Plan Change 14

Section 32:

Lower height Limits: Victoria Street & Cathedral Square – Qualifying Matters

Christchurch City Council

Technical Report

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Lower Height Limits – Victoria Street and Cathedral Square

1. Summary

1.1.1. This report identifies the issue of building height restrictions in two defined areas – Victoria Street and Cathedral Square. The report should be read alongside the broader technical Report – Issues and Options for Commercial Zones[1] that provides a technical response to Council's response to the NPS UD direction to increase development capacity in commercial zones.

1.1.2. It is considered that we are not required to justify these heights as qualifying matters but are doing so for the avoidance of all doubt and to demonstrate a higher evaluation threshold. This report therefore focuses on the matter of proposed lower height limits in the Victoria Street precinct and on some sites adjacent to Cathedral Square.

1.1.3. In Victoria Street and Cathedral Square, the specific characteristics of these locations mean that urban development enablement involving buildings up to 90m high (as per the proposed City Centre zone height limit[2]) would be inappropriate. This report identifies the characteristics of these locations such that an amended height limit is required. Urban form modelling has been undertaken that provides a justification for this approach and has helped identify an alternative, more suitable approach to height limits in these locations.

1.1.4. In summary, it is recommended that a height limit of 45m be applied in both the Victoria Street precinct and some sites adjacent to Cathedral Square. This contrasts with the 90m height limit that will be applied to be rest of the city centre zone (currently zoned Commercial Central City Business zone (CCCBZ)).

1.1.5. The addresses of the sites proposed to be subject to the lower height limits are:

Rationale: Impact on Cathedral Square's role as a key civic space	
14, 26, 28, 31, 32, 33, 50, 51 and 52	Cathedral Square
170	Oxford Terrace
763	Colombo Street
105	Worcester Street
Rationale: Victoria Street - City centre built form and legibility	
1/132,1/55,101,104,106,113,118, 122, 123, 126, 131, 133, 134, 137,138,143,145,148,149,155,159,167,169,171,177,179,183,2H-91,30,31,50,51,53,60,62,63,65,66,67,73,74,76,77,83,94,98,N/91	Victoria Street
1-388,366,376,384	Montreal Street
25,39,51,52	Peterborough Street
28	Bealey Ave
17	Dorset Street

[1] Technical Report – Issues and Options for Commercial Zones, CCC, July 2022
[2] Technical Report – Issues and Options for Commercial Zones, CCC, July 2022

2. Legal Requirements

2.1.1. We consider that Council is not required to justify these lower heights as qualifying matters but are doing so for the avoidance of all doubt and to demonstrate a higher evaluation threshold. In doing so, the following requirements should be met to reflect the approach necessary for Qualifying Matters.

2.1.2. The matter of whether lower height limits can be applied to particular locations within the City Centre City should be considered under section 77O (a), (f) and (j) of the Resource Management Act 1991 (RMA). This relates to 'Qualifying Matters in application of intensification policies to urban non-residential areas' and identifies that:

'a specified territorial authority may modify the requirements of Policy 3 in an urban non-residential zone to be less enabling of development than provided in those policies only to the extent necessary to accommodate 1 or more of the following qualifying matters that are present:

(a) A matter of national importance decision makers are required to recognise and provide for under Section 6

Namely Section 6f of the RMA - The protection of historic heritage from inappropriate subdivision, use and development. This is relevant to the case for a lower height in Cathedral Square.

(f) Open space provided for public use but only in relation to land that is open space

(j) Any other matter that makes high-density development as provided for by Policy 3, as the case requires, inappropriate in an area, but only if section 77R is satisfied.

2.1.3. Section 77P describes the evaluation – additional to that under section 32 of the RMA – required for qualifying matters. However, section 77Q specifies a different process for 'existing qualifying matters', which includes a qualifying matter referred to in section 77O(a) that is operative in the relevant district plan when this plan change. This is the case for the sites adjacent to Cathedral Square, given the need to protect the heritage setting (and other) values associated with this important location.

2.1.4. For section 77O(j) 'other matters', section 77R requires that the matter can only be considered as a qualifying matter if an evaluation report also identifies:

a) The specific characteristic that makes the level of urban development required in Policy 3 in appropriate
b) Justifies why that characteristic makes that level of urban development inappropriate given the national significance of urban development and the objectives of the NPS UD and
c) Includes site specific analysis

This report meets the requirements in section 77R.

2.1.5. As such, this evaluation highlights the rationale behind identifying lower height limits in the Victoria Street precinct and some sites adjacent to Cathedral Square in order that sections 77O(a) and (j), 77P, 77Q, and 77R are met.

3. Background to Lower Height Limits

3.1.1. There is a history of providing for lower height limits within the City for some time. Both the current District Plan (post-earthquake) and earlier City Plan provided for lower heights in selected locations of the City.

City Centre Context – Victoria Street & Cathedral Square

3.1.2. In the case of Cathedral Square, these lower heights reflected the role and importance of the square as a key civic space that has heritage setting status in the District Plan. The 2018 document Whiti-Reia Cathedral Square – Our Long Term Vision, (Regenerate Christchurch) noted that the square is 'a premium gathering place, fulfilling the descriptor of 'the city's living room, the streets leading to it the hallways'. It notes that Cathedral Square occupies and defines the physical, social and historical centre of Christchurch and remains critical to the central city and indeed Christchurch.

3.1.3. The Christchurch earthquakes were the trigger for a wholescale re-consideration of the scale and form of the City. The 2011 earthquake rendered almost 50% of the CBD's buildings unsafe and over 600 commercial buildings were demolished. The City's core infrastructure was wiped out including roads, bridges, water supply, sewerage, electricity and communications. The entire CBD was closed for over 2 years and 6,000 businesses were displaced by the cordon, affecting 50,000 Central City jobs[3]. By 2015, there was almost 70ha of vacant land in the Central City[4]. By 2020 this had reduced to 58ha and by 2021 it reached 46.5ha following reclassification of almost 8ha of land in the Avon River Corridor to public open space. Needless to say, a significant amount of land still remains vacant within the Central City and these unused/underutilised sites continue to have an impact on the form and feel of the city.

3.1.4. The Christchurch Central Recovery Plan (CCRP) noted that 'lower buildings will become a defining central city feature in the medium term (*timeframe was not defined*). A lower rise city fits in with the community's wishes and takes into account the economic realities and market demand for property in the core. It also recognises the character and sensitivity of certain areas such as New Regent Street, and reduces wind tunnels and building shade.'

3.1.5. In general, height limits across the City were reduced post-earthquake for several key reasons:

- Height economics – extra cost of building taller buildings on liquefiable soils meant that lower height buildings were more economic to build. Plot ratio rules were designed to enable shorter but wider buildings to be built (rather than tall and skinny).
- There were moves to support economic viability for developments in the CBD by reducing supply outside of the core in combination with enabling take up of sites with lower building heights than were previously provided for.

[3] Overview of the Impacts of the 2010-2011 Canterbury Earthquakes, International Journal of Disaster Risk Reduction, Dec 2015

[4] Central City defined as the area contained within the Four Avenues, CCC 2015-2021

3.1.6. Prior to the earthquakes (City Plan), there were also non-economic reasons to limit heights in certain areas. This included matters such as protecting character or heritage, view shafts and potentially other planning or social reasons. The rationale behind these matters was carried forward post-earthquake i.e. some locations had even lower heights than the general 28m limit that was introduced across the core post-earthquake.

Victoria Street

3.1.7. The height limit in the Victoria Street precinct (from Kilmore/Durham Street corner) is currently 17m, contrasting with the 28m height limit in the wider Central City core. In the earlier City Plan, the height limit in Victoria Street was part of the 'Fringe' area and had a 30m height limit as oppose to the 40/45/80m limits in the core.

3.1.8. It is also notable that the District Plan's Central City core overlay excludes the Victoria Street precinct but includes the core Central City Business zone. The Core Overlay requires high quality urban design and active frontages.

Cathedral Square

3.1.9. There is currently a 28m height limit in the buildings around Cathedral Square (District Plan). The earlier District and City Plans identified that there was a 45m height limit in this area that contrasted with the 80m in other core areas.

3.1.10. Whilst the 1995 Notified District Plan therefore enabled significantly higher heights in the Central City (than the later post-earthquake Plan) it notably also contained rules to retain sunlight admission to important pedestrian areas[5].

Rule 2.2.3 Sunlight admission to important pedestrian areas.

(a) Cathedral Square: No building shall be constructed or extended so that it casts a shadow on the ground at 12 noon (Local mean time) on 22 June beyond the lines AB, CD and EF as shown in Part 3, Appendix 1. The angle of recession should be 23 degree measured in a north/south plane. (see Appendix 1 of this report)

3.1.11. This Plan noted that Cathedral Square is a significant open space in the city and a physical focal point given its role as a very important public space. The Plan noted that the area is used intensively for pedestrian purposes.

3.1.12. The Plan noted[6] that reasons for rules relating to recession planes controlling buildings around the Square is to ensure that the area, and the activities enjoyed in the area, are able to enjoy a sufficient amount of sunlight admissions. This is necessary to ensure that the spaces function successfully and are attractive for public use. It was noted that the rules were written in such a way as to ensure that the rule is a reasonable proxy to the orientation of the public spaces with regard to the angles of the sun at critical times of year. Section 2.3

[5] Reasons for Rules – 6.1.3
[6] Reasons for Rules – 6.1.3

'Impacts on the Public Realm' provides further support for retention of access to sunlight and daylight at the street and in public spaces.[7]

4. Importance/reassessment of Lower Height Limits

4.1.1. Against that background, Council has given specific consideration to the appropriate building height limits in the Victoria Street precinct and around Cathedral Square, for the reasons summarised below in respect of each. Modelling assessments have been undertaken for both Victoria Street and Cathedral Square (Appendix 2 & 3).

Victoria Street

4.1.2. The Victoria Street precinct is distinct from the rest of the commercial core. It is a relatively narrow strip of Commercial Core zoning which projects to the north west of the core and is surrounded by residential uses. It has an established history of lower height limit provisions than the rest of the Commercial Core area and can be considered significantly separate from the main concentration of development in the City Core.

4.1.3. Given the Victoria Street precinct's ribbon form it will continue to have lower scale buildings on either side (even with higher density enablement) and therefore the visual impact of any tower developments within it needs to be considered, given their potential not to be absorbed into the City Centre cluster. In addition the shading and visual impact of any towers in this location must be considered, in terms of their effects on the adjacent residential zones.

Cathedral Square

4.1.4. Cathedral Square has historical and social significance as a central component of the Canterbury Association's original plan for Christchurch, a principal urban design feature of Christchurch City, as the site of Christchurch's Anglican Cathedral, as a focus for civic activity and as the city's transport and entertainment hub for a century.[8] Whilst the earthquakes have changed the built form in this location, the setting of the square as an important civic space for community gathering remains.

4.1.5. The 'value' of the Square as one of Christchurch's existing and historical key civic spaces was most recently outlined in Regenerate Christchurch's Long Term Vision for Whiti-Reia Cathedral Square[9]. This referred to Cathedral Square as 'central to the identity of Christchurch as it is quite literally and figuratively at the heart of the city, where people gather for significant ceremonies and events as well as less formal activities. As a prime focal point, it shapes perceptions of the city for both visitors and residents and acts as a connecting hub to other Central City precincts, attractions and facilities.'

[7] Technical Report – Issues and Options for Commercial Zones, CCC

[8] https://districtplan.ccc.govt.nz/Images/DistrictPlanImages/Statement%20of%20Significance/Central%20City/HID%20107.pdf

[9] Regenerate Christchurch's Long Term Vision for Whiti-Reia Cathedral Square, 2018

4.1.6. This strategy noted that Cathedral Square should once again (post-earthquake redevelopment) become the civic heart of central Christchurch and be actively used, day and night, be greener than before and be suitable for use in a range of weather conditions. Critical success factors identified within the strategy include:

- Creation of a great civic space which encourages socialisation and discourse
- A high quality environment to attract retain visitors and residents
- Creation of an inviting and inclusive environment that enables more citizens to participate in central city life
- A pedestrian environment that encourages dwell time

4.1.7. In addition to the Square's heritage importance as a civic space, the factors above all identify a need to uphold the significant amenity values offered within the Square.

4.1.8. Going forward and with the continued redevelopment of buildings around the square, it is therefore important to ensure that the role of the area in providing a well-functioning civic space can continue. This includes ensuring that the built form adjacent to the square does not comprise the square's ability to provide for community gathering in a well-designed quality environment. Reduced access to sunlight (because of tall buildings adjacent to the square) would severely compromise the ability to achieve these critical success factors – a cold, shaded environment with a greater likelihood of wind tunnelling would be contrary to such objectives.

4.1.9. Earlier versions of the District Plan (1995) recognised that when higher height limits are enabled in the City, it was nonetheless appropriate to ensure that sunlight was retained in Cathedral Square as one important measure to protect its role as a crucial civic space (see Appendix 1)[10]. Whilst the rules pertaining to this protection were removed post-earthquake (because they were unnecessary when height limits in general were significantly reduced), the need for such provisions has returned given the increase in height enabled now.

4.1.10. Access to sunlight is an important component of a successful civic space. Research undertaken specific to Cathedral Square[11] confirmed the following points:

- The southern area has the most potential for sunlight access and is therefore the most suited to outdoor activities. It is desirable to retain solar access to this area for as much of the year as possible.
- The Distinction / OGB plaza area is at the east of the square and has potential for good evening sun and active uses to take place.
- The Central area is in front of the Cathedral. Solar access is important here but likely more so in the summer months and surrounds (which may include some time beyond the equinox, for example in April).
- Sunlight access at the north of the square is likely to be more restricted.

4.1.11. The value (socially and economically) of Cathedral Square will be compromised by a lack of restrictions on the height of adjacent buildings. It is appropriate that some carefully considered provisions are incorporated in order to ensure that the adjacent built form does

[10] District Plan, Volume 3, 13.4 Special Purpose (Pedestrian Precincts) Zone – Noted that areas zoned as such were 'open spaces of major importance to the city and its' identity'

[11] Cathedral Square Technical Report, CCC, June 2022

not provide for unduly high levels of shading in the square such that its role as an important community gathering and socialising space is compromised.

4.1.12. Sites adjacent to the Square are at different points in their development. Some sites are cleared, others are subject to designation, some have been recently developed e.g. Turanga, and some have active consent but have not yet been developed. For sites where a height limit overlay is recommended, this would apply to any future new consented development.

4.1.13. On the sites subject to a designation (Convention Centre precinct, Central Library and the Christchurch Exchange), a height limit would apply should the designation be lifted and the site used for a purpose other than that for which it is designated. The height limit would also be used for guidance when assessing any outline plan applications for that site, albeit Council could only recommend conditions relating to the height and the requiring authority would not be bound to use them (subject to the outcome of any appeal).

4.1.14. Of those sites with active consent, Number 26 Cathedral Square gained consent for a taller building in 2016 but this has not been built yet. Number 9 to the south of the Square also has a higher height proposal but this site is not covered by the 45m limitation proposal. Number 31 is consented (low scale) and there have been some initial discussions about other sites that were also relatively low rise.

5. The level of development provided for may be inappropriate

In the City Centre Zone (Victoria Street & Cathedral Square)

5.1.1. Policy 3(a) of the NPS UD requires that, in city centre zones, District Plans should enable building heights and density of urban form to realise as much development capacity as possible to maximise the benefits of intensification (subject to providing for qualifying matters (Policy 4)).

5.1.2. To inform the plan change, the Council has therefore assessed what constitutes 'as much development capacity as possible to maximise the benefits of intensification' in the context of Christchurch's City Centre. The outcome of this process is that a 90m building height limit is to be proposed generally throughout the City Centre (refer to Commercial Options Analysis - Commercial Zone Rules and Assessment Matters, CCC).

5.1.3. Given the specific characteristics of the Victoria Street precinct and Cathedral Square (as summarised earlier) the question arises as to whether a lower height limit should be applied as a qualifying matter in those areas.

5.1.4. Modelling assessments have been undertaken for both Victoria Street and Cathedral Square (Appendix 2 & 3). The following section provides a short summary of the outcomes of this analysis, followed by details of the scenarios tested and the evaluation undertaken.

Victoria Square

5.1.5. For the detailed reasons analysed below, a lower height limit than 90m – specifically, 45m – is appropriate to reflect the longstanding fact that the Victoria Street precinct is a distinct

and separate area from the rest of the Commercial City Central Business zone. The characteristics of the street (a single linear projection from the consolidated commercial core) and its surrounding residential zoning (rather than broader commercial uses) signal that a lower height limit would be more appropriate in this location, providing better outcomes in terms of visual impact, shading and built form.

Victoria Street Precinct Scenario Testing

5.1.6. Work was undertaken to test three scenarios for Victoria Street.

1. 90m for all sites currently zoned Commercial Central City Business zone (to be 'City Centre') including the Victoria Street precinct.
2. 60m for the Victoria Street precinct, others consistent with Scenario 1.
3. 45m for the Victoria Street precinct, others consistent with Scenario 1.

5.1.7. The findings of the study[12] were, in summary, that:

Scenario 1 – When building heights in the Victoria Street precinct are enabled at 90m, it presents as an extension in built form from the remainder of the more consolidated core city centre. There is a significant contrast between the Victoria Street precinct and its immediate residential setting.

Scenario 2 – There is less of an impact on the consolidated city centre at 60m but it is still visually significant and impacts negatively upon the legibility of the city centre in terms of urban form.

Scenario 3 – 45m is a proportionate height response both in relation to the surrounding residential context and in terms of a transitional response between 90m in the consolidated central city and the surrounding lower height zones.

5.1.8. The study recommends that Scenario 3 is the most suitable approach in order to support the legibility of the city centre. It provides an appropriate transition in terms of urban form between the rest of the city centre and the surrounding uses and their respective built form provisions.

Cathedral Square

5.1.9. For the detailed reasons set out below, a lower height limit should be applied as an existing qualifying matter around Cathedral Square in view of the significant impact of shading on the square, which would otherwise be enabled. This reflects Cathedral Square's role as central open space which needs to continue to offer high quality amenity values such that it can continue to provide an inviting, high quality civic space which encourages socialisation and dwell time.

5.1.10. An assessment has reviewed the point at which the scale of development becomes inappropriate in terms of sunlight loss to the Square. At this threshold, the negative impacts of shading outweigh the benefits attributable to higher height limits for all sites adjacent to the square (factoring in all of the necessary considerations under sections 32 and 77O to

[12] Victoria Street Lower Height Modelling, CCC, July 2022

77R). Technical assessments were undertaken to assess the merits (or otherwise) of different height scenarios, as explained below.

Cathedral Square Scenario Testing

5.1.11. Given the NPS UD requirement for maximised heights, most of the built form scenarios employ lower heights only for sites directly adjacent to Cathedral Square. In some cases, adjacent buildings have been modelled, but it was mostly found that there was limited extra shading caused by taller buildings near the Square. This means that the analysis demonstrates that for the most part it is only necessary to reduce the heights of some buildings next to the Square to manage the issues of shading.

Scenarios tested were as follows:

1. 30m (next to the Square) and 60m (for other "key" sites close to the square)
2. All 90m (as per the Height Limit for the City Centre zone)
3. 45m (next to the Square) 90m (key sites close by)
4. 60m (next to the Square) 90m (key sites close by)

5.1.12. The results of the scenario modelling indicated that, in order to manage the impact on sunlight on the Square and enable the amenity values of the Square as a focal civic heart of the City to continue whilst more generally allowing for tall buildings, it is recommended that scenario 3 is implemented. This would limit some adjacent buildings to 45m and allow key sites to be developed at 90m (the height limit for the wider City Centre zone).

5.1.13. There is some potential for additional shading from some key sites if the height limit is 90m, but this is likely to be minimal and would have a small impact at certain times of the day and year.

5.1.14. Those sites considered adjacent for the purposes of the modelling are:

- 14, 26, 28, 31, 32, 33, 50, 51 and 52 Cathedral Square
- 170 Oxford Terrace
- 763 Colombo Street
- 105 Worcester Street

6. Impact of Lower Height Limits on Development Capacity

6.1.1. A summary table of the impact of the lower height limits in both Victoria Street and Cathedral Square is outlined below. The full report is attached as Appendix 4

Heights	Floor Area Ratio (FAR)	Capacity (sqm)	Increase in Capacity (%) Over BAU	'Lost' Capacity (Reduction in sqm as a consequence of not taking a 90m height limit)
Victoria Street				
Status Quo	6.5	444,866	N/A	
45m	9.122	624,305	40.3%	257,059
60m	10.588	724,637	62.9%	156,726
90m	12.878	881,363	98.1%	N/A
Cathedral Square				
Status Quo	6.5	228,039	N/A	
45m	9.122	320,026	40.3%	131,771
60m	10.588	371,458	62.9%	80,340
90m	12.878	451,797	98.1%	N/A
Rest of the City Centre Zone 90m	12.878	5,968,829	98.1%	N/A

Status Quo – interpreted as business as usual (BAU). 21m height limit plus recession plane rules.
Nb – development capacity figures have been identified as floor space rather than dwellings as the space could/is likely to be used for variety of activities e.g. commercial, retail, office, hotel.

6.1.2. An assessment of the development capacity for the Victoria Street precinct and Cathedral Square was undertaken using a generalised development model based on actual land areas in these locations. An average Floor Area Ratio (FAR) was generated for each of the heights and this was then applied to these locations based on actual site areas.

6.1.3. The assessment indicates that under the current provisions (status quo) just under 445,000sqm of floor area could be developed in Victoria Street and 228,000sqm in Cathedral Square. If the height is increased to 45m a further 40.3% of floor area is possible (over and above that possible under the current rules) and if the height limit was increased to 90m (as per the rest of the City Centre zone) an additional 98% would be possible.

6.1.4. The 'lost' development capacity resulting from taking a 45m height limit approach in both Victoria Street and Cathedral Square is a total of 388,830sqm. Whilst this is clearly a significant amount of floor area, it is useful to note that the rest of the City Centre zone is capable of providing 5,968,829sqm. As such, this 'loss of capacity' in Victoria Street and Cathedral Square is less than 7% of that which can be developed in the rest of the City Centre zone. Reducing the height limit to 60m would result in a 4% loss of development capacity.

6.1.5. For contextual purposes it is also interesting to reference some recent work undertaken in relation to the Central City in terms of business capacity assessment.[13] This study identified that there is sufficient capacity in either vacant buildings or floors of buildings to capture new demand to 2051. The same situation exists in terms of land supply and demand. This study was based on *existing* planning provisions i.e. the 'status quo' scenario. Based on this study, it is evident that all modelled scenarios are capable of providing supply greatly in excess of that demanded for at least 30 years.

6.1.6. Lincoln University has identified that there is demand for in the region of 170,000sqm of office floor space over the next 30 years. Given that 'buildings of height' will only be for offices, hotels or residential, there is therefore a limited level of demand (offices and hotels) and a lack of take up / demand for residential towers. The REINZ 2021 report[14] notes that only 1% of new builds in the City were apartments and whilst trends indicate that this figure may increase gradually, it is unlikely that demand for high tower apartments in Christchurch will be forthcoming for many years. Consequently, the impact of reduced height in Victoria Street and Cathedral Square and the corresponding impact on supply is likely to be marginal.

[13] Christchurch Central City: Land Demand Estimate and Business Capacity Assessment, April 2022, Lincoln University

[14] REINZ, Christchurch Housing Market Demand, April 2021

7. Reasonably practicable options for provisions

Victoria Street Precinct Options Evaluation

7.1.1. The following options should be considered:

Option 1: Status Quo

This would involve retaining the current provisions around the Victoria Street precinct and applying this suite of provisions in order to reflect the characteristics of the precinct that make it a qualifying matter.

Option 2: Do not apply lower height limits

This would mean removing the concept of any applicability of lower height provisions along the Victoria Street precinct. As such, the area would be subject to the same provisions as the rest of the City Centre Zone.

Option 3: Proposed change with lower height limit

This would reflect the scenario of a 45m height limit along the Victoria Street precinct (which the assessment has identified as the preferred option).

Option 4: Proposed change with alternative lower height limit

This would reflect the option to enable development up to 60m along the Victoria Street precinct. This is a lower height limit than that anticipated in the wider City Centre zone but higher than the 45m limit also assessed.

Evaluation of options for provisions – Victoria Square

Options	Efficiency	Effectiveness
Option 1 – Status Quo Retain the current provisions around the Victoria Street precinct and apply this suite of provisions as a qualifying matter.	Costs • The development capacity of buildings in the Victoria Street precinct is lower than that for buildings in the remaining city centre zone. • The economic benefits of providing for a greater development capacity within the city centre zone is compromised and may affect the wider economic growth of the city as a whole. • The current height limit is lower than that which will be enabled in adjacent high-density residential areas that will lead to an incongruous and illegible urban form.	This option is not effective in meeting the NPS UD in terms of providing for as much development capacity as possible within the city centre. It does not meet the direction of Policy 3 of the NPS UD.
	Benefits • The lower height limits reflect the fringe nature of this area of the city centre zone and would support consolidation of higher buildings in the rest of the city centre. • This approach supports Policy 15.2.4.1 (Scale and Form of development), 15.2.4.2 (Design of New Development) and 15.2.6.3 (Amenity).	
	Risk of acting/not acting This approach does not draw upon specific technical work that has been undertaken to better understand how development capacity can be increased without compromising the well-functioning nature of the environment.	
Option 2– Do not apply lower height limits Removing the concept of lower height provisions along the Victoria Street precinct. As	Costs • The shape of the Victoria Street precinct (a ribbon like projection from the rest of the city centre zone) means that very tall towers would be enabled in this location. These would be visually significant and incongruous with the rest	Implements the NPS UD in terms of providing significant development capacity in the city centre however, falls short in terms of meeting the objective about providing a well-functioning urban environment.

such, the area would be subject to the same provisions as the City Centre Zone.	of the consolidated City Centre zone (a more compact, block-like area). • The urban form resultant from this Option would not align with the strategic objective on Urban Growth, Form and Design as well as other objectives. The resultant built form would have a less consolidated, weakened cluster/mass of form around the core central city. • The impact of tall tower developments on adjacent/surrounding residential uses (which would themselves be limited to 10 or 6 storeys) would be significant. • Applying the very high height limits within the Victoria Street precinct would not fit well with the concept of a consolidated, legible city centre in terms of urban form. • Demand for taller buildings within the core City Centre (defined in various planning documents) may be compromised by the ability to attain equivalent development forms in the Victoria Street precinct. • This approach does not provide good support to Policy 15.2.4.1 (Scale and Form of development), 15.2.4.2 (Design of New Development) and 15.2.6.3 (Amenity).	
	Benefits • The development capacity of the City Centre zone – including the Victoria St precinct – is increased given the greater height limits and therefore increased opportunity for the development of additional floor space. • The Victoria Street precinct area has a slightly different appeal to that of the core city centre and therefore provides an additional offer to the development market for higher density developments within the central city.	
	Risk of acting / not acting This approach fails to build on the documented understanding (historical planning provisions) that the Victoria Street precinct is suitable for a different urban form than that in the rest of the city centre. This would fail to respect the acknowledged	

	understanding of a well-functioning urban environment and urban form in this location.	
Option 3 – Proposed change with lower height limit (45m) Reflect a 45m height limit along Victoria Street.	Costs • Restricts development capacity within the city centre zone from the proposed maximum (as Victoria Street could theoretically assume 90m). • Compromises the development rights of owners along Victoria Street land with potential for reductions in land/property values (although this could be countered by the realisation of additional values in areas of the Square where sunlight will be retained and thereon activities in those buildings are more economically viable e.g. cafes with outdoor seating). • Reduces the scope for economic growth in the Victoria Street precinct that may affect the economic growth of the city centre as a whole.	This is the most effective option in terms of meeting the NPS UD directive to provide as much development capacity as possible in the city centre but also provides for a well-functioning urban environment, while appropriately reflecting the qualifying matter. This reflects the fact that the geography of Victoria Street is inconsistent with the concept of a consolidated city centre where building heights are maximised and there is a compact but significant (in terms of heights) urban form. Lower height limits in this area more effectively address the context of other uses in this area (adjacent residential zoning) and the legibility of a core city centre area where the highest heights are enabled and there is a transition of heights as the distance from the core increases. The impact of reduced development capacity is approximately only 4.3% and, on balance, this reduction is not considered an issue given the significant provision across the rest of the City Centre zone. It is considered that, on balance, the merits of enabling a consolidated urban form for the City Centre and supporting a well-functioning urban environment in relation to the relationship of Victoria Street with the adjacent residential area, outweighs the small loss of development capacity in this area.
	Benefits • Better reflects that fact that the Victoria Street precinct is a fringe area of the core city centre. This has long been established and documented through planning documents and earlier planning provisions (reduced height enablement in this area). • The lower height limit will have an improved relationship with adjacent residential development in terms of height/scale and legibility of urban form. • The urban form outcomes better reflect the concept of a consolidated city centre core where massing of height is centralised rather than spilling out into finger like projections (as would be the case for the Victoria Street precinct). • This approach supports Policy 15.2.4.1 (Scale and Form of development), 15.2.4.2 (Design of New Development) and 15.2.6.3 (Amenity).	
	Risk of acting / not acting	

	This is the most suitable approach as concluded by the technical work undertaken. There may be other options (potentially a more bespoke mix of heights along the Victoria Street precinct) which could provide a better balance in terms of increased the development capacity in this area whilst also retaining a well-functioning urban environment.	
Option 4– Proposed change with alternative lower height limit (60m) Reflect the option to enable development up to 60m along the Victoria Street precinct. This is a lower height limit than that anticipated in the wider City Centre zone but higher than the preferred 45m limit.	Costs • Reduces the development capacity within the city centre zone (though not as much as in Option 3). • Compromises the development rights of owners of city centre zoned land (though to a lesser degree than in Option 3). • Reduces the scope for economic growth in Victoria Street that may affect the economic growth of the city centre as a whole.	This option is somewhat effective at balancing the need to provide as much development capacity as possible in the city centre but also to meet the objective of a well-functioning urban environment. The lower height limit assists in enabling identification of the city centre as the core where built form is maximised and the urban form pattern is legible in terms of the transition to the outer city centre areas. 60m is however still a very high height limit and the difference between 60m and the central city height limit (90m) is not particularly significant in terms of making a clear distinction in urban form terms. The impact of reduced development capacity (60m rather than 90m) is approximately 2.6%. This reduction is considered minimal given the significant development capacity provision across the rest of the City Centre zone. Overall however, the merits of a reduced 'loss of development capacity' (as compared to the 4.3% at 45m) does not compensate for the extra negative impacts on the urban form (prominence of 60m and impact on consolidation) and the surrounding residential area (60m tower will have a higher negative impact than 45m).
	Benefits • Better reflects that fact that the Victoria Street precinct is a fringe area of the core city centre although to a lesser degree than achievable in Option 3. This has long been established and documented through planning documents and earlier planning provisions (reduced height enablement in this area). • The slightly lower height limit will have an improved relationship with adjacent residential development in terms of height/scale and legibility of urban form. • The urban form outcomes better reflect the concept of a consolidated city centre core where massing of height is centralised rather than spilling out into finger like projections (as would be the case for the Victoria Street precinct). • This approach supports Policy 15.2.4.1 (Scale and Form of development), 15.2.4.2 (Design of New Development) and 15.2.6.3 (Amenity).	
	Risk of acting / not acting	

	This is one alternative option (as concluded by the brief technical work undertaken) however there may be other heights which should be considered. These other options (potentially a more bespoke mix of heights along the Victoria Street precinct) could provide a better balance in terms of increased development capacity and the retention of a well-functioning urban environment.	

Cathedral Square Options Evaluation

7.1.2. The following options should be considered:

Option 1: Status Quo

This would involve retaining the current provisions around Cathedral Square and applying this suite of provisions acknowledging the values of the area that make it an existing qualifying matter.

Option 2: Do not apply lower height limits

This would mean removing the concept of any applicability of lower height provisions in locations adjacent to Cathedral Square. As such, the area would be subject to the same provisions as the City Centre zone.

Options 3: Proposed change with lower height limit

This would reflect a 45m height limit for some sites adjacent to Cathedral Square and 90m for other key sites in this area (90m is the height limit for the City Centre zone in general).

Option 4: Proposed change with alternative lower height limit

This would reflect the option to enable development up to 60m adjacent to Cathedral Square. This is a lower height limit than that anticipated in the wider City Centre zone but higher than the preferred 45m limit.

Evaluation of options for provisions – Cathedral Square

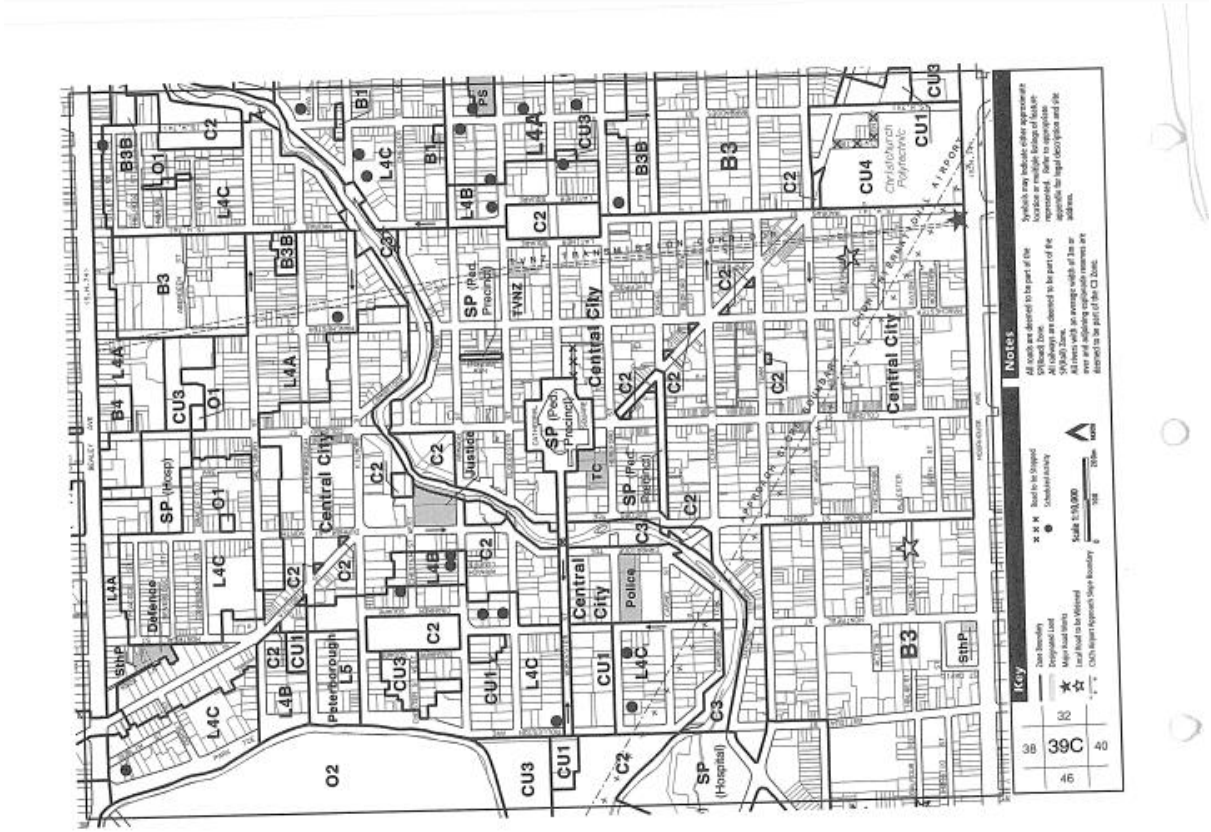
Options	Efficiency	Effectiveness
Option 1 – Status Quo Retain the current District Plan provisions around Cathedral Square.	Costs • Restricts development opportunities on sites around the Square. • Reduces the scope for economic growth because of reduced additional development capacity within the City Centre.	Does not implement the NPS UD as cannot be considered to be enabling 'as much development capacity as possible in order to maximise the benefits of intensification'.
	Benefits • Ensures the current and anticipated future use and value of the Square, as a key civic space will not be compromised by shading. • Respects the historical value of Cathedral Square as a civic heart and physical centre of the city. • Aligns well with the NPS UD objective re: well-functioning urban environment in terms of retaining a civic space that provides for social and cultural well-being. • Aligns with Recovery Plan (CCRP) assertions re: role of lower buildings in relation to community wishes and economics of the city centre. • This approach supports Policy 15.2.4.1 (Scale and Form of development), 15.2.4.2 (Design of New Development) and 15.2.6.3 (Amenity).	
	Risk of acting / not acting This approach does not take into account the overall direction of the NPS UD in terms of increasing development capacity within the city centre and is therefore not credible.	
Option 2– Do not apply lower height limits The area is subject to the same provisions as the City Centre zone.	Costs • Compromises the social and economic values attributable to retaining a high quality civic space (Cathedral Square) that receives enough sunlight to be considered welcoming, useable for gatherings year round and an attractive focal point for the city as a whole.	Implements the NPS UD in terms of providing significant development capacity in the city centre however, falls short in terms of meeting the objective about providing a well-functioning urban environment. The long established value of Cathedral Square as a significant historical, focal civic

	• Those buildings sited adjacent to Cathedral Square offer locational advantages because of the values that Cathedral Square offers (high quality civic space with important heritage context and a focal point for the City Centre as a whole). If the 'value' of the Square is reduced by virtue of becoming a less utilised space (shaded, less popular for gatherings etc.), the buildings adjacent to the Square may also have a lower economic value. • This approach does not provide good support to Policy 15.2.4.1 (Scale and Form of development), 15.2.4.2 (Design of New Development) and 15.2.6.3 (Amenity).	space for the central city will be compromised by a loss of sunlight into the square.
	Benefits • Enables a greater capacity of development on the sites adjacent to Cathedral Square thereby increasing the overall capacity of development within the City Centre. • Provides a uniform approach to sites within the City Centre.	
	Risk of acting /not acting This approach fails to build on the documented understanding (including historical planning provisions) relating to Cathedral Square and its use as a focal civic space and the importance of retaining sunlight into the square. This approach would therefore fail to respect the acknowledged understanding of a well-functioning urban environment in this location, particularly the social and cultural values currently offered by this square.	
Option 3 – Proposed change with lower height limit (45m) Reflects the preferred scenario option outlined in this report, namely a 45m height limit for some sites adjacent to Cathedral Square and 90m for other key sites in this area.	Costs • Reduces development capacity on some sites adjacent to Cathedral Square. • Potential reduction in property values for those owners subject to lower height limits (although this could be countered by the realisation of additional values in areas of the Square where sunlight will be retained and thereon activities in those buildings are more economically viable e.g. cafes with outdoor seating)	This approach is the most effective in terms of meeting the NPS objectives of providing for a well-functioning urban environment that provides for people and communities social, economic and cultural well-being. It balances the need to provide for as much development capacity as possible in the city centre by reducing the height limit only on those buildings

(90m is the height limit for the City Centre zone in general).	• Provides a two-tiered approach to height enablement that could be seen to provide owners of sites not adjacent to the Square with development (economic) advantages given their higher enablement. Benefits • Retains sunlight admission to the Square such that the Square's long standing key role, as an important civic space within the city, is not unduly compromised. • Respects the historical value of Cathedral Square as a civic heart and physical centre of the city. • Provides a considered bespoke approach that recognises that there are some buildings around the Square that have less impact on sunlight admission (into the Square) and therefore enables a higher level of development capacity at those sites. • This approach provides good support to Policy 15.2.4.1 (Scale and Form of development), 15.2.4.2 (Design of New Development) and 15.2.6.3 (Amenity). Risk of acting / not acting Only 45m and 60m lower height limits were modelled. Additional assessment may have determined an even more bespoke approach to height limits may have provided for the optimal balance in terms of additional development capacity: retention of sunlight admission into the Square.	that impact upon sunlight admission into Cathedral Square. As such, the balance between retaining the Square's value as an important civic space (meeting social and cultural wellbeing objectives) and the need to enable increased development capacity is met. The development capacity loss is minimal (2.2% of the overall capacity enabled in the City Centre zone) and the merits of maintaining a highly useable, valued civic space are considered greater than the loss of a small amount of development capacity.
Option 4– Proposed change with alternative lower height limit (60m) Enable development up to 60m adjacent to Cathedral Square. This is a lower height limit than that anticipated in the wider City Centre zone but	Costs • Reduced development capacity on some sites adjacent to Cathedral Square (but less reduction than at 45m) • Potential reduction in property values for those owners of sites subject the height limits (though again, this could be countered by the realisation of additional values in areas of the Square where sunlight will be retained and thereon activities in those buildings are more economically viable e.g. cafes with outdoor seating).	The approach is not particularly effective in terms of the objective of retaining sunlight admission into Cathedral Square. It will enable more sunlight into the Square as compared to enabling 90m buildings but there will still be some loss (of sunlight) and as such the value of Cathedral Square as an important and desirable civic space in which the community want to gather, will be compromised.

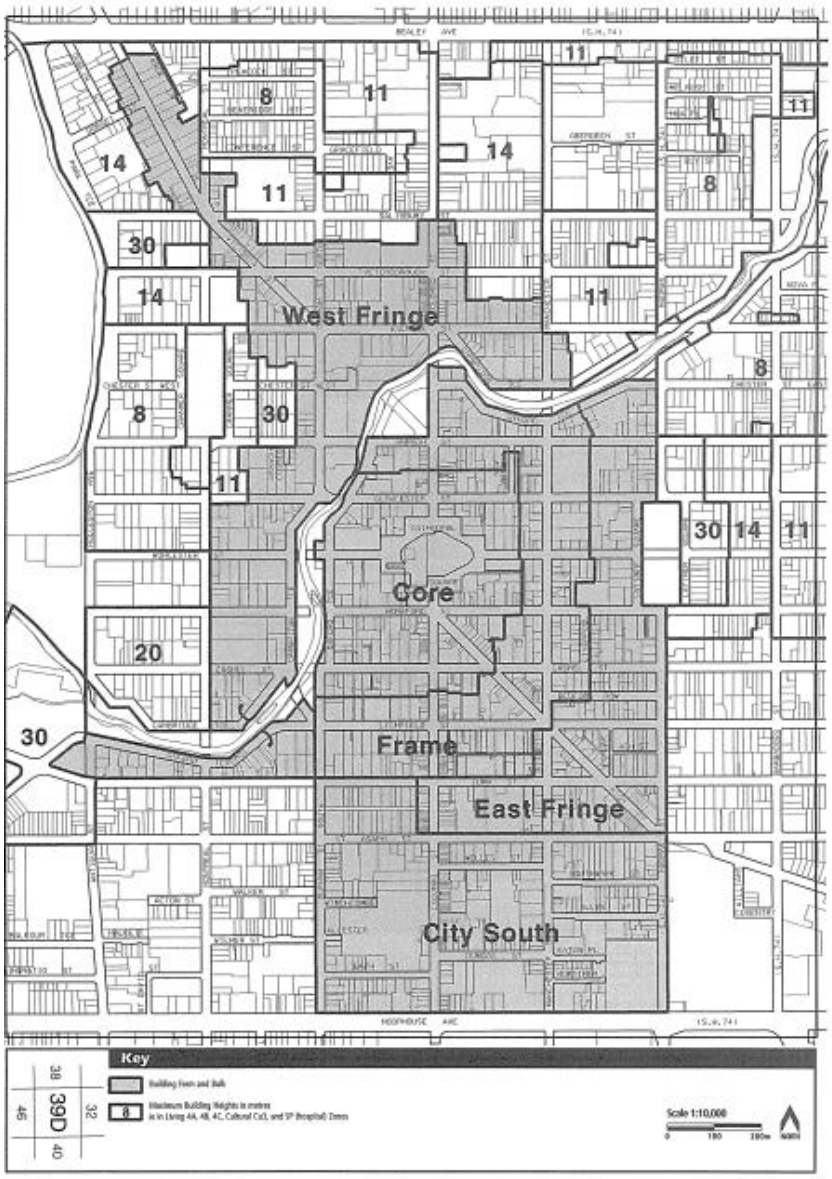
higher than the preferred 45m limit.	• Provides a two-tiered approach to height enablement that could be seen to provide owners of sites not adjacent to the Square with development (economic) advantages given their higher enablement.	The development capacity loss is minimal under this option (1.3% of the overall capacity enabled in the City Centre zone) and obviously lower than that when height is reduced to 45m. The negative impacts upon the shading in the Square (the greater impacts at 60m as compared to 45m) are however considered of more weighting than the benefits of a reduced impact on the overall development capacity. In summary therefore, this approach is therefore not well aligned to the NPS UD objective of creating a well-functioning urban environment.
	Benefits • Retains some sunlight admission to the Square such that the Square's long standing key role as an important civic space within the city is not compromised as much as it would be as a result of shading from 90m high buildings. • Provides a bespoke approach that recognises that there are some buildings around the Square which have less impact on sunlight admission (into the Square) and therefore enables a higher level of development capacity at those sites though the approach has less benefit than that applied in Option 3. • This approach provides some support to Policy 15.2.4.1 (Scale and Form of development), 15.2.4.2 (Design of New Development) and 15.2.6.3 (Amenity).	
	Risk of acting/not acting Only 45m and 60m lower height limits were modelled. Additional assessment may have determined a more bespoke approach to height limits may have provided for the optimal balance in terms of additional development capacity: retention of sunlight admission into the Square. This option fails to fully recognise the values currently offered by the square (socially and culturally) given the additional sunlight loss (and thereon negative effects on the use of the square) that this option would enable.	

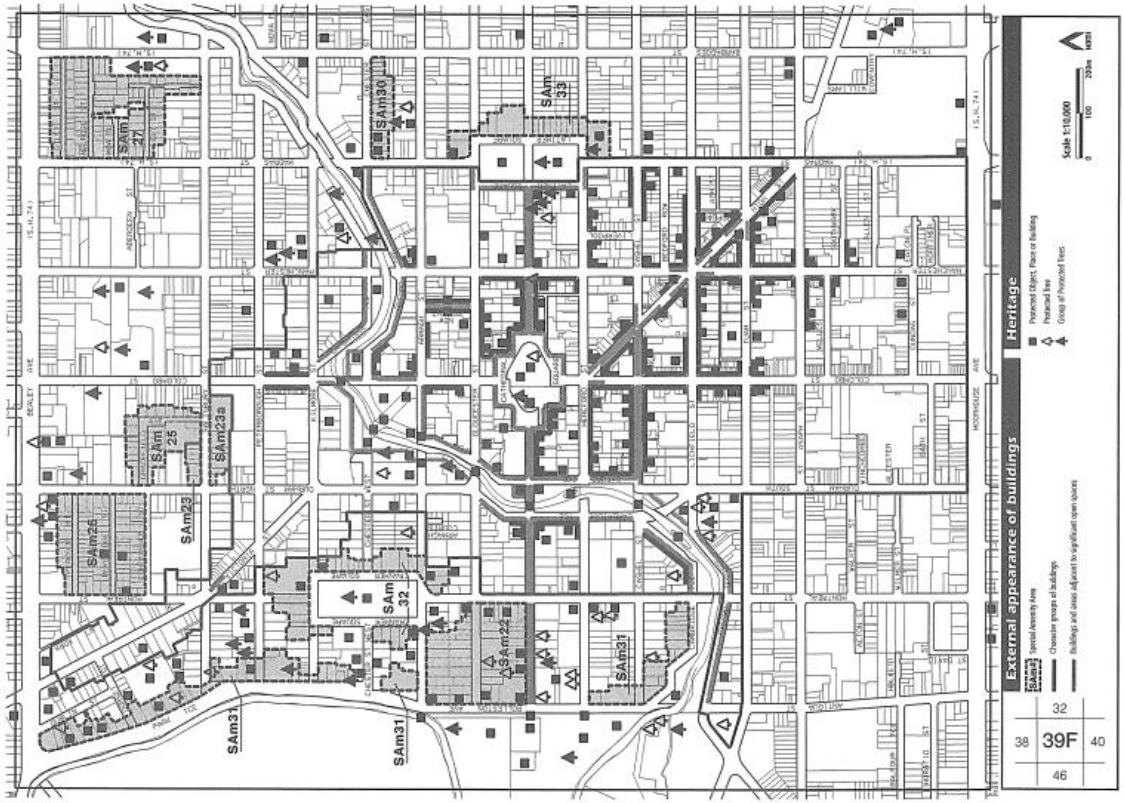
Appendix 1: City Plan & Notified District Plan 1995 – Map extracts and rules



Lower Height Limits: Victoria Street & Cathedral Square – Qualifying Matters

Lower Height Limits: Victoria Street & Cathedral Square – Qualifying Matters





2.2.3 Sunlight admission to important pedestrian areas

(a) Cathedral Square: No building shall be constructed or extended so that it casts a shadow on the ground at 12 noon (Local mean time) on 22 June beyond the lines AB, CD and EF as shown in Part 3, Appendix 1. The angle of recession shall be 23° measured in a north/ south plane.

Lower Height Limits: Victoria Street & Cathedral Square – Qualifying Matters

6. Reasons for rules

6.1 Central City Zone

6.1.1 Street scene and containment

These interrelated rules have four main elements, including the setback of buildings from the street, minimum facade height, setback of buildings adjoining special character areas, and outdoor storage.

It is intended that the street setback reflect the dominance of building scale in the central city with the requirement that buildings within the Core and Frame be erected up to the street frontage along the full length of sites. An exception is made for Colombo Street, where because of the volume of pedestrian movement as Christchurch's main pedestrian thoroughfare, a provision of a setback of 2.1m has been made to allow for paving and greater capacity for pedestrian movement.

Provision for building up to the street frontage highlights the city's grid pattern and also reflects the existing character of the central city as the urban focus for Christchurch and this is also required on a number of other streets, although there are some exceptions to these as indicated below.

The requirement for buildings to be built up to the street along part of Colombo Street reflects the existing character of buildings in this area, recognising that a number are listed buildings of heritage value.

On sites in the City South area fronting Durham, Manchester, Madras, St Asaph, Tuam Streets, and Moorhouse Avenue, a 6 metre setback is provided to allow development of a boulevard atmosphere in these streets, reflecting their major traffic functions. This will also enable greater opportunity to provide for street landscaping, thus softening the impacts of buildings in these outlying areas of the central city.

Provision is made for a 3 metre setback on the eastern side of Manchester Street to enhance the quality of this street as a major city shopping street, allowing provision for additional street trees and a greater width for pedestrian passage on the eastern side of the street which is more exposed to sunlight.

The West Fringe has a 4.5 metre setback specified in order to maintain a more open and landscaped environment between the central city and the residential/cultural zones in the west, and because retailing is not a significant activity.

The minimum facade heights reinforce other rules such as those relating to building height. The reason for these rules is to ensure that in key streets relating to the Core area of the central city, in City Mall, and the Frame, in the East Fringe including Manchester, High and Lichfield Streets, and Colombo Street in the Fringe, have minimum heights which maintain the dominant building character in these streets and with the setback requirements provides visual containment of the streetscape. These facade rules are expected to maintain urban scale in these streets and the maintenance of a strong emphasis on a vibrant built environment. The facade height limit in the City Mall is formulated to ensure consistency with the sunlight admission rule.

Complementing these rules however, is a requirement that high rise buildings adjoining special character areas take account of a need for a setback in the height of the building where they rise above the height of the street facade of significant heritage buildings. This setback has been incorporated as a rule to ensure that significant heritage buildings, or groups of buildings, are not unreasonably dominated by large adjoining buildings which may be of an incompatible or unsympathetic design in terms of their scale, materials and facade treatment.

Where outdoor storage areas in the central city are likely to be physically visible from the street, provision is made for screening by landscaping or fencing in order to remove any visual detraction.

The incorporation of a recession plane angle in the Plan is intended to ensure that a sense of openness and a reasonable degree of sunlight admission to streets is maintained, whilst still allowing for large scale inner city buildings. On Armagh Street, in the area between Oxford Terrace and Colombo Street, the recession plane allows for taller buildings on the street frontage due to the open space of Victoria Square immediately to the north and reinforces the grid pattern along this boundary.

Where sites or parts of sites are used in a way that creates large open areas, such as carparking, tree planting will soften the visual impact of such areas.

6.1.2 Sunlight and outlook for neighbours

A rule has been incorporated in the Plan to protect living zone properties on the boundary of the Central City Zone from overshadowing by tall buildings. This could result in the adjoining living zone environment becoming an unattractive place to live, risking erosion of remaining housing areas in the central city.

Complementing this is a setback requirement from the living zone boundary for such buildings.

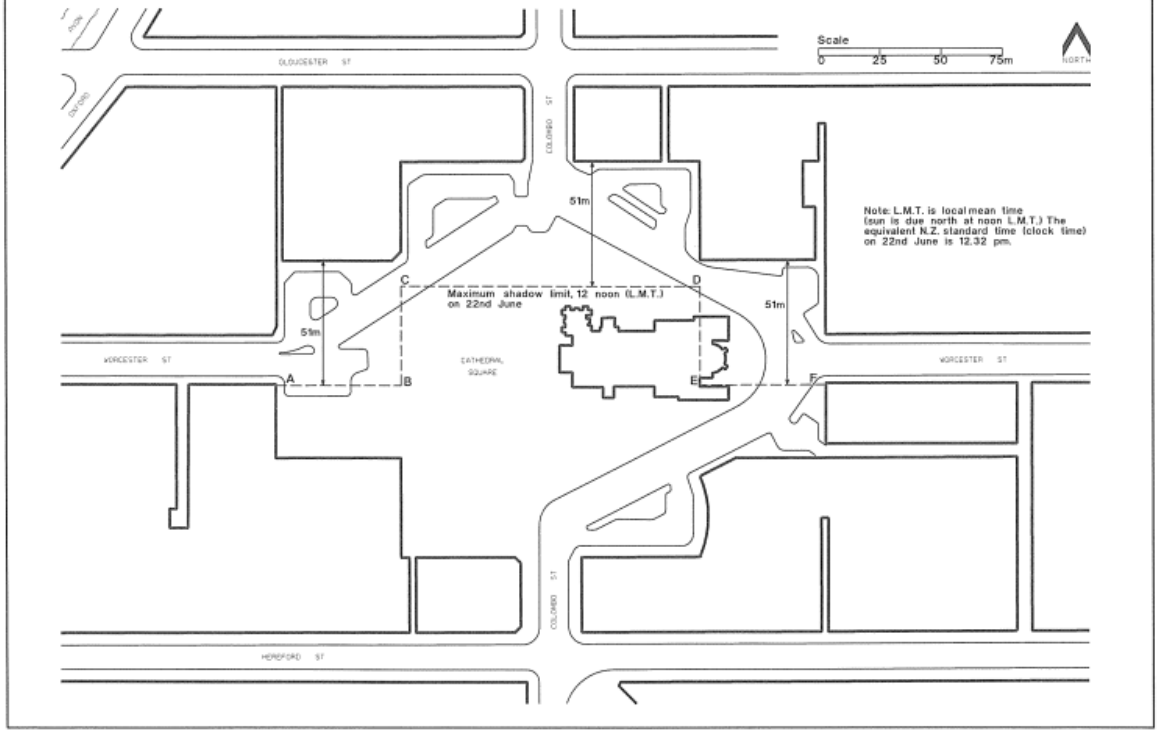
6.1.3 Sunlight admission to important pedestrian areas

The Plan has identified Cathedral Square and City Mall as significant open spaces in the city. Cathedral Square is the physical focal point of the city and such is a very important public space to the entire city. Similarly, City Mall is the major pedestrian thoroughfare in the central city. Both of these areas are intensively used for pedestrian purposes.

The reason for rules relating to recession planes controlling buildings in these areas, is to ensure that these areas, and the activities within them, are able to enjoy a sufficient amount of sunlight admission. This is necessary to ensure that the spaces function successfully and are attractive for public use. The rules have been written in such a way as to ensure that the rule is a reasonable proxy to the orientation of the public spaces with regard to the angles of the sun at critical times of the year.

Lower Height Limits: Victoria Street & Cathedral Square – Qualifying Matters

Appendix 1. Central City - Cathedral Square sunlight admission to important pedestrian areas



24 June 1995 3/33

Amend Clause 13.4 in Volume 3 Part 8 as follows:

13.4 Special Purpose (Pedestrian Precincts) Zone

This zone has been specifically identified as distinct from the road zone for two specific reasons:

- it contains **an** open space~~s~~ of major importance to ~~**the city**~~ **New Brighton** and its identity;
- it contains land which although "legal road" is dominated by pedestrian movements, rather than vehicular traffic.

~~**The zone also includes Christchurch Cathedral and its surrounds which is private land.**~~

(...)

Land in the zone may be subject to occasional pressures for buildings, and accordingly a rule has been incorporated to enable any buildings (except small structures) to be subject to public scrutiny through a resource consent process. ~~**This also complements rules in the plan relating to special amenity areas, which have rules which specifically relate to building design and siting adjoining parts of the Special Purpose (Pedestrian Precincts) Zone.**~~ While the Council exercises "ownership" control over ~~**most**~~ **the** land in the zone, it is important that any buildings, albeit for specific public use, be carefully designed and located to enhance **the zone**. ~~**the amenities of these vitally important city spaces and public access to them.**~~

Appendix 2: Victoria Street Urban Form – Building Height Study

This paper considers the overall built form of Victoria Street and its surrounds, and related visual and physical impacts of building height scenarios, in the context of the central city, and more specifically the City Centre Zone.

The National Policy Statement on Urban Development (NPS-UD) requires Council to enable development capacity via increased height to maximise intensification benefits within the Central City, which in the Ōtautahi Christchurch context is interpreted as the City Centre Zone. In order to maximise intensification benefits the Council's preferred height limit for the Central City Business District is 90m. As noted, Victoria Street is also zoned City Centre Zone, but sits outside the existing Central City Core, as identified in planning map (Figure 1).

Victoria Street provides the key bus, cycle and pedestrian link from the central city to the north-west. Properties adjacent to Victoria Street are predominantly zoned City Centre, with a focus on retail and commercial activity, particularly at the ground floor, but with the opportunity for a mix of uses including residential activity above. The City Centre Zone in this location is in essence a ribbon of commercial zoning within a wider residential context, with 20m and 32m height limits proposed through Plan Change 14. Hagley Park, the premier park for the city is located to the west of Victoria Street.

In respect to Victoria Street City Centre zoning, a key issue is the extent to which a higher height limit will affect both the city form, and adjacent residential development with regard to visual dominance effects.

For this reason, the modelling scenarios employ lower heights only for buildings along Victoria Street with the rest of the City Centre Zone modelled to a maximum height of 90m. The analysis focuses resultant form of Victoria Street from the extent of which is noted in the map below (Figure1). The adjacent High Density Residential and Central City Mixed Use Zones are shown indicated at the 32m maximum height across the scenarios in this study.

Assumptions and scenarios:

The focus of the study was to assess urban form and the impacts of these on the wider central city context, and on the adjacent residential environment, in respect to policy direction and including:

- Consolidated and legible urban form
- Increased commercial and residential density
- Primacy of the central city business district to the city, including concentration of activity.

In addition, the following matters were also considered given the extent of rebuild and recovery already undertaken along Victoria Street:

- The effect of Victoria Street buildings on the surrounding residential areas
- Extent and speed of redevelopment to higher height buildings given the limited number of redevelopment sites available
- Impact of a limited number of tall buildings on Victoria Street in the short and medium term.

Other amenity effects such as the pedestrian experience at street level were discounted as these matters were addressed in association with central city built form standards, including street wall height, and are equally applicable to Victoria Street.

The scenarios tested were to test a graduation in heights, while providing for increased capacity above the current baseline of 17m for the Central City Business Zone in this location. In addition, they provided a step up from adjacent proposed residential heights to contribute to central city legibility.

It is noted that it is likely that should greater building heights be established within Victoria Street, then it is likely that this would draw or extent activity outside of the Central City. However, it is noted that this is not within the scope of this study but is discussed in more detail within the Section 32 Economics report, Property Economics.

Scenarios tested

Scenarios tested were as follows:

4. 90m for the City Centre zone and, 32m for the surrounding Residential and Mixed Use Zones.
5. 60m for Victoria Street precinct, others consistent with Scenario 1.
6. 45m for Victoria Street precinct, others consistent with Scenario 1.

Several viewpoints are taken to inform the following discussion and recommendations.

The study considered the impact that the different scenarios have from an urban form perspective:

1. The impact of Victoria Street's built form on the consolidation of central city form and activities.
2. The effect of Victoria Street buildings on the surrounding residential areas.
3. That the progress of development may be quite slow and that tall buildings on Victoria Street may be isolated in the short and medium term
4. Built form impact on legibility and image of the central city.

Development capacity

The study considered two-development capacity in each height scenario:

1. Realistic capacity – identified sites more likely to be redeveloped within the next ten years on the basis of the following exclusions:
    - Buildings consented or built after 2011, three or more storeys in height
    - Buildings built prior 2011, with four or more storeys height, that are in good condition.
    - Buildings with specific purpose (other than office and retail activity) and status are kept include Christchurch Casino and scheduled historic heritage.
    - Amalgamated sites under the same ownership to reflect the realistic redevelopment opportunities.
2. High capacity – all sites available are redeveloped, other than scheduled historic heritage.

Built form standards applied

The proposed City Centre built form standards were applied to Victoria Street, as summarised below:

- Street wall height up to 21m,
- Front boundary setback of 45-degree for buildings over 21m, up to 28m.
- Tower above podium has a minimum dimension of 10m and a maximum dimension of 20m, with a minimum tower separation of 12m on one site.
- Internal boundary setback of 5m for towers.
- For a realistic outcome, the modelling has not explored the 'maximum' outcome where the rule sets are tested to the highest extend.

For the purpose of differentiating Victoria Street form the City Centre Zone for the purposes of this study, the term Central City refers to the area noted below and the Victoria Street area is referred as Victoria Street Precinct.

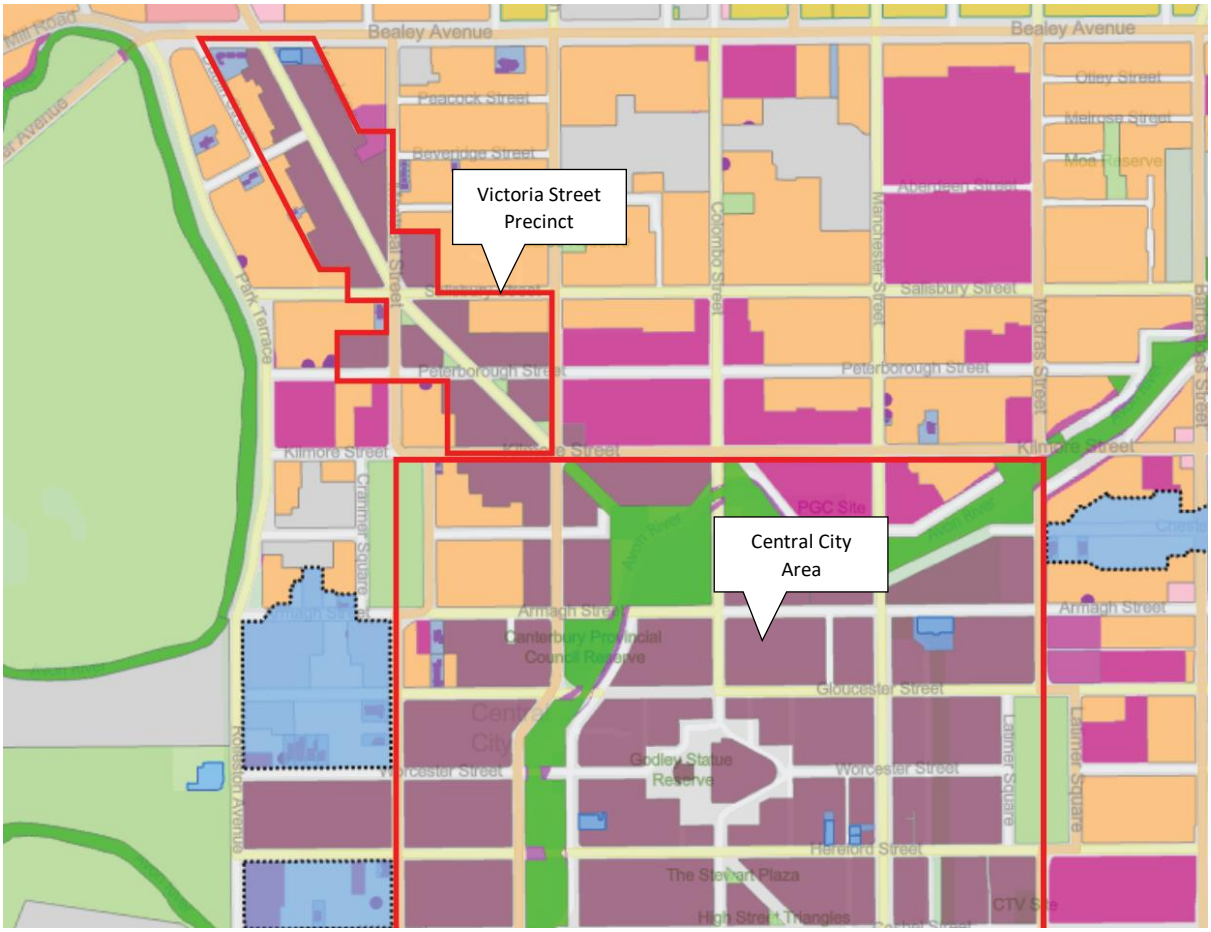


Figure 1: Indicative catchments for the purpose of this study.

Summary of Study Findings:

Scenario 1 – The Central City form becomes stretched towards the north-western direction, the central core loses legibility. Buildings on Victoria Street at 90m shows strong contrast with the surroundings, a strong level of dominance over the adjacent residential setting.

Scenario 2 –Victoria Street at 60m height shows differentiation with the central city core that supports the consolidation and benefits legibility of the city centre. A considerable amount of contrast with the adjacent residential areas.

Scenario 3 – Victoria Street at 45m height is at an appropriate proportion to its surrounding residential areas. It further supports the consolidation of the central core area and legibility within the city centre.

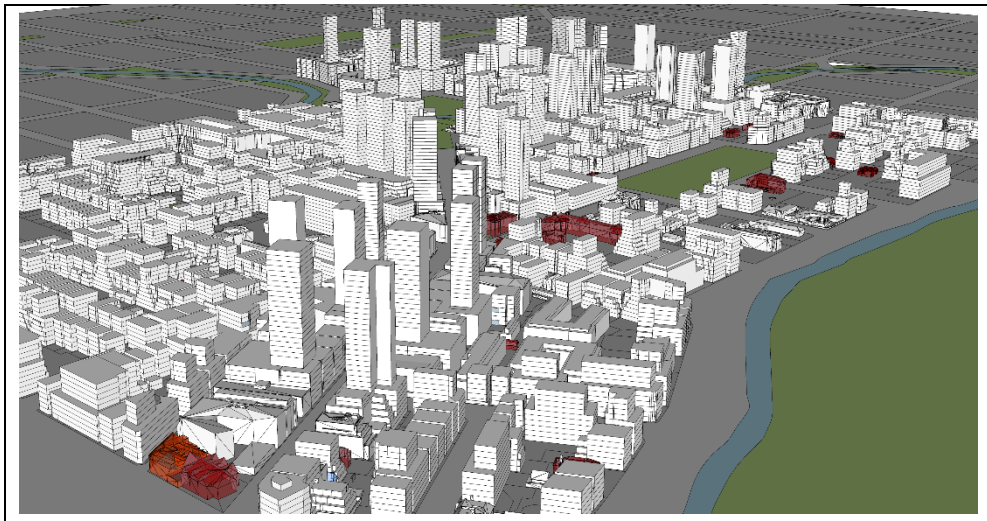
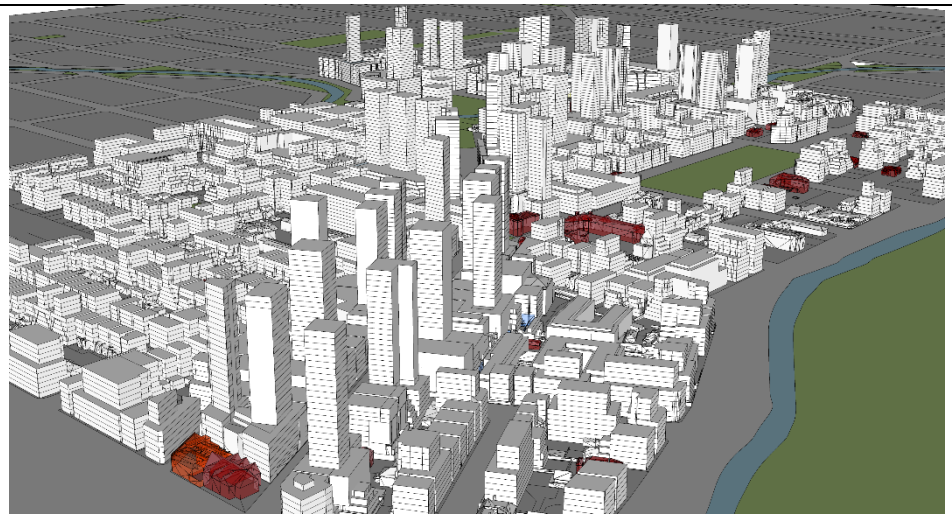
Recommendations

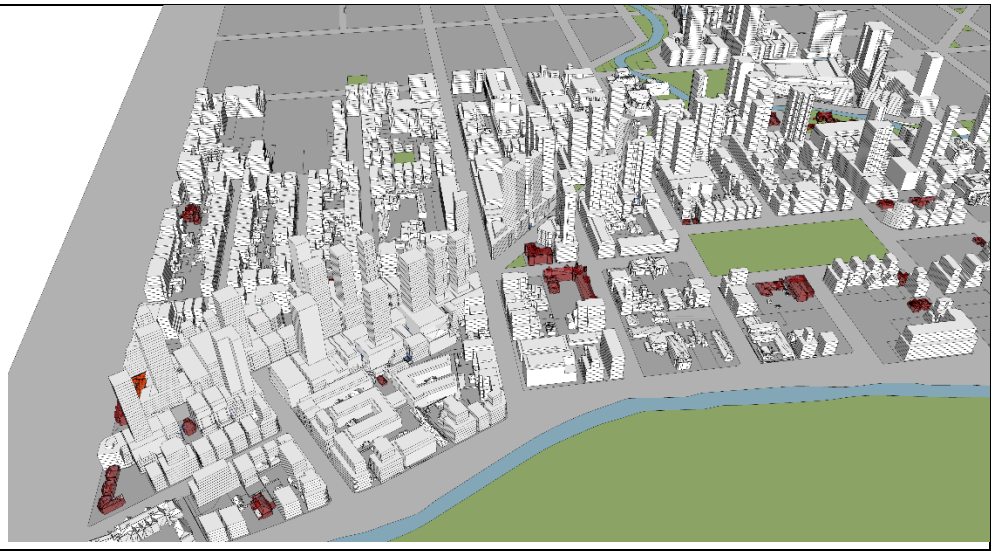
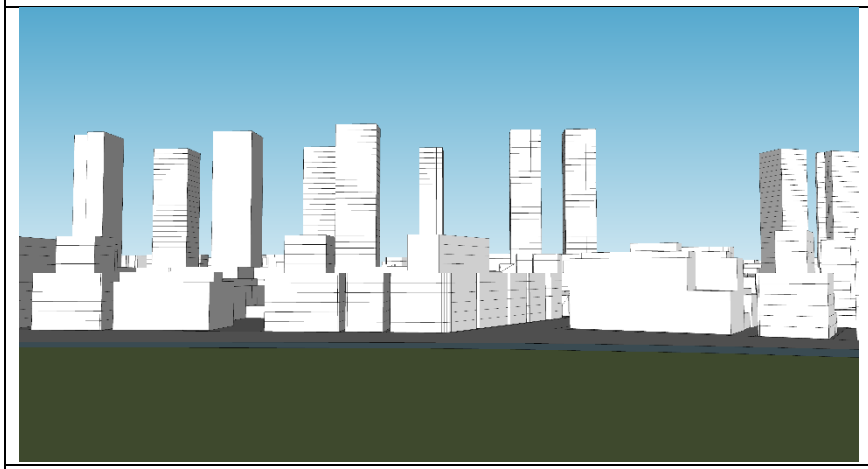
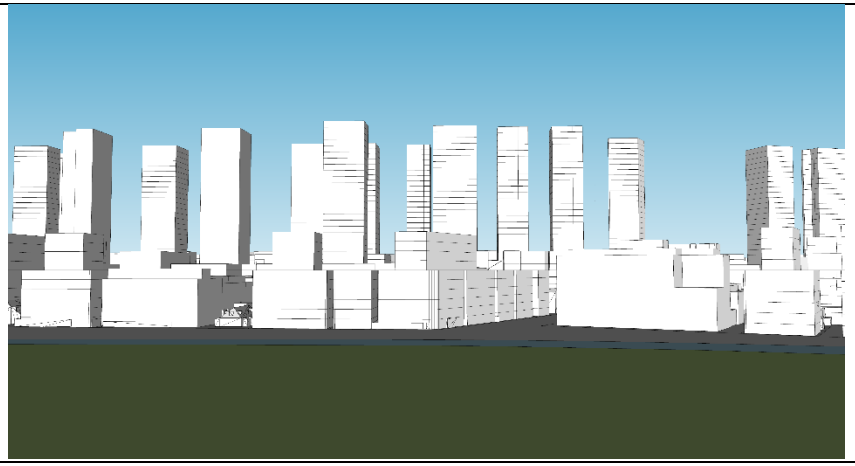
In order to support the image and legibility of the central city, and an appropriate transition in urban form, whilst generally allowing for an increase in building height, it is recommended that Scenario 3 is implemented i.e. 45m in height. This provides for increased development capacity, while meeting the policy direction about city form, and limiting dominance effects in respect to adjacent residential development.

Scenario 1: 90m Victoria Street height

This scenario includes 90m high Victoria Street buildings. This means consistency between the Central City and Victoria Street, with a consistent City Centre Zone height limit, except where Qualifying Matters apply i.e. Cathedral Square. A continuous built form will therefore be developed towards Bealey Avenue.

- In this scenario, there is no distinction between Victoria Street and the Central City. It reduces the consolidation of tall buildings in the core of the Central City and reduces the legibility of the city with activity concentrated into a compact area.
- There is a risk of isolated tall buildings being constructed, which may appear out of place. The building height of 90m is considerably higher than other parts of the built environment of Victoria Street and its environs. Some newly developed buildings are up to six storeys at present but no building in this area is exceptionally higher than others and there are likely to be few sites that will develop at height. The ribbon nature of the street reduces the opportunity for a consolidated form or cluster of buildings to establish.
- Buildings at this height appear out of proportion when compared to the surrounding residential buildings that are up to 32m height. In relation to the wider image, this transition may appear too 'sudden'. In this case, Victoria Street cannot offer any buffering or transitioning value when taking into account the High Density Residential Zone (32m and 20m) and City Centre Zone (90m). There is a risk that a limited number of very prominent, tall buildings establish which visually dominate the surroundings.

	
Realistic-capacity scenario 1: An extension of central city in form. Strong contrast in built form with the surrounding existing and future context.	**High capacity scenario 1:** Further detracts from the central city form.

	
Realistic capacity scenario 1: An extension of central city in form. Strong contrast in built form with the surrounding existing and future context.	**High capacity scenario 1:** Further detracts from the central city form. The upper Victoria Street can appear clustered.
	
Realistic capacity scenario 1: View from Hagley Park, 90m can appear out of proportion and significantly contrasts to the lower residential up to 10 storeys, such that it creates a disconnected in form.	**High capacity scenario 1:** High capacity viewed from Hagley Park, Victoria Street further detracts from the prominence and primacy of the Central City.

Scenario 2: 60m Victoria Street height

This scenario includes 60m high buildings along Victoria Street. This scenario illustrates a similar proportion of building height difference as is currently identified in District Plan provisions. The current Victoria Street height overlay is 61% of central city building height (17m compared to 28m), whereas a 60m Victoria Street building height will be at 67% of 90m.

- In this scenario, the Central City is more defined in terms of city image, increasing the legibility of the City Centre.
- If the 60m height building was to be built earlier than the development of the Central City, the building can appear isolated from the existing immediate surroundings and be excluded from the Central City, as this height is higher than the majority of existing buildings in the Central City.
- In relation to the proposed height for the surrounding residential and mixed-use sites, a height of 60m is near doubling the 32m residential height limit. When compared to the District Plan operative residential heights provisions (11m and 14m for surrounding residential area and 17m for Victoria Street commercial), 60m can appear out of proportion while reflecting a level of height increase for business activity.
- In relation to the transition in built form, 60m building height is near a medium height for the transition from the 32m residential to the 90m Central City building height.

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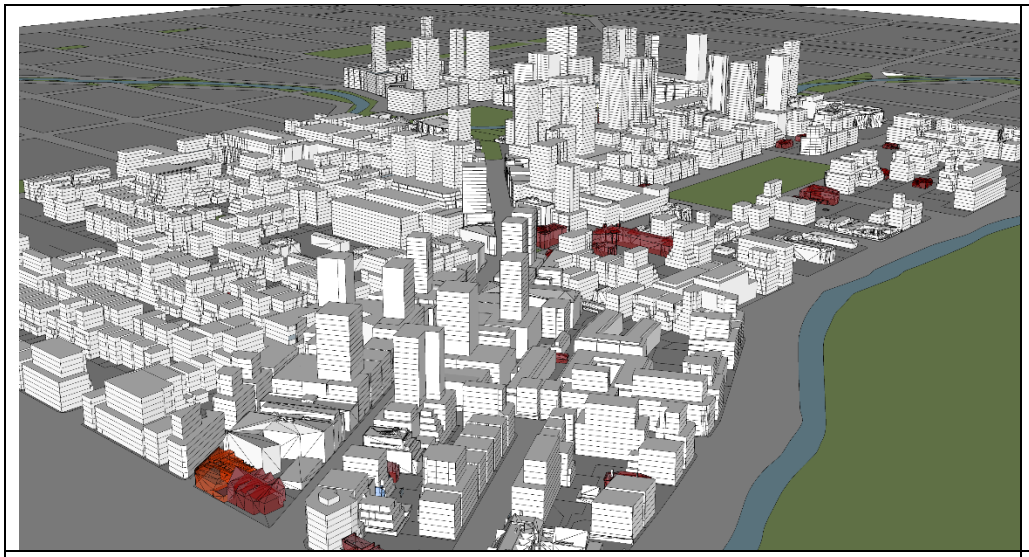
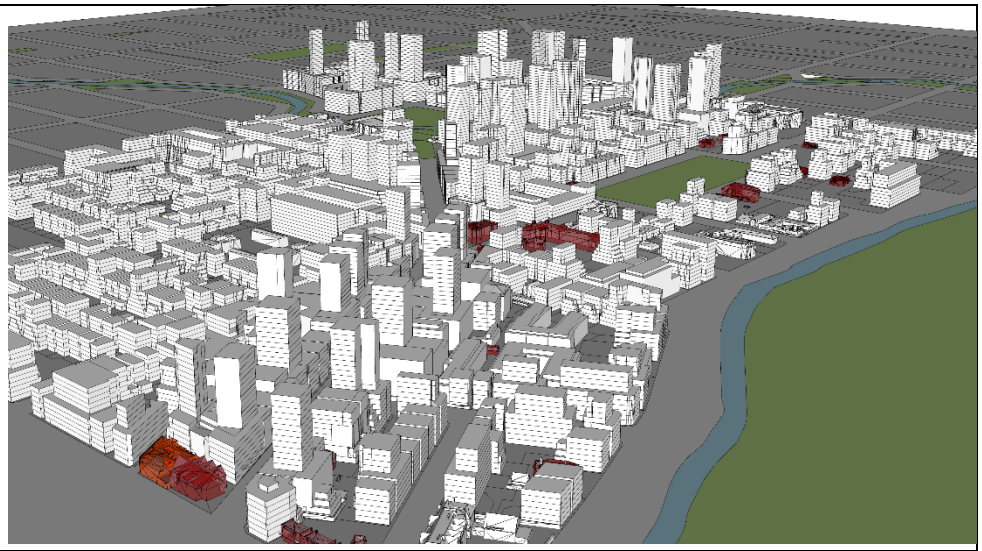
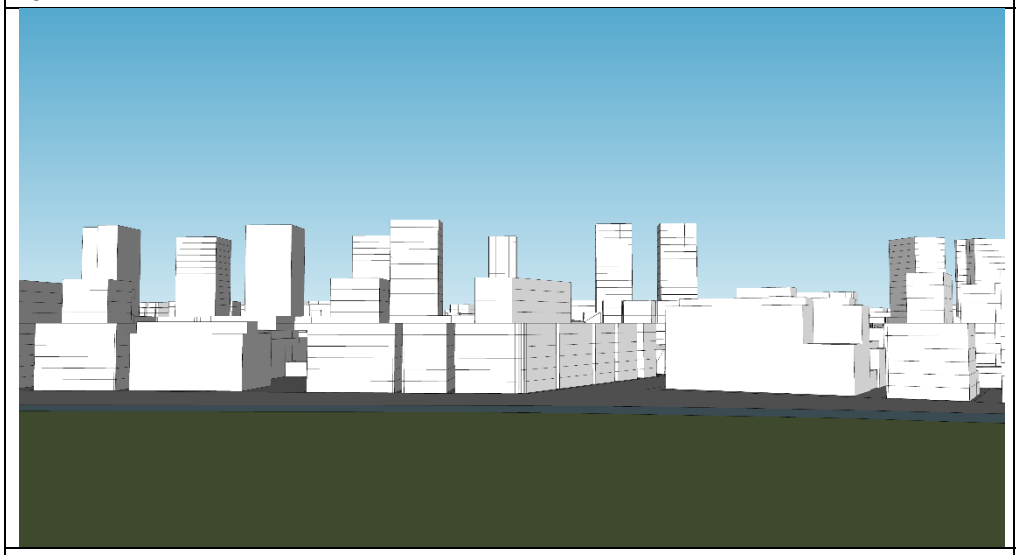
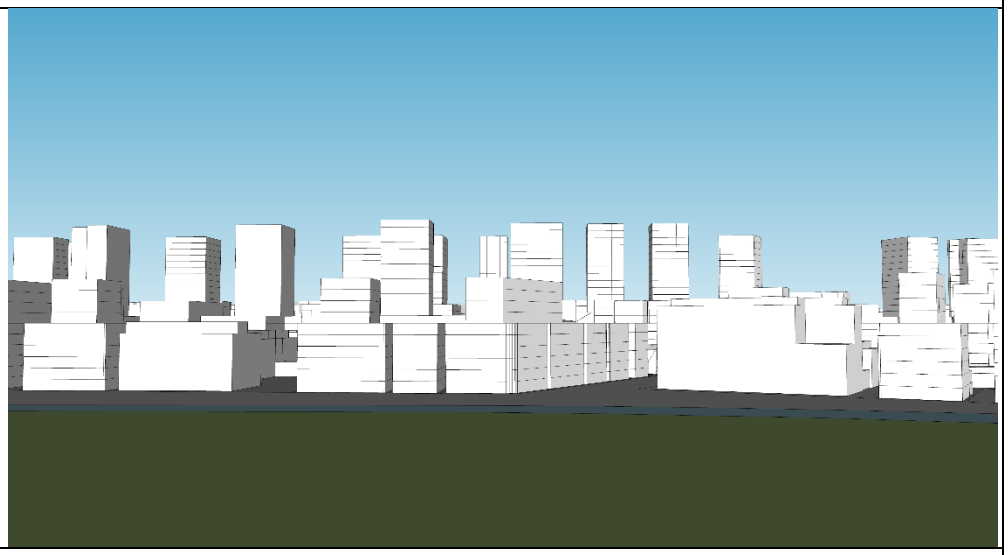
<tr>
<td>  </td>
<td>  </td>
</tr>
<tr>
<td>Realistic-capacity scenario 2:
60m height makes central city appear more distinctive and dense, benefiting the legibility of the Central City.</td>
<td>High capacity scenario 2:
High capacity scenario at 60m can over-emphasis Victoria Street.</td>
</tr>
</table>

Realistic capacity scenario 2:
Victoria Street has some distinction from the Central City, and a good level of height transition between the surrounding residential and the Central City 90m form.

High capacity scenario 2:
A high cluster of activity appear in the upper Victoria Street.



Realistic capacity scenario 2: The 60m towers create greater legibility of the commercial area of Victoria Street in comparison to the adjacent residential area. The height difference appear appropriate in relation to the change in activity.

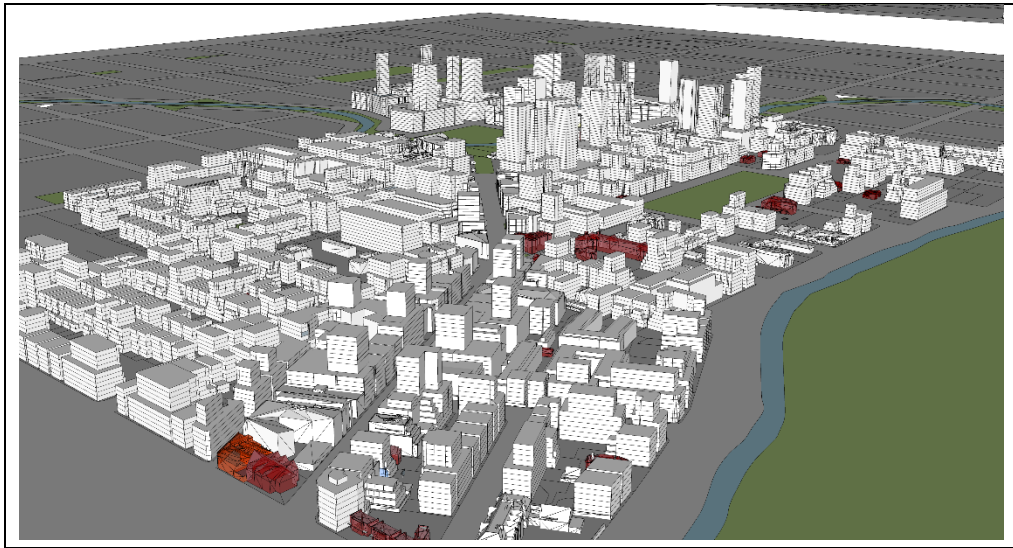
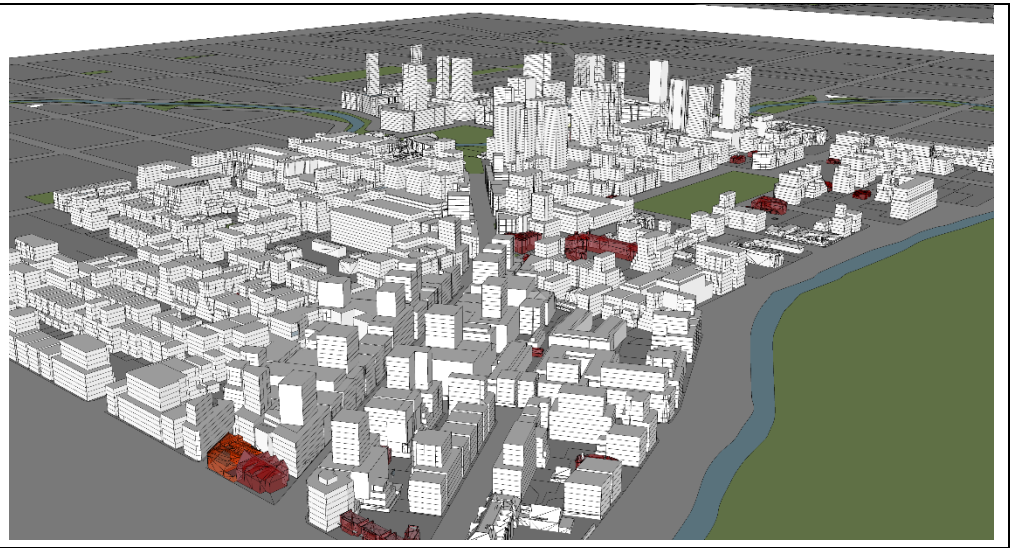


High capacity scenario 2:
At high capacity, the Victoria Street feels a little separated from the surrounding area but appears business-centred.

Scenario 3: 45m Victoria Street height

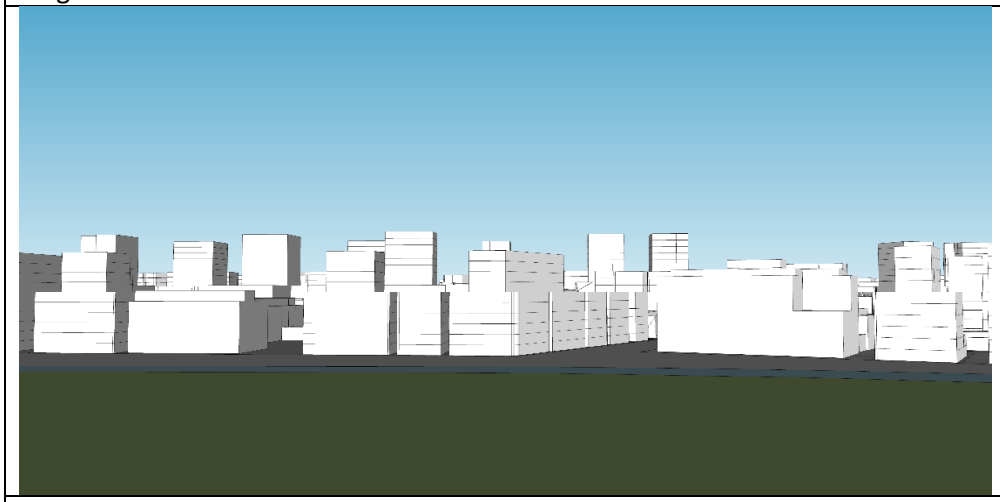
This scenario includes 45m high Victoria Street buildings.

- In this scenario, the Victoria Street precinct height is half the Central City height. This supports the high importance placed on the central city area and helps to visually define the boundary of the central city providing a strong level of legibility.
- 45m is lower than many taller buildings currently in Central City, providing an appropriate level of height increase to Victoria Street that will not detract from the existing Central City form. It provides for an approximate increase by doubling the height of existing buildings on Victoria Street that means that new buildings at this height limit will relate better to surrounding buildings as compared to other options (higher height limits).
- A 45m height limit is around 50% more than the surrounding residential area height limit, meaning that buildings will not be visually dominant.
- The form of transition between the 45m Victoria Street height and 90m Central City, may be quite evident as the central city doubles the 45m building height. This however reinforces the primacy of the Central City.

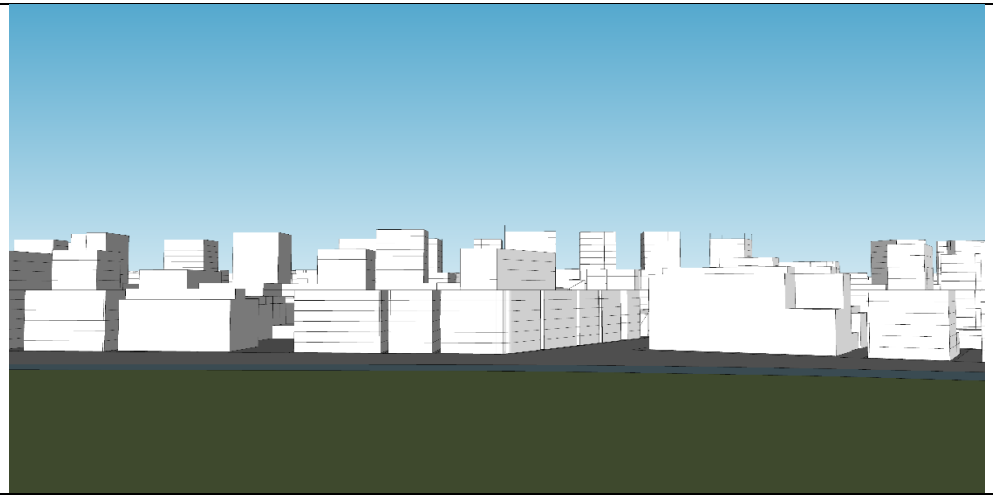
	
Realistic-capacity scenario 3: In this scenario the Central City will appear further consolidated, strengthening the idea of activity cluster in the central catchment.	**High capacity scenario 3:** High capacity model shows a similar idea where Central City is clustered within the catchment and Victoria Street form does not detract the primacy.

Realistic capacity scenario 3:
45m height is the most appropriate to the surrounding residential areas but a contrast when transitioning into the Central City where doubles the building height.

High capacity scenario 3:
Appears appropriate, shows different activity to the surrounding residential areas and illustrates business status at a low intensity compared to the Central City.



Realistic capacity scenario 2:
The 45m towers create greater legibility of the commercial area of Victoria Street in comparison to the adjacent residential area while not overly dominate the adjacent form. The height difference appear appropriate in relation to the change



High capacity scenario 2:
At high capacity, the 45m Victoria Street buildings feels integrated and not too distinctive from the surrounding area but appears business-centred.

Appendix 3: Cathedral Square Sunlight Study

This paper considers the amount of shading that will occur on Cathedral Square under various building height scenarios.

The NPS-UD requires increases in height to be implemented in the central city. An assumption has been made for the purposes of this exercise that the maximum height will be 90m. This may be a height limit implemented in the District Plan, but it is in any case considered to represent a realistic maximum height for buildings in the city at present.

The NPS requires height limits to be maximised. For this reason, most of the scenarios employ lower heights only for sites directly adjacent to Cathedral Square. In some cases, adjacent buildings have been modelled, but it was mostly found that there was limited extra shading caused by taller buildings near the square. This means that the analysis demonstrates that for the most part it is only necessary to reduce the heights of buildings next to the square to manage the issues of shading.

Scenarios tested were as follows:

5. 30m (adjacent to the square) and 60m (for other "key" sites close to the square)
6. All 90m (No Height Limit)
7. 45m (adjacent) 90m (key)
8. 60m (adjacent) 90m (key)

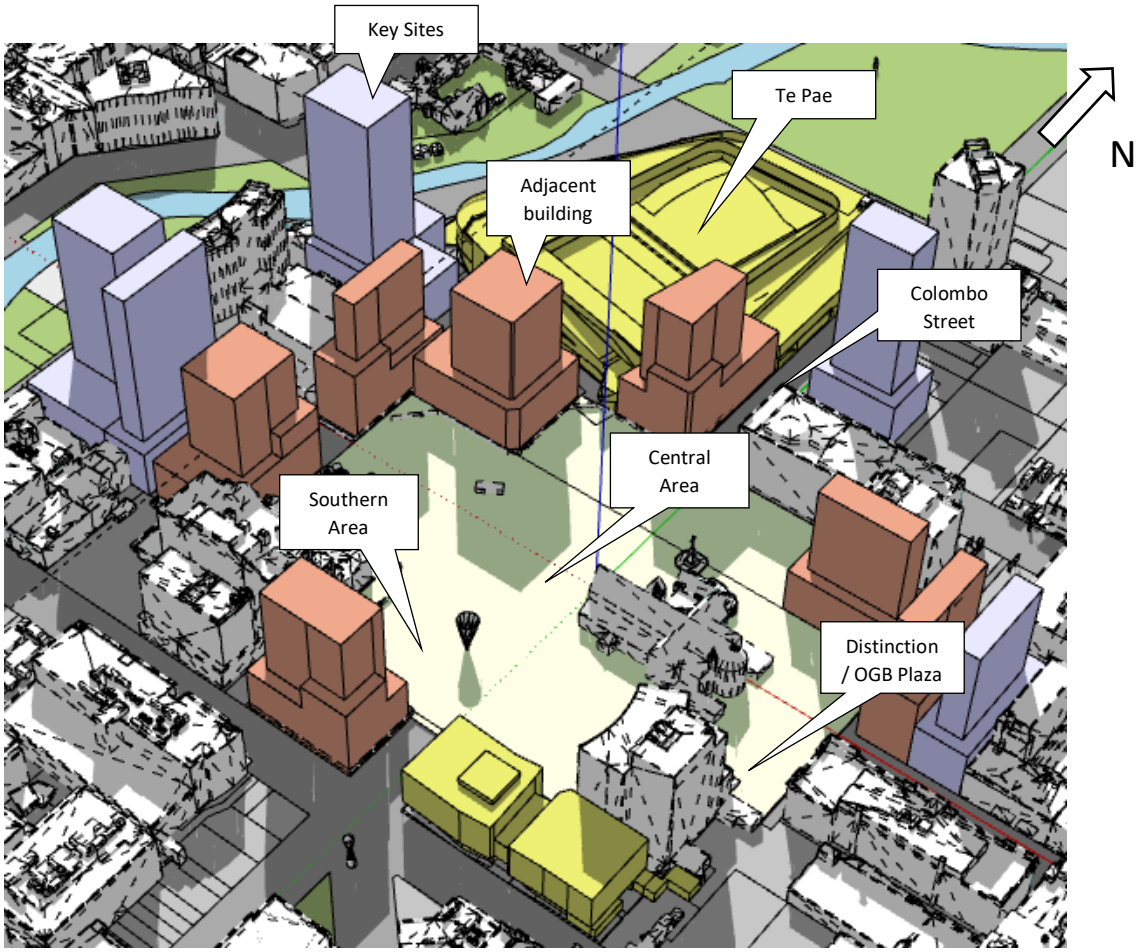
The study considered the impact of shading on various areas of the square:

- The southern area has the most potential for sunlight access and is therefore the most suited to outdoor activities. It is desirable to retain solar access to this area for as much of the year as possible.
- The Distinction / OGB plaza area is at the east of the square and has potential for good evening sun and active uses to take place.
- The Central area is in front of the Cathedral. Solar access is important here but likely more so in the summer months and surrounds (which may include some time beyond the equinox, for example in April).
- Sunlight access at the north of the square is likely to be more restricted

The study considered the impact of two categories of building:

- Adjacent sites were those directly adjacent to the square
- Key sites are those near the square (which could potentially cast a shadow over it) but not directly adjacent. Buildings on these sites could be higher, but potentially not the same limit as other buildings in the city.

These buildings and areas are shown on the diagram below:



Findings of the study are summarised as follows:

Scenario 1 provided for good sunlight access throughout the year, for the majority of the square, although parts of the square are shaded for much of the time in winter. Most of the shading was from the 30m high buildings, although there was some additional shading from the 60m buildings, notably from 184 Oxford Terrace (to the northwest).

Scenario 2 shaded the square for much of the day, on both the equinox and the solstice, included the southern boundary where good climactic conditions would be expected.

Scenario 3 led to an increase in shading in midwinter compared to scenario 1 that was especially apparent in mid-day. However, there was good access to sunlight at the south of the square and there was good sunlight access at the equinox.

Scenario 4 led to reduced sunlight access compared to scenario 3, with quite significant shading at the equinox. In the winter, there would be no sunlight at the eastern part of the square and limited sunlight at the south.

One thing the study showed was the impact of gaps in the buildings and the significant amount of sunlight access provided by these.

Buildings to the south of the square do not contribute to shading.

Recommendations

In order to manage the impact on sunlight on the square, whilst generally allowing for tall buildings, it is recommended that scenario 3 be implemented. This would limit adjacent buildings to 45m and

allow key sites to be developed at 90m (which is the height suggested for the city in general). No. 9 Cathedral Square (south of the site) could be developed at 90m because it does not cast shade on the square.

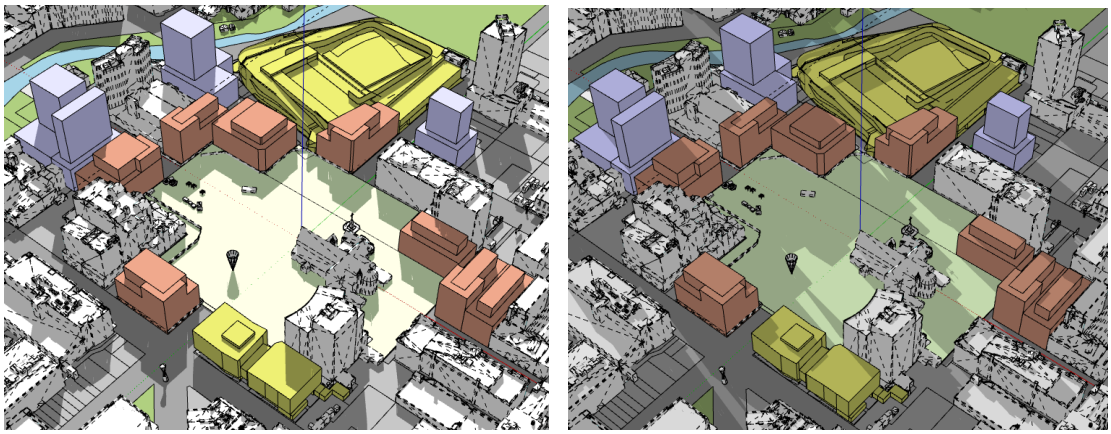
There is some potential for additional shading from some key sites if the height limit is 90m, but this is likely to be minimal and would have a small impact at certain times of the day and year.

Scenario 1: 30m Adjacent Buildings, 60m key sites

This scenario most closely resembles the current zoning. It ensures large proportions of the square are free from shading through most of the shortest day. This scenario ensures that there is good sun access throughout the day on most days of the year and that there is always some sun access at the south of the square.

Equinox:

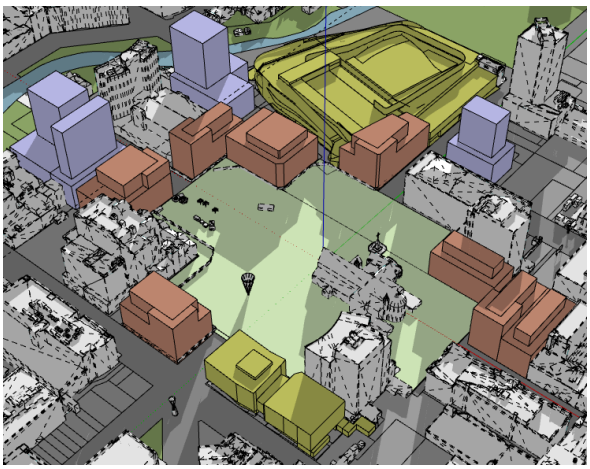
- There is generally little shading of the central area throughout the day, with only shading on the north and east or west side, depending on the time of day. This height limits does ensure that most of the square has good sun access.
- There would be full sun onto southern boundary throughout the day. In the late afternoon, the west side of this area would be shaded, but there would still be sun onto the Distinction / OGB plaza.
- At 5pm, there is still some sun at the southeast corner. Most of the shading is from the directly adjacent buildings (not the key site buildings). There is some additional shading from 184 Oxford Street (North West) but this is a small proportion of the shaded area.



Left (Equinox): Most of the square is free of shading at 2.30pm
Right (Equinox): There is still some sunlight access to the south-east corner at 4.30pm

Solstice

- There is some shading of the square during the day, but there are also large areas that are free from shading. In particular, the centre of the square is mostly not shaded during the middle of the day.
- There is good sunlight access into the southern area even on the shortest day.
- There is some (limited) sunlight access into the Distinction / OGB Plaza at this point of the year.



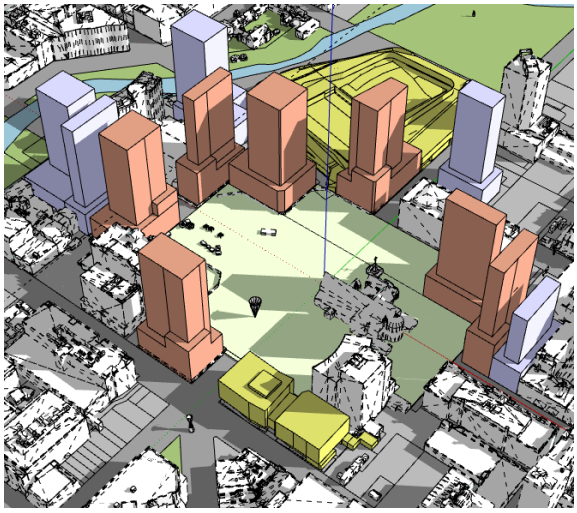
Left: Solstice shading at 2.30pm – Much of the square is free from shading on the shortest day.

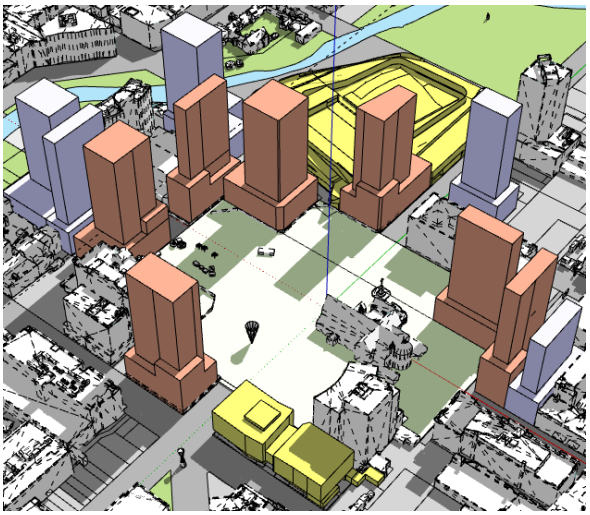
Scenario 2: All buildings at 90m (No Limit)

This is the most extreme scenario, assuming no height limit and that all sites are developed with tall buildings. This would have significant impacts on the amount of sunlight received on the square throughout the year.

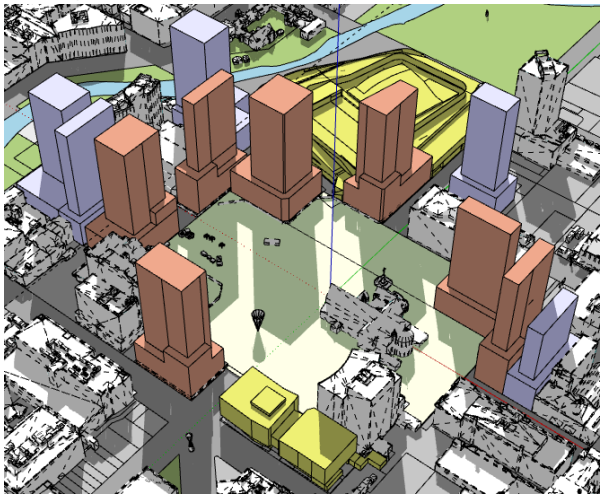
Equinox:

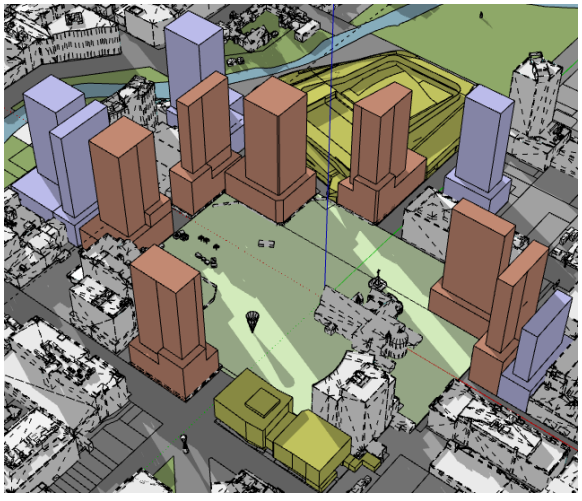
- There is significant shading of the eastern half of the square in the morning
- There is shading of much of the central area throughout the day, as shadows move across the square. Some areas would get brief interludes of sun as the shadows of different buildings moved across the square. Overall, there would be shading of central areas for most of the day.
- There would be limited sun onto southern areas in the evening, as shadows from various buildings fell across the square.
- There would be little sun onto the Distinction / OGB plaza area at any time.





Left: Equinox shade on the square at 9.30 (90m buildings)
Right: Some parts of the square are shaded at midday, including East side outside OGB (12.30, equinox).



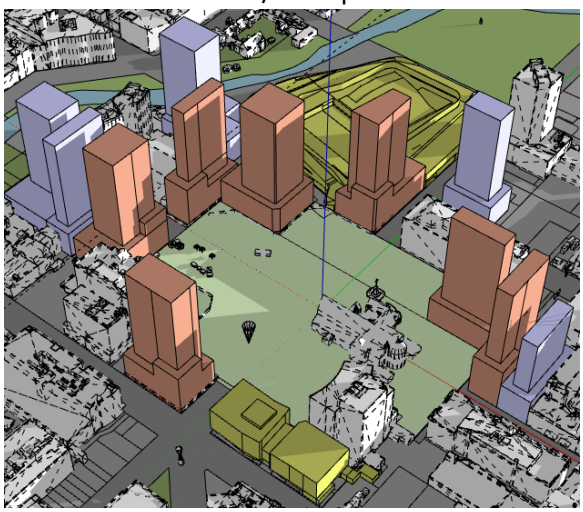


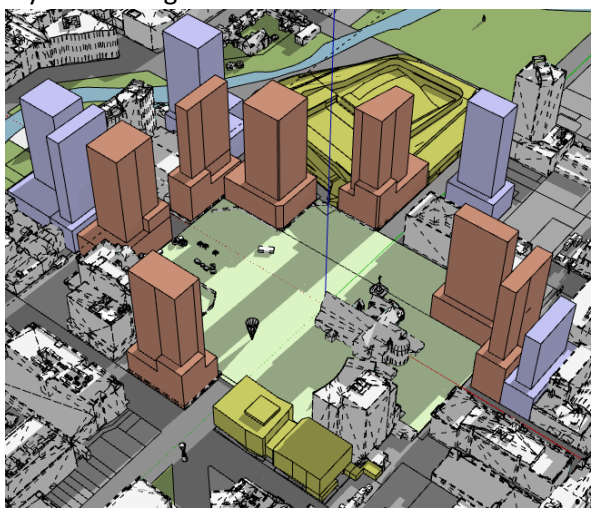
Equinox: Around half the square is shaded at 2.30pm
Late afternoon (4.30pm) – most of the square is shaded

Winter Solstice

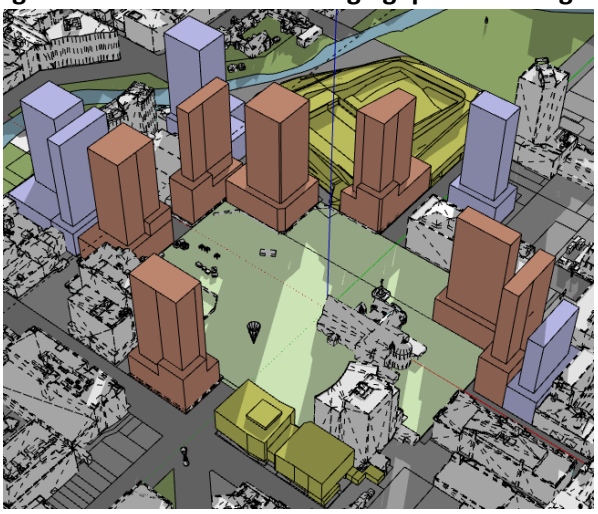
- Almost all the square would be shaded in the morning and late afternoon.

- Shadows would cross the square at midday meaning the only sun access to the southern area and centre would be via gaps in the buildings.
- Shadows would continue to fall on the square in the afternoon. Some areas would receive sunlight for limited periods as the sunlight slivers move across the square.
- The Distinction / OGB plaza would receive very little sunlight.





Left 22 June: 9.30am – Most of the square is shaded
Right 12.30 – Some sun through gaps in buildings.



2.30 – Some slivers of sunlight

Scenario 3: 45m Adjacent, 90m key sites

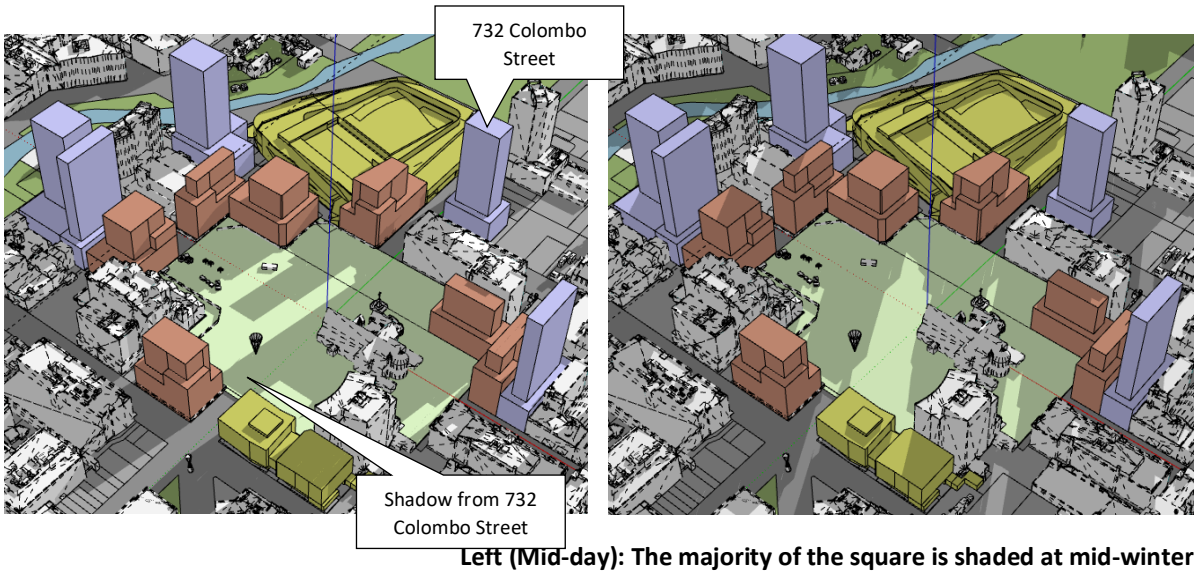
This is an intermediate scenario, which uses the 45m heights from the previous city plan as a basis, applying these only to the sites directly adjacent to the square.

In mid-winter, there would be sun at the boundary of the square, but the centre would be largely shaded, with the only sun access being from the gaps between buildings. This scenario may indicate the maximum heights if some solar access is to be achieved at the southern boundary all year.

Most of the shading was from the 45m buildings, but the length of the shadow-line was extended by 90m buildings – for instance 732 Colombo Street. This indicates that the 90m limit may be too high to fit with the 45m limit.

Winter Solstice

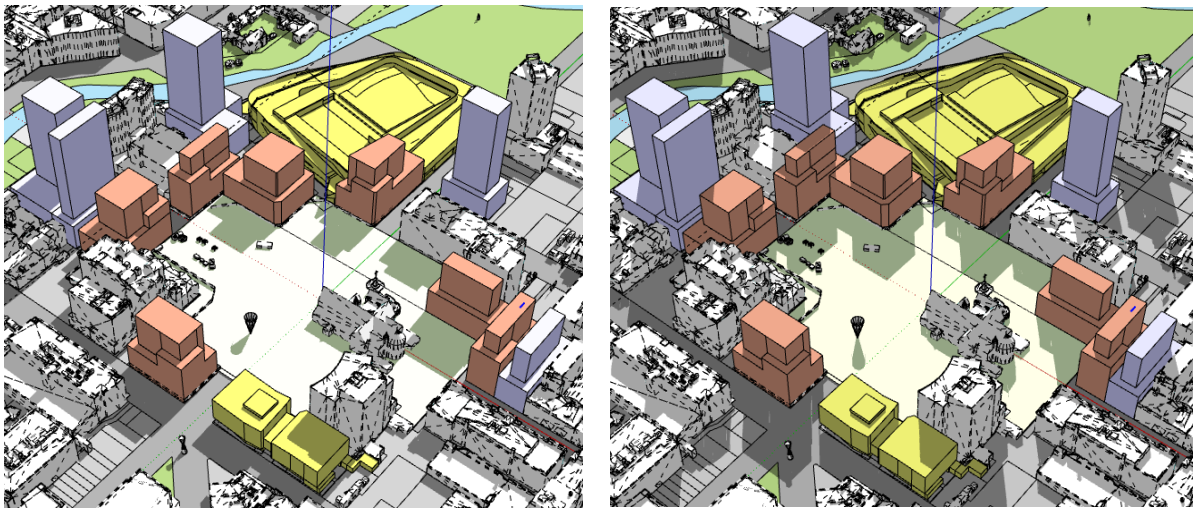
- The majority of the square is shaded at mid-winter, from the 45m high buildings. However, the southern plaza area is free of shade from mid-day except for an area (near the chalice) shaded by the 90m building at 732 Colombo Street.
- The south area would be largely free of shading if this limit was lower (80m).
- Both mid-day and in the early afternoon, some of the central area is unshaded, but this is mostly due to the gaps in the buildings and due to the lower height of Te Pae.



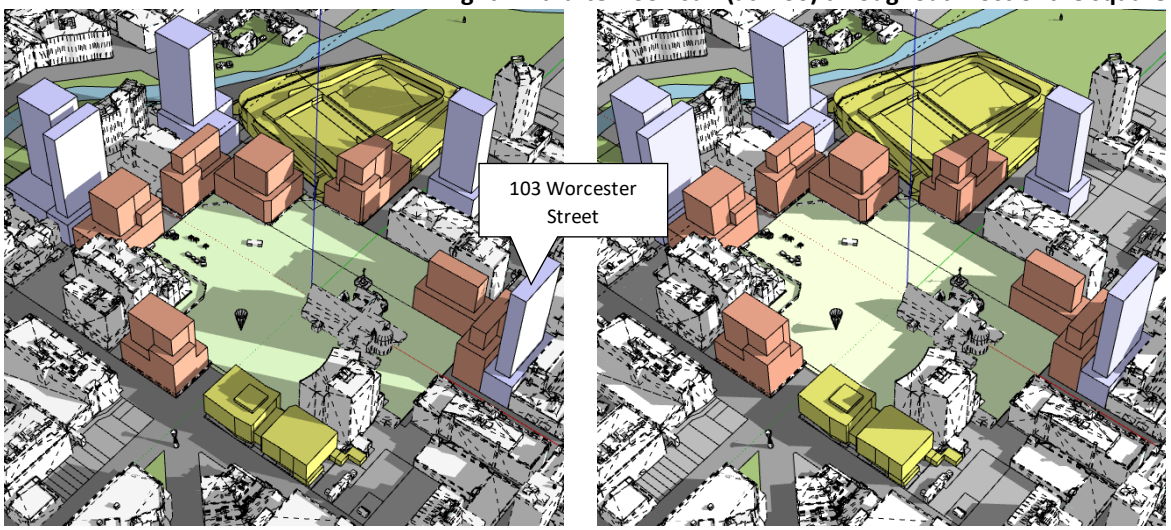
Left (Mid-day): The majority of the square is shaded at mid-winter
Right (2.30pm): Some of the square is unshaded and the impact of gaps in the buildings is evident

Equinox

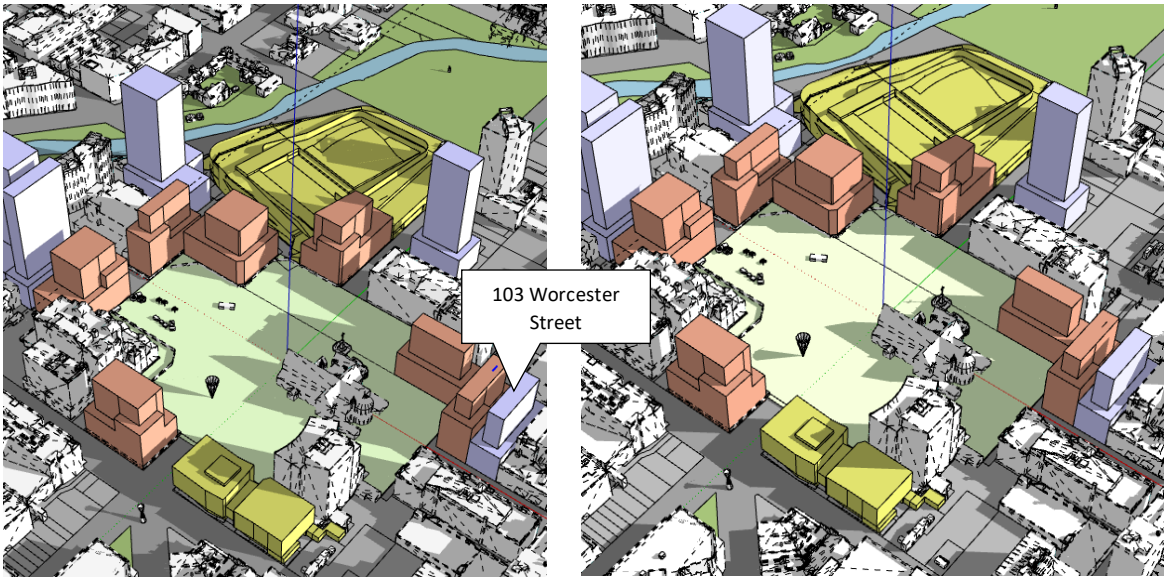
- There is generally good solar access at the equinox for most of the day.
- Both the south area and the Distinction / OGB plaza receive good sun access.
- The impact of one key site close to the square is shown to be very signicant. As a result it is recommended that that site (103 Worcester Street) should be an adjacant site with a lower height limit if appropriate.
- Other than for 103 Worcester Street, at this time of year there was no additional shading from the 90m buildings (all shadow on the square would be cast by the 45m buildings).



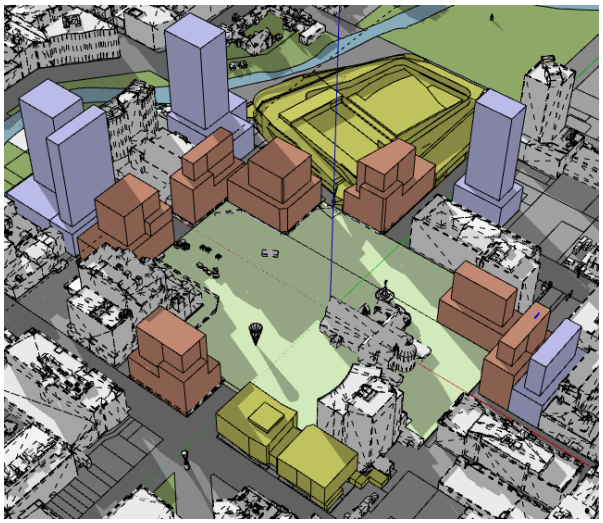
Left: There is good access to midday sun at the equinox
Right: Mid-afternoon sun (at 2.30) throughout most of the square



Left: At 8.30am there is significant shading of the south west corner from 103 Worcester Street;
Right: by 9.30 it has moved on to the south east corner



There is considerably less shadow if the building at 103 Worcester Street is reduced in height (8.30, left and 9.30, right).



September 22: Some late afternoon sun in the south east corner (at 4.30pm). Note that the shading is from the 45m buildings and there is no additional shading on the square from the 90m buildings.

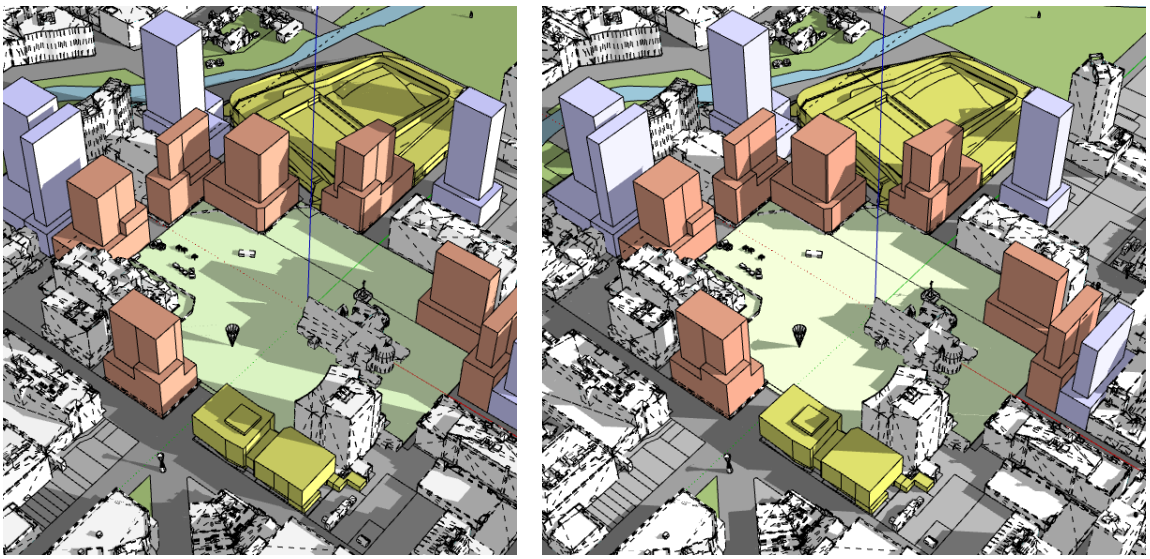
Scenario 4: 60m (Adjacent) and 90m (Key Sites)

This scenario creates shading that is more extensive over the square than scenario 3.

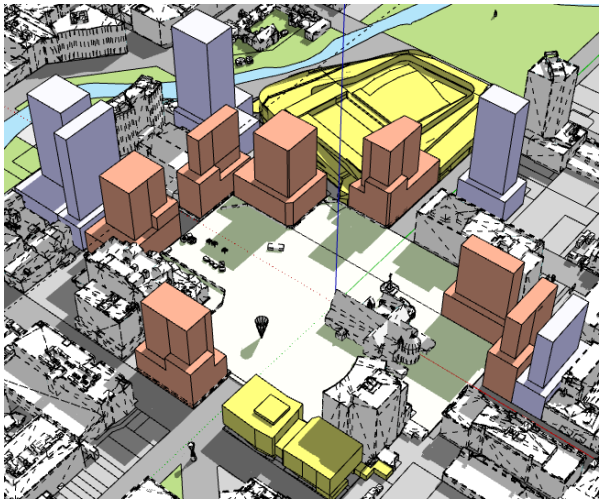
Equinox

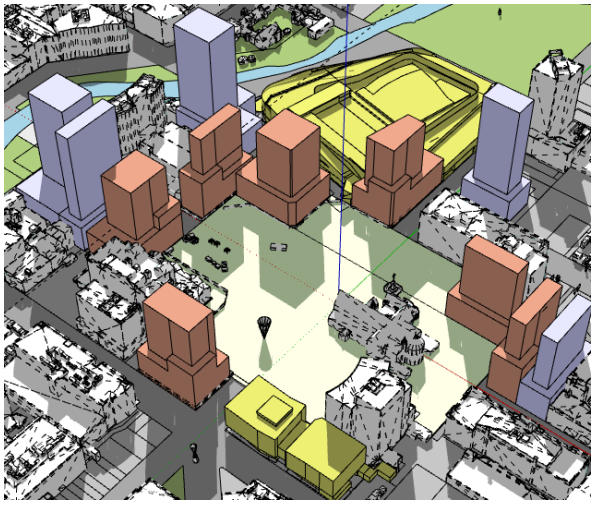
- In this scenario, buildings would shade central areas of the square before 9am
- There is generally good sun access in the middle of the day (although some parts of the northern areas are shaded).
- The north side is mostly shaded by 2.30, except for small areas under gaps in the buildings (at Colombo Street and Te Pae). These Stripes of sunlight will migrate across the northern portion of square through the day.
- In the late afternoon, shadows are more extensive and the whole square is shaded by 4.30, with the exception of slivers light through the gaps in the building.
- There is therefore quite extensive shading at the equinox under this scenario, compared to scenario 3.

Equinox



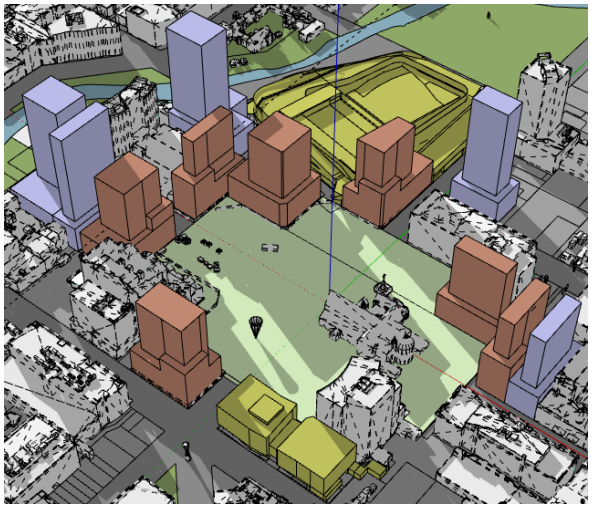
Above: Early morning shading is more extensive at the equinox (8.30am and 9.30am)





Left: Some additional shade over the central areas at midday

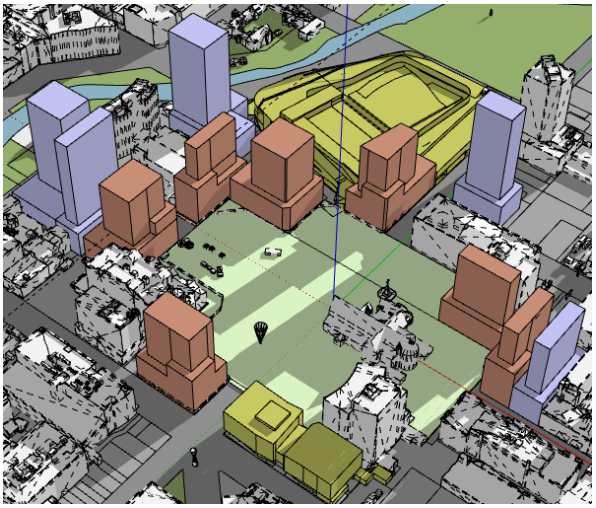
Right: Some additional shading over eastern and central parts of the square at 2.30, but good sun access to the southern areas of the square.

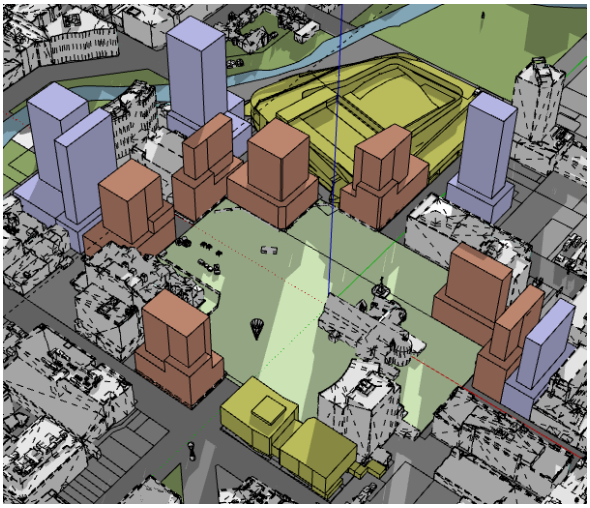


22 September 4.30: Reduced sun access to south area.

Winter Solstice

- During the shorter days, there is very little sun at all during the day for the Distinction / OGB corner.
- On June 22, shadows extend across the whole of the square in the afternoon, with a sliver of sunlight through the gap between the buildings. The square is mostly shaded during winter. Other than at mid-day, this shading is largely caused by the 60m buildings.





Left - midday: Most of the square is shaded; with some sun through gaps in buildings.

Right - 2.30: Shadows extend across the width of the square

Appendix 4: City Centre Zone capacity study

- Following the identification of Central City Zone, the area is calculated to be 566,776.07 sqm, including Victoria Street and Cathedral Square.
- When excluding Victoria Street height variation and Cathedral Square height variation areas, the total land area is 463,490.36 sqm.
- The area excluded (also the area applied height variation), is the difference between the two, 103,522.33 sqm, including Victoria Street precinct that is 68,439.45 sqm, and Cathedral Square area that is 35,082.88 sqm (including the cathedral land itself).
- Following a Victoria Street and Cathedral Square capacity study, an average in Floor Area Ratio (FAR) is generated for the three height limit scenarios – 45m, 60m and 90m, they are as follows.
    - 45m – FAR 9.122
    - 60m – FAR 10.588
    - 90m – FAR 12.878
- It is assumed that under the current District Plan rules, a FAR 6.5 is applied to the Central City Zone. This is concluded because of the 21m height limit (likely 7 storeys maximum), and recession planes that will likely reduce the upper floor capacity.
- Under these scenarios, the comparison between the existing rules and the proposed rules with different height limits for the Central City Zone capacities is listed as follows.

Scenario	FAR	Capacity	Increase over BAU capacity
BAU	6.500	3,683,979.5 sqm	N/A
45m	9.122	5,170,040.1 sqm	40.3%
60m	10.588	6,000,919.1 sqm	62.9%
90m	12.878	7,298,813.4 sqm	98.1%
Rest of Central City Zone (excl. Victoria St, Cathedral Sq 463,490.36 sqm	6.5 (at BAU) 12.878 (at 90m)	3,012,687.3 sqm (at BAU) 5,968,828.9 sqm (at 90m) The rest of Central City Zone will have a total capacity of 5,968,828.9 sqm, at 90m. This is 98.1% of increase over the BAU scenario for the 'Rest of Central City Zone'.	98.1%
Cathedral Square 35,082.88 sqm	12.878 (at 90m) 10.588 (at 60m) 9.122 (at 45m)	- 451,797.3 sqm (at 90m) - 371.457.5 sqm (at 60m) - 320,026.0 sqm (at 45m). Difference is 131,771.3 sqm (when applying a 45m height limit vs 90m height limit).	BAU – at 6.5 FAR = 228,038.7 sqm.
Victoria Street 68,439.45 sqm.	12.878 (at 90m) 10.588 (at 60m) 9.122 (at 45m)	- 881,363.2 sqm (at 90m) - 724,636.9 sqm (at 60m) - 624,304.7 sqm (at 45m)	BAU – at 6.5 FAR = 444,856.4 sqm.

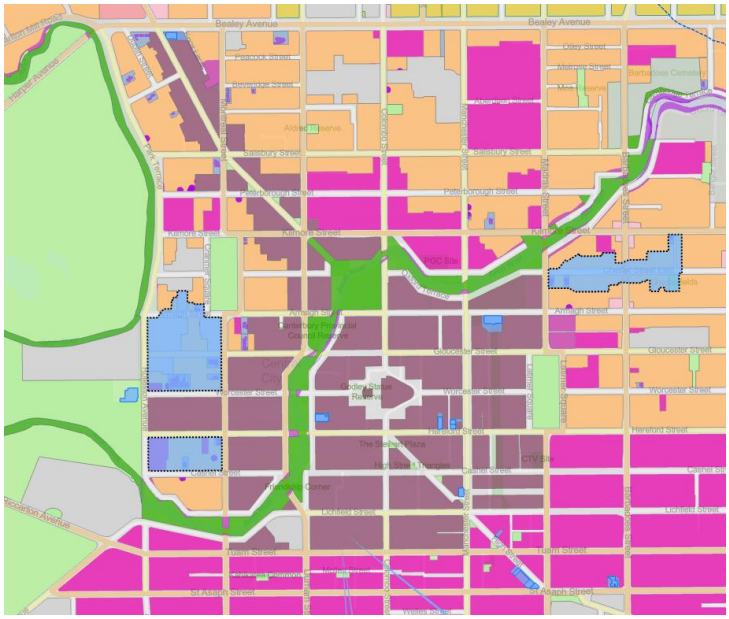
		Difference is 257,058.5 sqm (when applying a 45m height limit vs 90m height limit).	

Note: Some of the Central City Zone would include existing open space/play area, for example, Cathedral Square, Margaret Mahy Family playground, the east frame open space, and other key existing buildings, e.g. Te Pae. However, for the purpose of this study, they will be included in the development capacity calculations.

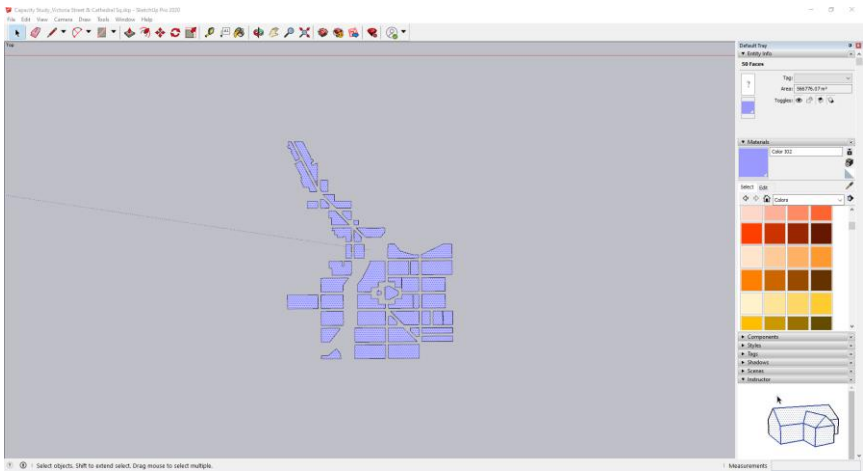
This would mean that the development capacity outcome is likely higher than reality.

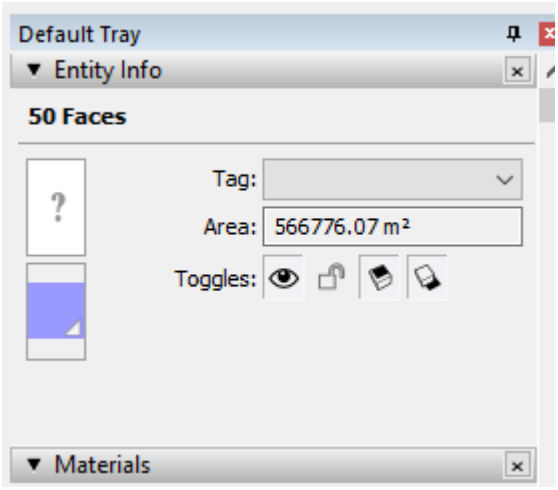
The following are steps taken in calculating the land area.

Proposed zoning map of central city.

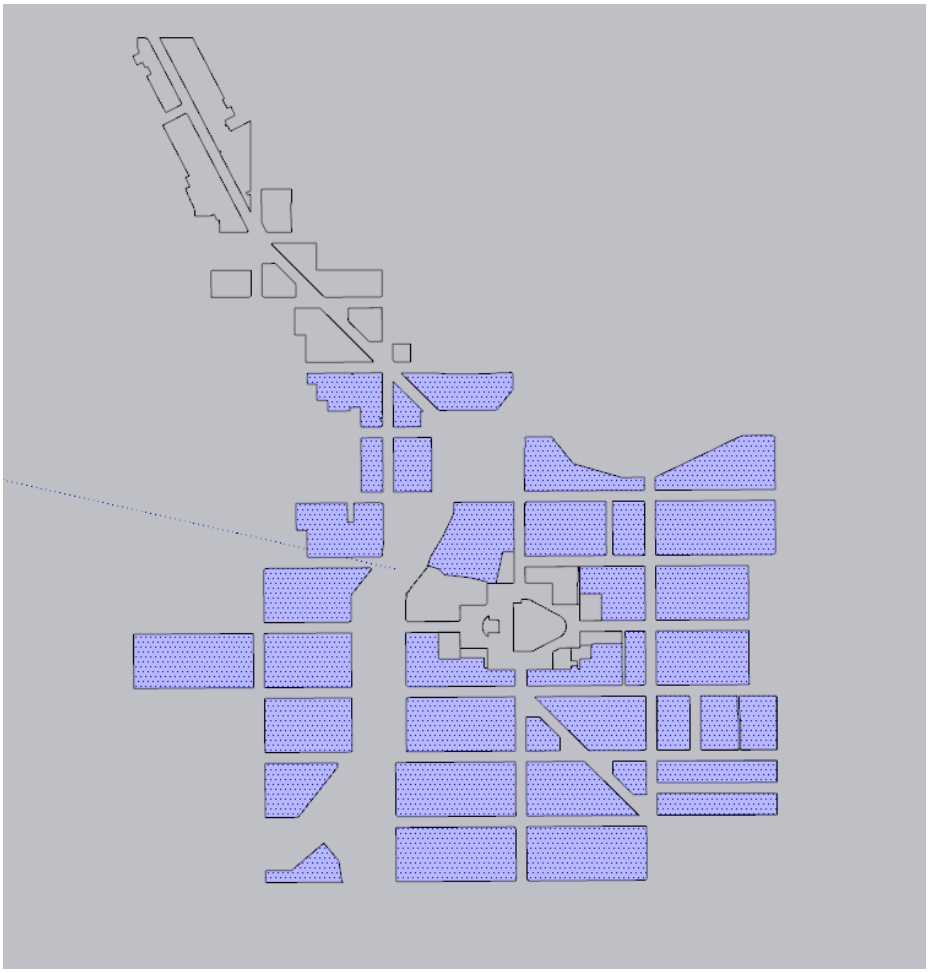


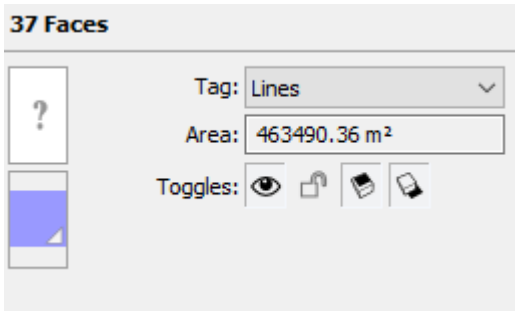
Identified land area of the central city zone.





Excluding Victoria Street precinct and Cathedral Square precinct (Height variations). The rest of the central city zone is shown in purple, which is 463,490.36 sqm.




37 Faces
?
Tag:
Lines
Area:
463490.36 m²
Toggles: