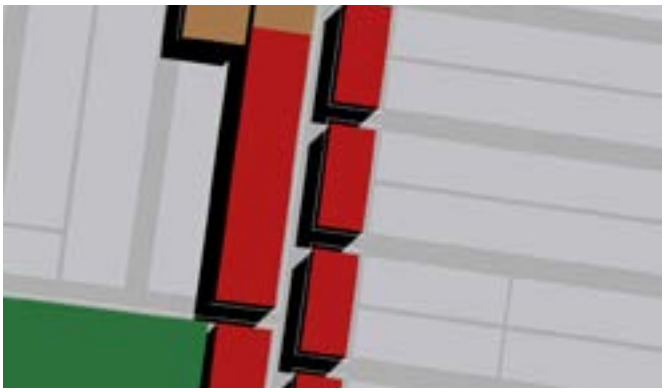


Figure 45. 5 storeys at 10am

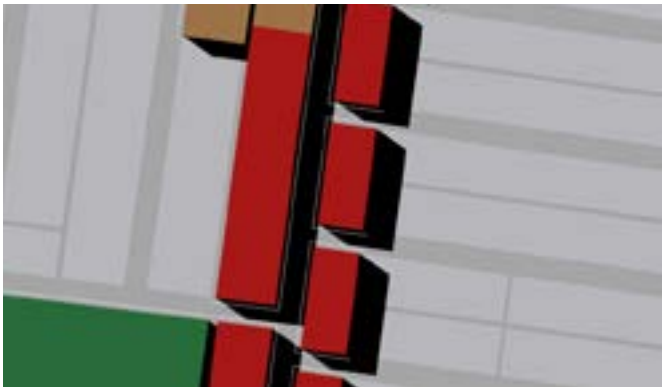


Figure 46. 5 Storeys at 3pm

Precinct testing

Site specific testing

SITE ONE

345a High Street, Preston

Site size: 50m x 21m

Site one for the High Street Central precinct is located on the western side of High Street towards the south of the precinct. The site fronts onto High Street and backs onto an existing laneway in the Market precinct. The laneway interface rear profile has been applied.

KEY FINDINGS

- The overall height, setbacks and street wall height are achievable and appropriate.
- The FAR result is higher than the initial metric.
- The site coverage result is lower the initial metric.

PARAMETERS	INITIAL METRICS	TESTING OUTCOMES
Overall Height	6 storeys	
Ground floor rear setback	N/A	
Street wall height	2 storeys	
Upper-level rear setback	N/A	
Upper-level front setback	3m	
FAR	4.2:1	4.4:1
Landscape requirements	Maximum 90% site coverage 5% dedicated to landscaping	77% site coverage

Table 15. Table of initial metrics and the testing outcomes for each metric.

Figure 47. Site one, plan view

Figure 48. Site one, street view

Figure 49. Site one, south-east isometric view

Figure 50. Site one, south-west isometric view

SITE TWO

250 High Street, Preston

Site size: 15m x 46m

Site two is located on the eastern side of High Street towards the south of the precinct. The site fronts onto High Street and backs onto a sensitive residential interface, therefore interface requirements apply to the rear of the site.

KEY FINDINGS

- The overall height, setbacks and street wall height are all achievable and appropriate on the site.
- The FAR result is lower than the initial metric.
- The site coverage is lower than the initial metric.

PARAMETERS	INITIAL METRICS	TESTING OUTCOMES
Overall Height	6 storeys	
Ground floor rear setback	3m	
Street wall height	2 storeys	
Upper-level rear setback	5m	
Upper-level front setback	3m	
FAR	4.2:1	3.1:1
Landscape requirements	Maximum 90% site coverage 5% dedicated to landscaping	73% site coverage

Table 16. Table of initial metrics and the testing outcomes for each metric.

Figure 51. Site two, plan view

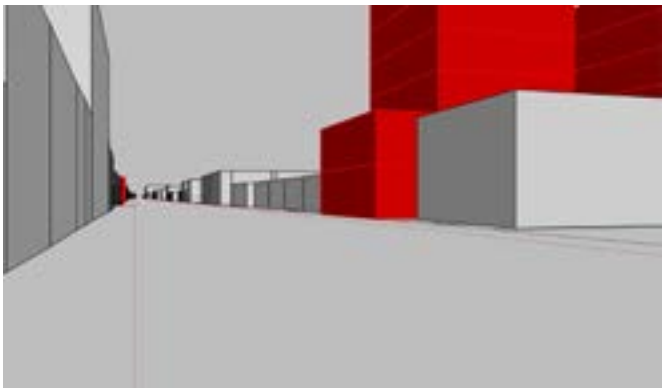


Figure 52. Site two, street view

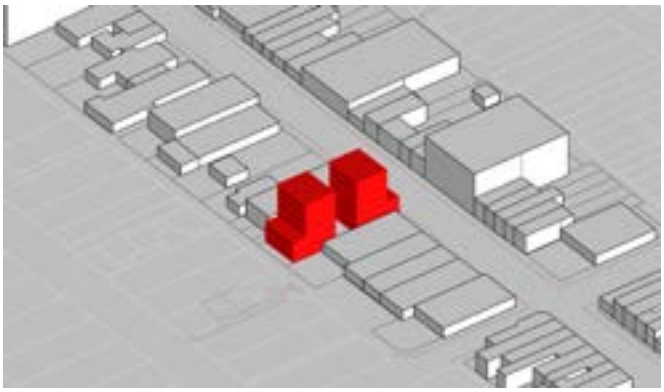


Figure 53. Site two, south-west isometric view

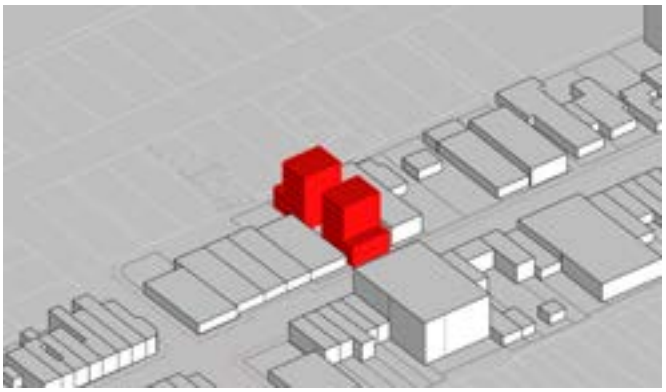


Figure 54. Site two, south east isometric view

Precinct testing

Regent Precinct

The draft framework report identified that there are opportunities to increase the existing height controls in the Regent Precinct.

Testing was required in order to determine the appropriate height limit that maintains solar access to the public realm along High Street and ensure new buildings are responsive to context.

PARAMETERS	INITIAL METRICS
Overall Height	Up to 8 storeys
Ground floor rear setback	5m
Street wall height	1 - 7 storeys
Upper-level rear setback	5m (at 2 storeys)
Upper-level front setback	N/A
FAR East	4:1
FAR West	2:1
Landscape requirements	Maximum 70% site coverage 20% dedicated to landscaping

Table 17. Table of initial test metrics.

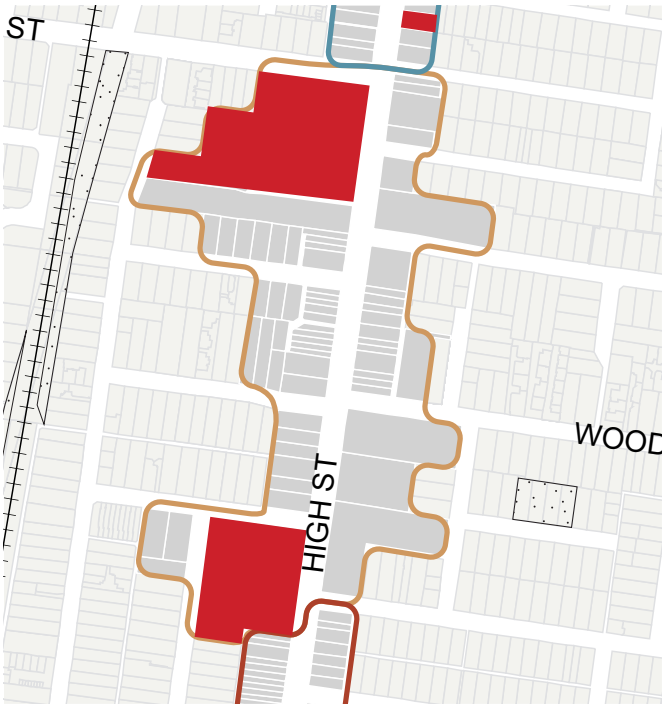


Figure 55. Regent precinct map with selected testing sites

Solar testing: public realm

To protect solar access to the public realm in the Regent precinct, High Street was identified as a key street to apply solar controls.

- No overshadowing
- Time within which no overshadowing can occur
- Overshadowing

	10AM	11AM	12PM	1PM	2PM	3PM
4						
5						
6						
7						
8						
9						
10						

Table 18. Regent precinct overshadowing of High Street west footpath at the spring equinox.

	10AM	11AM	12PM	1PM	2PM	3PM
4						
5						
6						
7						
8						
9						
10						

Table 19. Regent precinct overshadowing of High Street east footpath at the spring equinox.

KEY FINDINGS

- A 4 - 8 storey height limit is appropriate for the Regent Precinct as it maintains solar access to the High Street footpath and is responsive to existing context.

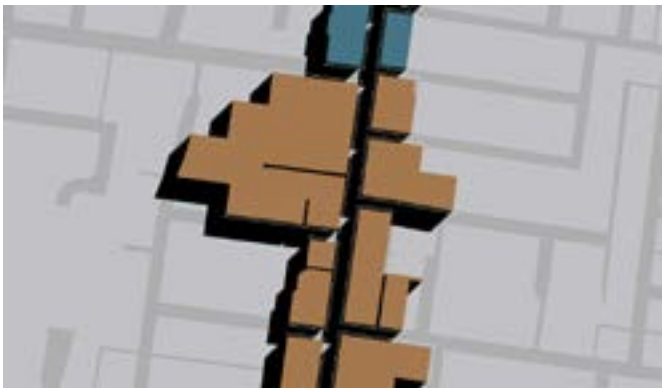


Figure 56. 9 Storeys at 10am

Figure 57. 8 Storeys at 2pm

Precinct testing

SITE ONE

678 - 719 High Street, Preston. Site size: 180m x 98m.

Site one is located on the western side of High Street. This site is currently multiple sites with single ownership, the sites have been consolidated for the testing as this is likely in the future.

This site is one of the largest sites in the Regent Precinct. This site has a large frontage onto High Street as well as Regent Street and backs onto sensitive residential properties at the rear. On the southern side of the property there is an existing lane.

The built form modelled follows building separation requirements and interface controls. Spaces for public and private open space have been modelled.

KEY FINDINGS

- The 7 storey street wall on High Street is overwhelming.
- The FAR result is slightly over the initial metric for the both the east and west areas of the site.
- The site coverage is below the initial metric.

PARAMETERS	INITIAL METRICS	TESTING OUTCOMES
Overall Height	Up to 8 storeys	
Ground floor rear setback	5m	
Street wall height	1 - 7 storeys	Visually overwhelming
Upper-level rear setback	5m (at 2 storeys)	
Upper-level front setback	N/A	
FAR East	4:1	4.1:1
FAR West	2:1	2.8:1
Landscape requirements	Maximum 70% site coverage 20% dedicated to landscaping	58.7% site coverage

Table 20. Table of initial metrics and the testing outcomes for each metric.

Figure 58. Site one, plan view

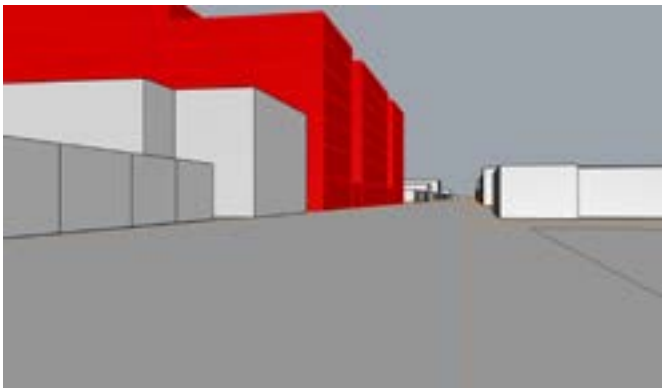


Figure 59. Site one, street view

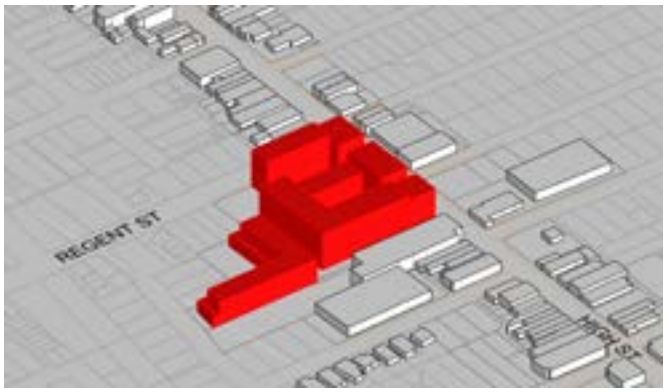


Figure 60. Site one, south-east isometric view

Figure 61. Site one, south-west isometric view

SITE TWO

D'silva site 573-603 High Street

Site size: 86m x 96m

Site two is located on the western side of High Street and is a one of the larger sites in the Regent precinct. Similarly, to site one this site is currently two sites that have been consolidated for the testing as they are under the same ownership.

The site has multiple frontages to High Street, Olver Street and West Street. To the south the site interfaces with a sensitive residential area and the High Street Central precinct.

KEY FINDINGS

- The overall height, setbacks and street wall heights are achievable and appropriate on the site.
- The FAR result is below the initial metric.
- The site coverage result is within 5% of the initial metric.

PARAMETERS	INITIAL METRICS	TESTING OUTCOMES
Overall Height	Up to 8 storeys	
Ground floor side setback	5m	
Street wall height	1 - 7 storeys	2 storeys
Upper-level rear setback	5m (at 2 storeys)	
Upper-level front setback	3m	
FAR	4:1	2.9:1
Landscape requirements	Maximum 70% site coverage 20% dedicated to landscaping	71.2% site coverage

Table 21. Table of initial metrics and the testing outcomes for each metric.

Figure 62. Site two, plan view

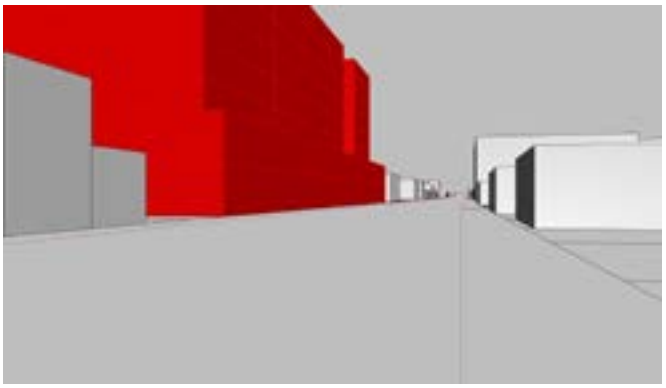


Figure 63. Site two, street view

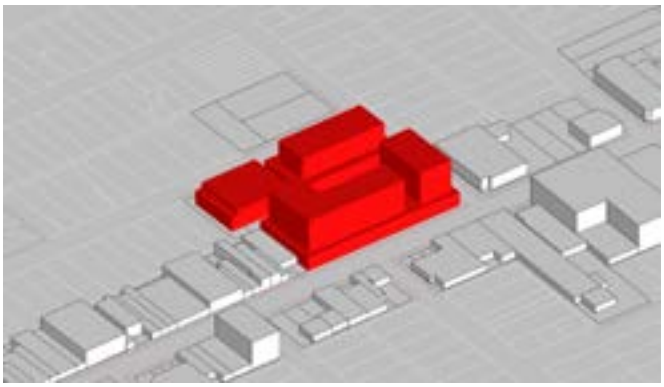


Figure 64. Site two, south-east isometric view

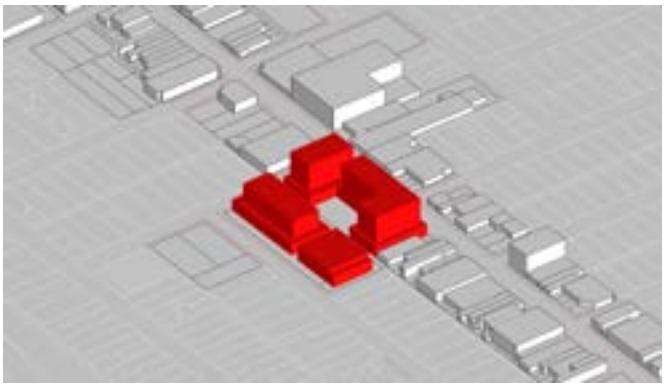


Figure 65. Site two, south-west isometric view

Precinct testing

Market Precinct

A review of the existing heights identified that there was a need to review the Market Precinct with regard to the draft proposition on the Preston Market site.

Testing was required in order to determine appropriate heights for the area that allow for good design outcomes that are in line with the proposed vision for the Preston Market site.

PARAMETERS	INITIAL METRICS
Overall Height	10 storeys
Ground floor rear setback	3m at residential interface
Street wall height	4 storeys
Upper-level rear setback	N/A
Upper-level front setback	3m - 5m
FAR	3:1 - 5:1
Landscape requirements	Maximum 80% site coverage 10% dedicated to landscaping

Table 22. Table of initial test metrics

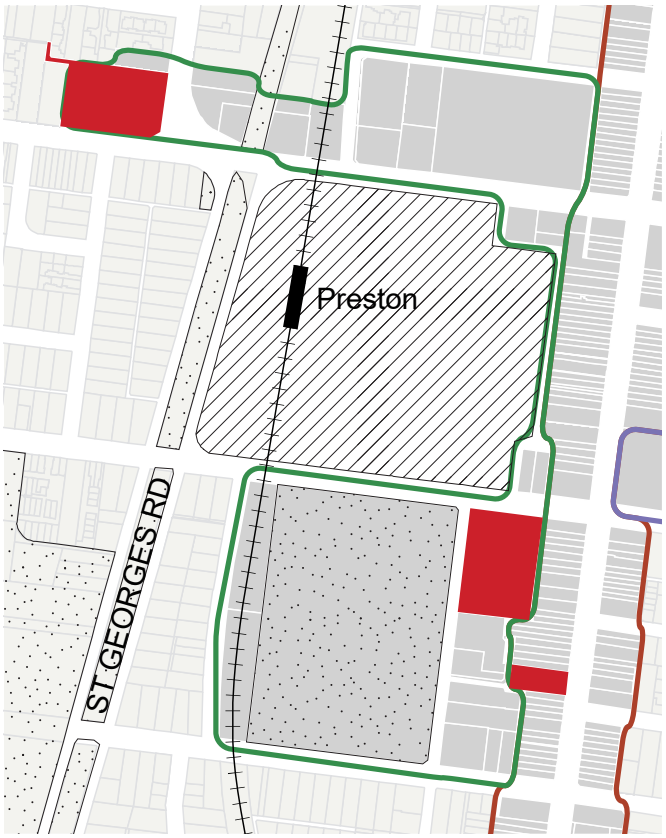


Figure 66. Regent precinct map with selected sites for testing

Solar testing: public realm

To protect solar access to the public realm in the Market precinct, Cramer street was identified as a key street and Preston oval was identified as a key open space to protect solar access.

- No overshadowing
- Time within which no overshadowing can occur
- Overshadowing

	10AM	11AM	12PM	1PM	2PM	3PM
4						
5						
6						
7						
8						
9						
10						

Table 23. Market precinct overshadowing of Preston Oval at the winter solstice

KEY FINDINGS

- Interface requirements need to be applied to Cramer street frontages
- Interface requirements need to be applied to the Preston Oval interface in order to achieve no overshadowing at the winter solstice from 10am - 3pm
- A 6 - 10 storey height limit would be achievable with interface requirements in place to managing overshadowing at 11am.

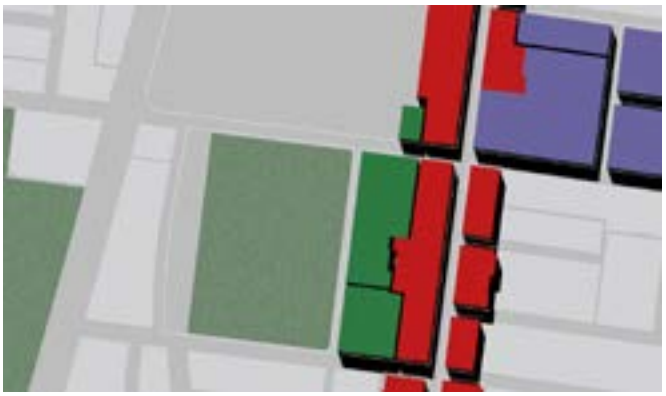


Figure 67. 7 Storeys at 1pm, spring equinox

Figure 68. 6 Storeys at 11am, winter solstice

Precinct testing

SITE ONE

368-390 Murray Road, Preston Site size: 58m x 88m

Site one is located in the north-east of the precinct on the Corner of Spring Street and Murray Road. There are residential properties across Murray Road to the south of the site, as well as residential properties to the west. Interface requirements for these edges have been modelled.

The side interface setback creates space for a service lane that connects with the existing laneway on the site. A break in the Murray Road interface is modelled to break down the form, in order to fit with the existing character.

KEY FINDINGS

- The setbacks and street wall heights are achievable and appropriate on the site.
- The overall height does not allow for a sensitive transition to residential context.
- The FAR result is higher than the initial metric range.
- The site coverage is lower than the initial metric.

PARAMETERS	INITIAL METRICS	TESTING OUTCOMES
Overall Height	10 storeys	
Ground floor rear setback	3m at residential interface	
Street wall height	4 storeys	
Upper-level rear setback	N/A	
Upper-level front setback	3m - 5m	3m
FAR	5:1	5.5:1
Landscape requirements	Maximum 80% site coverage 10% dedicated to landscaping	71.6% site coverage

Table 24. Table of initial metrics and the testing outcomes for each metric.

Figure 69. Site one, plan view

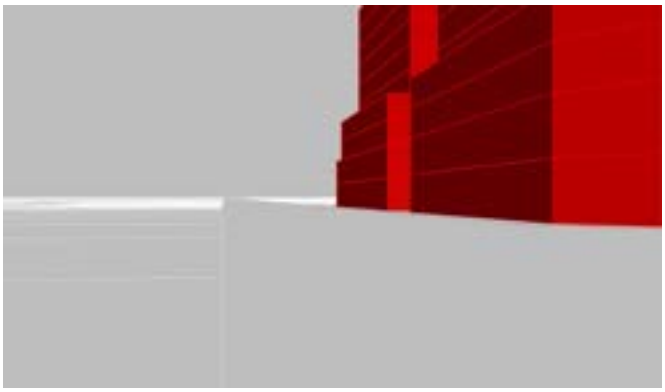


Figure 70. Site one, street view

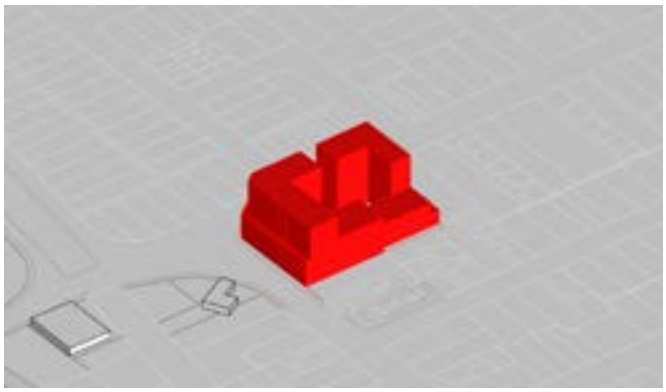


Figure 71. Site one, north-east isometric view

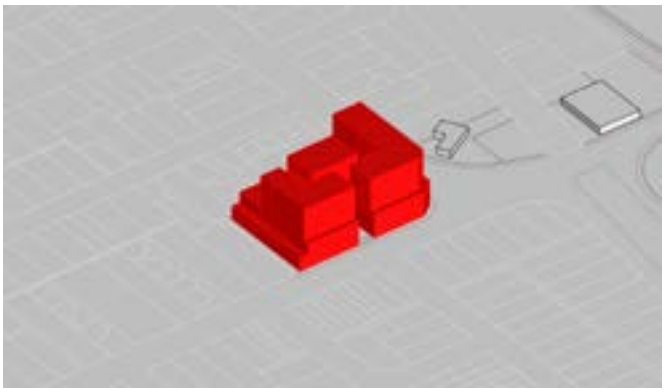


Figure 72. Site one, south-east isometric view

SITE ONE REFINED

368-390 Murray Road, Preston Site size: 58m x 88m

Site one is located in the north-east of the precinct on the Corner of Spring Street and Murray Road. There are residential properties across Murray Road to the south of the site, as well as residential properties to the west. Interface requirements for these edges have been modelled.

The side interface setback creates space for a service lane that connects with the existing laneway on the site. A break in the Murray Road interface is modelled to break down the form, in order to fit with the existing character.

KEY FINDINGS

- The setbacks and street wall heights are achievable and appropriate on the site.
- The refined overall height allows for a sensitive transition to residential context.
- The FAR result is lower than the initial metric range.
- The site coverage is lower than the initial metric.

PARAMETERS	INITIAL METRICS	TESTING OUTCOMES
Overall Height	6 storeys	
Ground floor rear setback	3m at residential interface	
Street wall height	4 storeys	
Upper-level rear setback	N/A	
Upper-level front setback	3m - 5m	3m
FAR	5:1	4.5:1
Landscape requirements	Maximum 80% site coverage 10% dedicated to landscaping	71.6% site coverage

Table 25. Table of initial metrics and the testing outcomes for each metric.

Figure 73. Site one, plan view

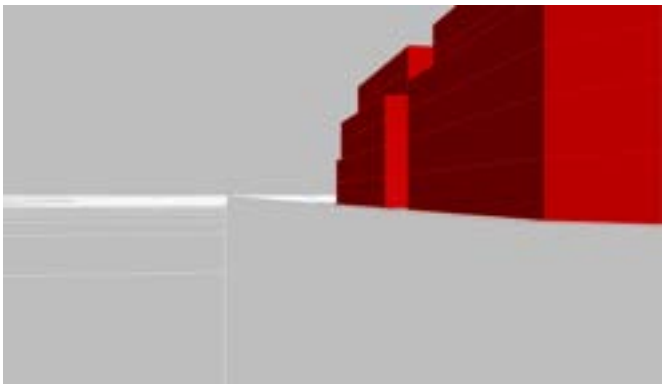


Figure 74. Site one, street view

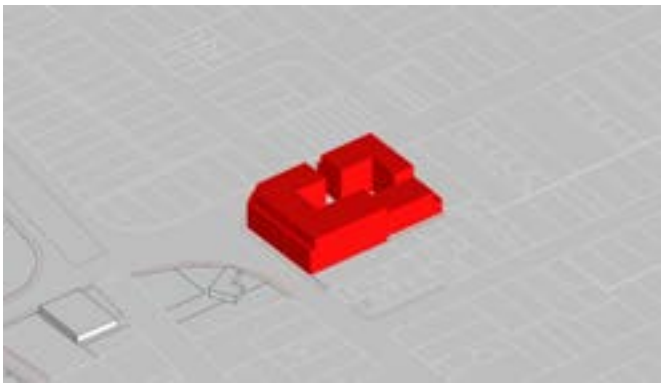


Figure 75. Site one, north-east isometric view

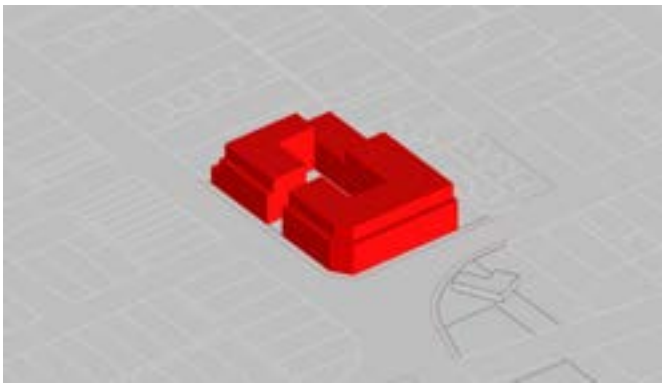


Figure 76. Site one, south-east isometric view

SITE TWO

1 Cramer Street, Preston

Site size: 64m x 63m

Site two is located in the south-east of the precinct. The site fronts onto Cramer Street and Mary Street, opposite Preston Oval. The modelled built form is broken across the site with spaces or private and public open space and a through link from Mary Street to the lane to the east.

The forms range from 6 - 10 storeys. The 4 storey street wall at Cramer Street responds to the context.

KEY FINDINGS

- The overall height, setbacks and street wall heights are all achievable and appropriate on the site.
- The FAR result is lower than the initial metric.
- The site coverage is below the initial metric.

PARAMETERS	INITIAL METRICS	TESTING OUTCOMES
Overall Height	10 storeys	
Ground floor setback Mary St	5m	
Street wall height	4 storeys	
Upper-level rear setback	N/A	
Upper-level front setback	3m - 5m	
FAR	5:1	4.8:1
Landscape requirements	Maximum 80% site coverage 10% dedicated to landscaping	63% site coverage

Table 26. Table of initial metrics and the testing outcomes for each metric.

Figure 77. Site two, plan view

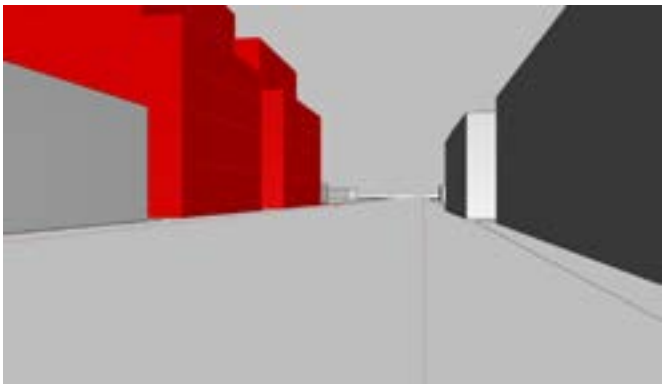


Figure 78. Site two, street view

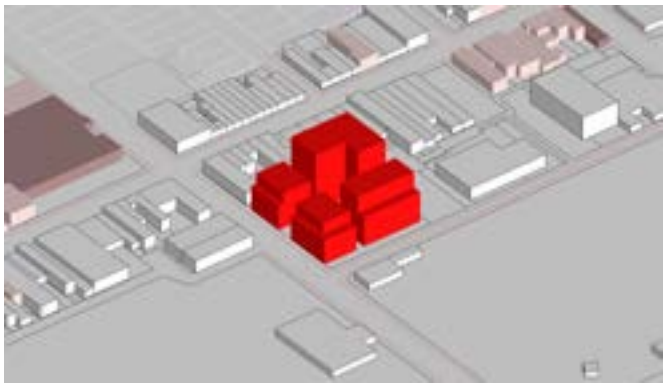


Figure 79. Site two, north-west isometric view

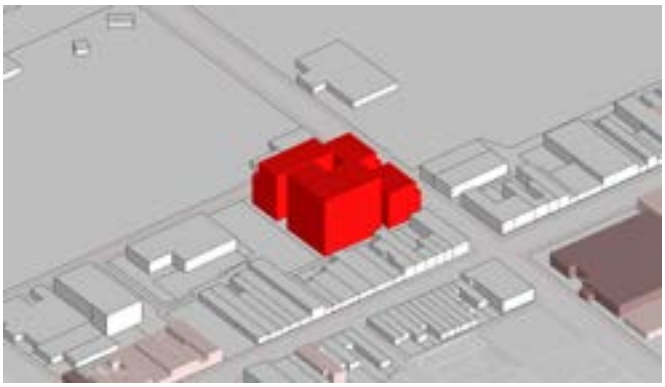


Figure 80. Site two, south-east isometric view

Precinct testing

Civic Precinct

The draft framework report identified that no review is required for the Civic precinct and the height limit will remain at 5 - 7 storeys.

Built form testing was required in order to confirm existing heights are appropriate and the built form requirements can be achieved.

PARAMETERS	INITIAL METRICS
Overall Height	5 - 7 storeys
Ground floor rear setback	N/A
Street wall height	4 storeys
Upper-level rear setback	N/A
Upper-level front setback	3m
FAR	2.5:1 - 3.5:1
Landscape requirements	Maximum 70% site coverage 20% dedicated to landscaping

Table 27. Table of initial test metrics

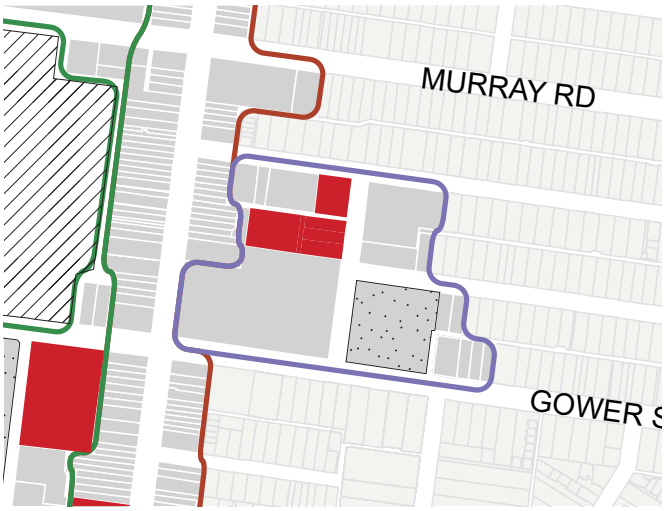


Figure 81. Precinct map - show selected sites for site specific testing

Solar testing: public realm

To protect solar access to the public realm in the Civic precinct, Gower Street was identified as a key street to apply solar controls.

- No overshadowing
- Time within which no overshadowing can occur
- Overshadowing

	10AM	11AM	12PM	1PM	2PM	3PM
4						
5						
6						
7						
8						
9						
10						

Table 28. Civic precinct overshadowing of Gower Street south footpath at the spring equinox.

KEY FINDINGS

- The existing 5 - 7 storey height control for the Civic precinct satisfies the solar requirements if an upper-level setback is applied above 6 storeys at this interface.

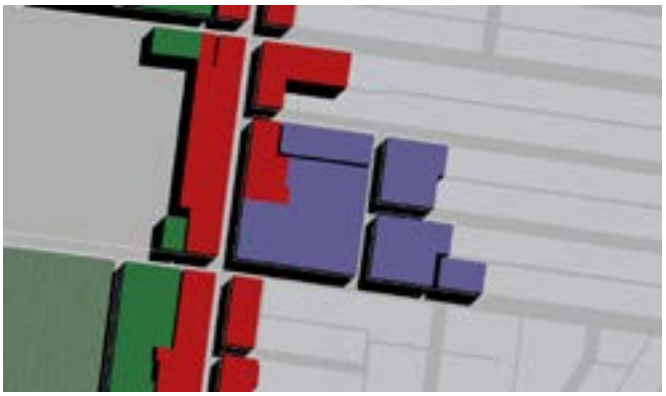


Figure 82. 5 Storeys at 10am

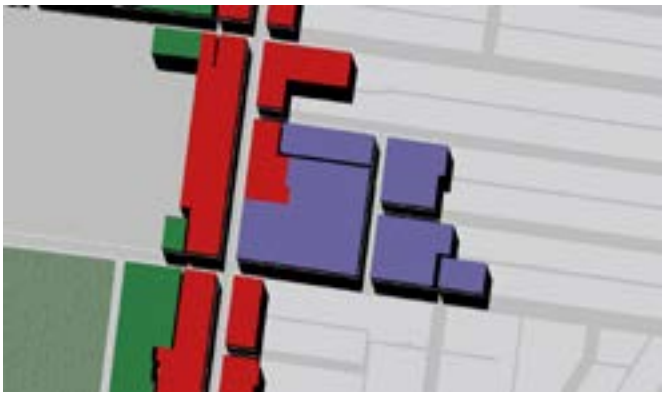


Figure 83. 7 Storeys at 1pm

SITE ONE

275 Gower Street, Preston

Site size: 81m x 33.5m

Site one is located within the Civic Precinct and currently exists as public carparking. For the purpose of the testing the sites directly to the south of the existing service laneway have been consolidated as aerial images indicated they are in single ownership. The built form is modelled to the west of the site with public space provided to the east to allow for adequate sunlight access. There is a side setback to allow for a through laneway to the west and another link provided adjacent to the open space to connect with an existing entrance to the south of the precinct.

KEY FINDINGS

- The overall height, street wall height and setbacks can be achieved and are appropriate.
- The FAR result aligns with the initial metric range.
- The site coverage is lower than the initial metric.

PARAMETERS	INITIAL METRICS	TESTING OUTCOMES
Overall Height	7 storeys	
Street wall height	4 storeys	
Upper-level rear setback	3m	
Upper-level front setback	3m	
FAR	2.5:1 - 3.5:1	2.8:1
Landscape requirements	Maximum 70% site coverage 20% dedicated to landscaping	52.1% site coverage

Table 29. Table of initial metrics and the testing outcomes for each metric.

Figure 84. Site one, plan view

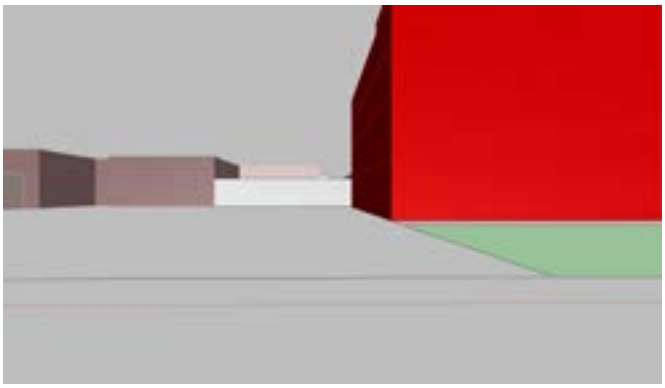


Figure 85. Site one, street view

Figure 86. Site one, north-east isometric view

Figure 87. Site one, south-west isometric view

SITE TWO

59A Roseberry Avenue, Preston

Site size: 34m x 29m

Site two is located in the north-east of the Civic Precinct on Roseberry Avenue. The site is at the edge of the study area on a residential street. The 3m ground floor setback reflects the existing conditions. The 6m side setback to the west of the site allows for a through lane which connects to the existing lane at the rear of the site. No sensitive interface requirements apply as the site only interfaces the street and adjacent sites within the study area.

KEY FINDINGS

- The setbacks and street wall heights are achievable and appropriate on the site.
- The overall height allows for a sensitive transition to residential context.
- The FAR result aligns with the initial metric range.
- The site coverage is within 5% of the initial metric.

PARAMETERS	INITIAL METRICS	TESTING OUTCOMES
Overall Height	5 storeys	
Ground floor front setback	N/A	3m on Roseberry Avenue
Street wall height	3 storeys	
Upper-level rear setback	3m	
Upper-level front setback	3m	
FAR	2.5:1 - 3.5:1	2.8:1
Landscape requirements	Maximum 70% site coverage 20% dedicated to landscaping	67.7% site coverage

Table 30. Table of initial metrics and the testing outcomes for each metric.

Figure 88. Site two, plan view

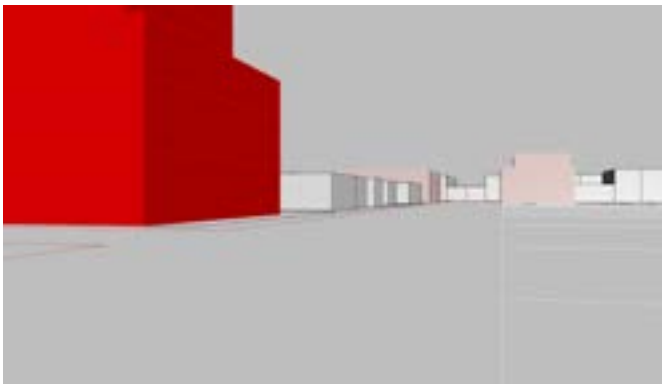


Figure 89. Site one, street view

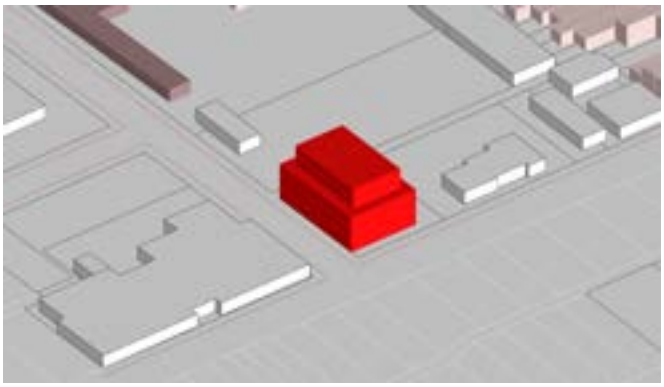


Figure 90. Site one, north-east isometric view

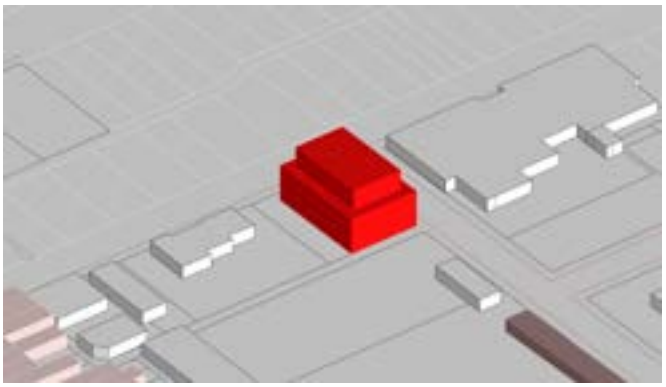


Figure 91. Site one, south-west isometric view

Precinct testing

Bell Street Precinct

The draft framework report identified that the existing height controls required review and progression in response to the Level Crossing Removal Project in the Bell Street Precinct. Testing was required in order to determine whether the draft built form controls are appropriate.

PARAMETERS	INITIAL METRICS
Overall Height	4 and 8 storeys
Ground floor front setback	5m
Street wall height	8 storeys
Upper-level rear setback	5m (at 3 storeys)
Upper-level front setback	N/A
FAR	4:1
Landscape requirements	Maximum 80% site coverage 10% dedicated to landscaping

Table 31. Table of initial test metrics

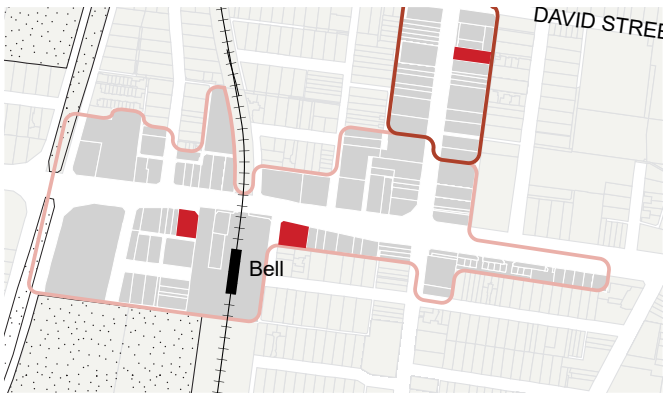


Figure 92. Precinct map - show selected sites for site specific testing

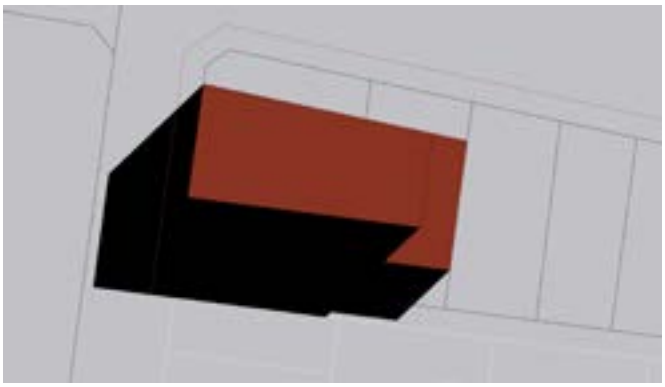


Figure 93. Private open space solar testing, 4 Storeys 10am

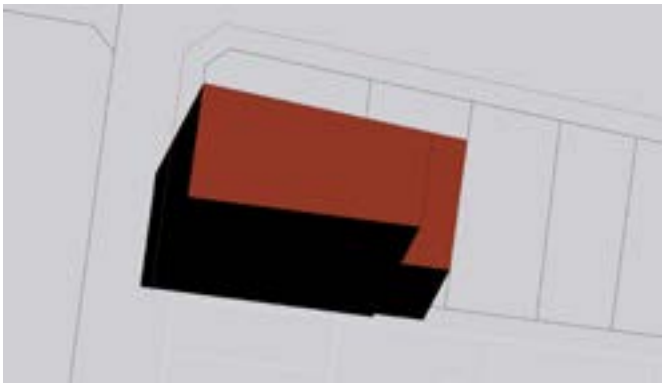


Figure 94. Private open space solar testing, 4 Storeys 11am

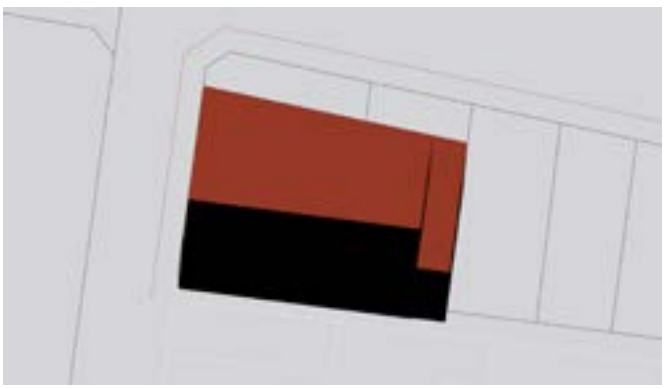


Figure 95. Private open space solar testing, 4 Storeys 12pm

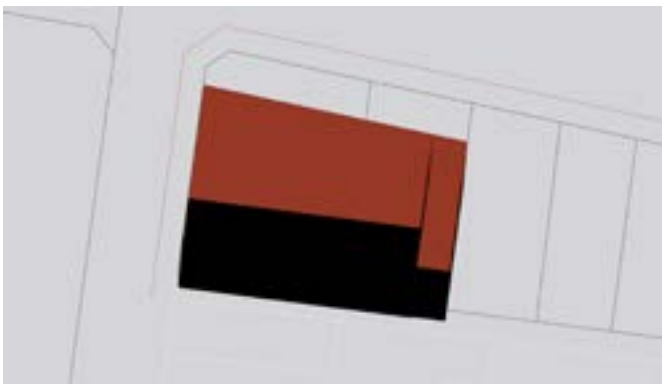


Figure 96. Private open space solar testing, 4 Storeys 1pm

SITE ONE

361 Bell Street, Preston

Site size: 29m x 21m

Site one is located on the corner of Bell Street and Garnet Street, near the centre of the precinct. The site backs onto sensitive residential properties to the south. Interface requirements have been applied at the sensitive interface.

KEY FINDINGS

- In the initial iteration the overall height of 8 storeys overshadowed the residential interface and the draft interface requirements were not effective. The interface approach for this area was therefore reviewed to test a reduced height of four storeys at this sensitive interface. This demonstrated that a reduced height of four storeys minimised overshadowing to the south.
- The FAR result is lower than the initial metric.
- The site coverage is below that initial metric.

PARAMETERS	INITIAL METRICS	TESTING OUTCOMES
Overall Height	8 storeys	4 storeys
Ground floor rear setback	5m	
Street wall height	4 storeys	
Upper-level rear setback	5m (at 2 storeys)	
Upper-level front setback	N/A	
FAR	4:1	2.2:1
Landscape requirements	Maximum 80% site coverage 10% dedicated to landscaping	64% site coverage

Table 32. Table of initial metrics and the testing outcomes for each metric.

Figure 97. Site one, plan view

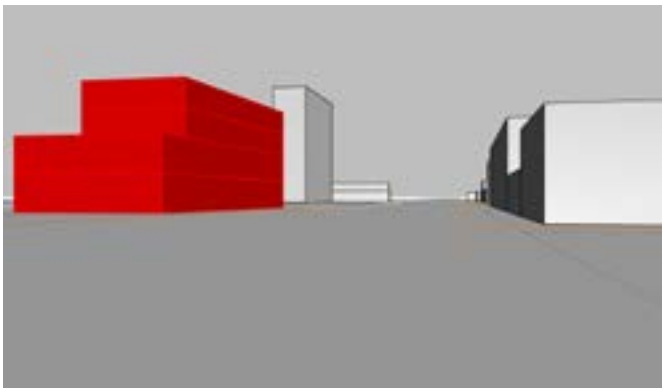


Figure 98. Site one, street view

Figure 99. Site one, south-west isometric view

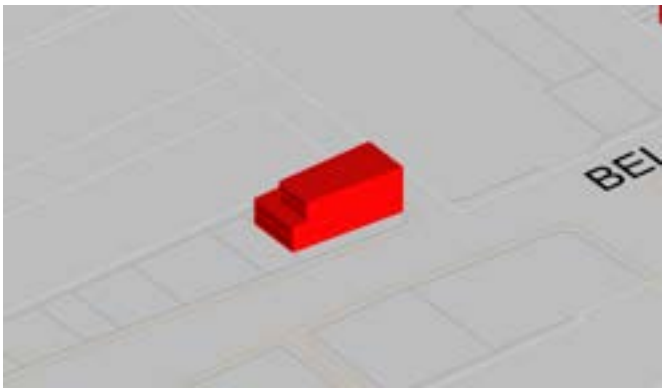


Figure 100. Site one, north-west isometric view

SITE TWO

367 Bell Street, Preston

Site size: 24m x 32m

Site two is located in the west of the precinct. The site fronts onto Bell Street and backs onto an existing laneway. Building separation has been applied to rear boundary of the site to protect the primary outlook of the existing 10 storey building.

Laneway interface recommendations have been applied to the model.

KEY FINDINGS

- The overall height, setbacks and street wall heights are all achievable and appropriate for the site.
- The FAR is higher than the initial metric
- The site coverage is lower than the initial metric.

PARAMETERS	INITIAL METRICS	TESTING OUTCOMES
Overall Height	10 storeys	
Ground floor front setback	5m	
Street wall height	10 storeys	
Upper-level rear setback	5m (at 3 storeys)	
Upper-level front setback	N/A	
FAR	4:1	6.3:1
Landscape requirements	Maximum 80% site coverage 10% dedicated to landscaping	73% site coverage

Table 33. Table of initial metrics and the testing outcomes for each metric.

Figure 101. Site two, plan view

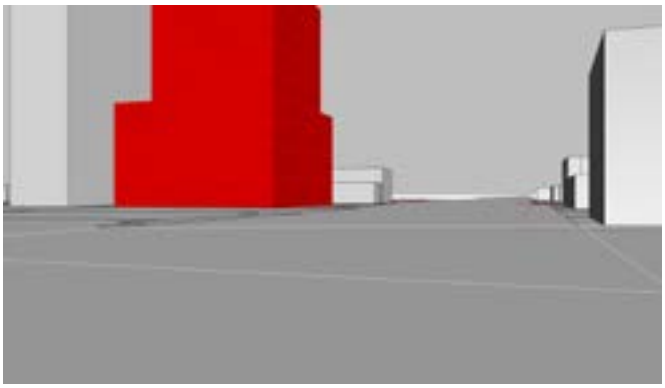


Figure 102. Site two, street view

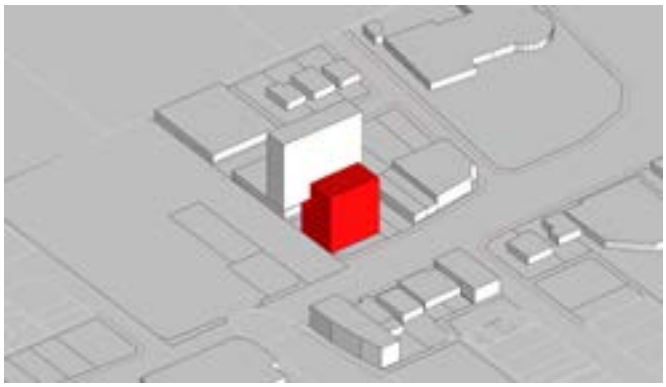


Figure 103. Site two, north-east isometric view

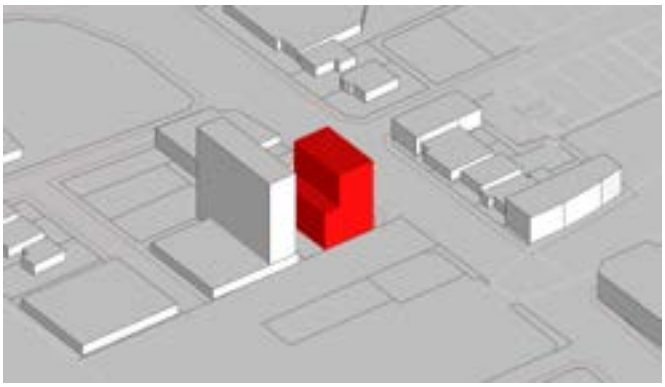


Figure 104. Site two, south-east isometric view

The built form testing indicated in general overall heights and interface requirements were suitable and resulted in good design outcomes. However, the following refinements to the built form controls were proposed in response to the findings from the testing:

Solar requirements for private open space

The private open space solar testing showed overshadowing issues for residential properties to the south of the study area. This overshadowing occurred in the High Street North Precincts and the Market Precincts and is proposed to be managed through the introduction of an adapted Private Open Space Standard (Standard A14 and B21 from ResCode). This will ensure that these properties are afforded the same level of solar protection as those that do not abut areas of higher density.

Bell Street Precinct - Overall height

The testing outcomes of Site 1 to the east of the Bell Street precinct identified that the initial 10 storey height limit led to poor design outcomes and that draft interface requirements were not effective in managing impacts to low-scale residential areas to the south-east. A reduced height of 4 storeys is proposed to improve design outcomes at this interface and respond to the sensitive context.

Regent Precinct - Overall Height and Street Wall Heights

The varying property sizes in the Regent Precinct require varying height limits that are responsive to context. A 6 storey height limit is proposed to apply to the small narrow properties along the High street corridor. For the larger scale sites, an 8 storey height limit is proposed. For the sites at the edges of the study area boundary, a 4 story height limit is proposed to allow for a sensitive transition to the residential context.

The testing process indicated that a 7 storey street wall height was too visually dominant when viewed from High Street. This was reduced to a 2 storey street wall height which was found to be more visually appropriate and supportive of a consistent street wall height along High Street. A 3m upper-level setback above the street wall height is recommended.

Market Precinct - Overall Height

A 10 storey height is considered suitable for the majority of site in the Market Precinct. This is with the exception sites to the west of the railway line. A reduction in height to 6 storeys is proposed in this location to allow for a sensitive transition to the low-scale surrounding residential context.

FAR

The FAR results across the study area indicated that the test FARs required refinement. Further to this, the testing resulted in variable heights being proposed within precincts which means that a precinct based FAR is no longer suitable. Instead, the FAR requirements should vary in line with the proposed variation in heights.

The FARs were determined by using an average of the FAR outcomes across sites on which the built form tested was at the same height. For example, the average of the FAR outcomes of two sites on which a 6 storey built form was tested. This average was then rounded to the nearest 0.5.

The FARs have generally been reduced based on the findings from the testing. This is with the exception of the Civic Precinct in which a test FAR range was set. The testing indicated that the FAR should fall within this range but that the same FAR should apply to all sites (whether 5 or 7 storeys). This will support the delivery of public realm outcomes on sites with buildings of 7 storeys.

No FAR is proposed to apply to areas in which a 4 storey height control applies. These sites are smaller-scale and located at the edges of the study area. The built form envelope controls are considered sufficient to guide outcomes on these sites.

The refined recommendations are outlined in Table 36.

Site Coverage

The site coverage results across the study area indicated that some refinement was required. The testing resulted in variable heights being proposed within precincts which means that a precinct based site coverage control is no longer suitable. Instead the site coverage requirements should be linked to the heights.

The site coverage results for all of the precincts indicated that an increase in the site coverage requirements was required as the typologies modelled indicated lower levels of site coverage. The site coverage controls were determined by using an average of the site coverage outcomes across sites rounded to the nearest 5%. For example, the average of the site coverage control outcomes of two sites on which a 6 storey built form was tested.

The site coverage results for the Regent, Market, Civic and Bell Street precincts indicated a reduction in site coverage was required. This was because the typologies modelled indicated lower levels of site coverage.

The refined recommendations are outlined in Table 36.

	Test Height	Test FAR	Site 1 Height	Site 1 FAR	Site 2 Height	Site 2 FAR
High Street North	6	4.2:1	6	3.9:1	6	3.8:1
Regent	8	4:1	8	3.6:1	8	2.9:1
High Street Central	6	4.2:1	6	4.4:1	6	3.1:1
Market	10	5:1	6	4.5:1	10	4.5:1
Civic	5 - 7	2.5:1 - 3.5:1	7	2.8:1	5	2.8:1
Bell	10	4:1	4	2.2:1	10	6.3:1

Table 34. FAR testing results.

	Intial site coverage requirement %	Site 1 Height	Site one site coverage %	Site 2 Height	Site two site coverage %
High Street North	90	6	83.3	6	86
Regent	70	8	58.7	8	71.2
High Street Central	90	6	77	6	73
Market	80	6	71.6	10	63
Civic	70	7	52	5	67
Bell	80	4	64	10	73

Table 35. Site coverage testing results.

Higher than the initial recommendation

Lower than the initial recommendation

Reduced height proposed

	FAR	Site coverage
4 storeys	N/A	N/A
6 storeys	4:1	80%
5-7 storeys	3:1	60%
8 storeys	3.5:1	65%
10 storeys	5:5	70%

Table 36. Recommended FAR and site coverage controls aligned with proposed heights.

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