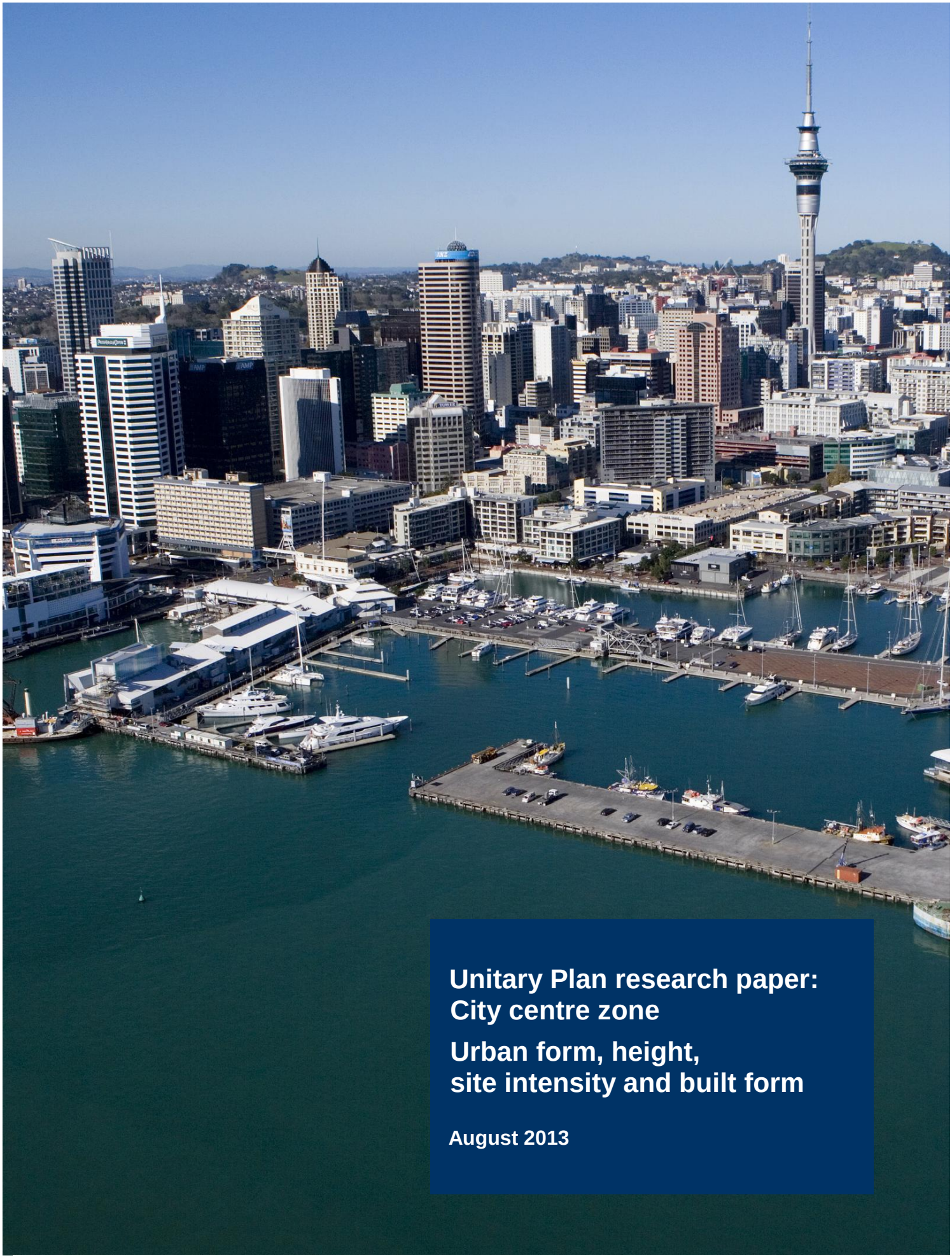

Unitary Plan research paper: City centre zone

Urban form, height, site intensity and built form

August 2013

Find out more: Ph 09 301 0101
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Auckland Council
Te Kaunihera o Tāmaki Makaurau

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Urban form, height, site intensity and built form research paper

Introduction

The City Centre is Auckland's principal centre, a place of opportunity and the focus of national and international business, tourism, education, cultural and civic activities. It has a vibrant and vital retail and commercial core and strong residential base. The city centre's urban form and skyline with Sky Tower forming a significant landmark at its core, has become one of the most defining features of Auckland's local and international identity. It has evolved over time through various planning approaches, political and economic cycles. The urban form created by a concentration of tall buildings in the city centre also expresses the economic prosperity of the region and aligns it with other prosperous Pacific Rim cities.

Policy context

There are a number of strategy, policy and planning documents that guide and influence the form and development of the city centre. The primary documents are:

- The Auckland Plan
- Auckland City Centre Masterplan
- Auckland City Council District Plan (Central Area Section, Isthmus Section)

Research objective

The research objective is to review the planning framework applying within the city centre with respect to the form and scale of development, identify issues, undertake analysis and make recommendations on how to address these issues. .

The research examines Auckland's city centre's urban form and the planning factors that shape it. This includes height, site intensity and urban design methods. The research investigates and proposes recommendations to

- ensure the planning framework is aligned with the "quality compact urban environment" set out in the Auckland Plan, City Centre Masterplan and Waterfront Plan.
- ensure the urban form and skyline that is Auckland city centre's identity is supported by the planning framework
- improve the quality of built form – particularly tall or large buildings
- support regeneration with high quality built form and growth potential
- address gaps identified in the current District Plan (Central Area Section)

The review of planning methods will consider the following:

- the location of tall buildings and density of development likely to occur in the City Centre..
- Auckland's identity as a result of building height - including l transitions to precincts and harbour edge within the city centre and to adjoining neighbourhoods
- The design and form of buildings with respect to site specific conditions, existing character and future development potential of local areas and the wider city centre.
- Development densities that provide for the expected demand for floor space and range of uses, within the capacity of infrastructure to service development.
- How built form will complement the public realm, liveability and environmental quality of the city centre

The research examines Auckland's city centre's urban form and the planning factors that shape it. This includes height, site intensity and urban design methods.

Research method

The report draws from the current Auckland Plan policies, strategies and plans. It also reviews the performance of the Auckland City District Plan (Central Area Section). A range of information resources provided a foundation for the research including Section 32 reports, District Plan reviews, archived Council plans and reports. An essential part of this research was identifying the origins of our planning framework and evaluating its effectiveness to inform the development of the new Unitary Plan.

The analysis also draws from a series of tests and studies that explore options for changes to the various methods that could enhance the form of development, address issues that have been identified and achieve high quality urban design in the city centre. Recommendations are proposed throughout the research and will be considered in the development of the new city centre zone for the Unitary Plan.

Document structure

The first section identifies those factors that contribute to Auckland city centre's distinctive urban form.

The second section briefly examines the origins of the city centre's height philosophy and the methods applied to achieve it. Various tests are undertaken to help evaluate whether changes are required and the form of those modifications.

The third section reviews the site intensity methods. These are applied in conjunction with the height methods to influence urban form, public benefits and are an important tool for accommodating public benefits and future growth where necessary.

The final section looks at building form and design in greater detail. This includes relationship to the site, adjacent sites, neighbourhoods and city wide influences.

1 Auckland city centre's urban form

1.1 Introduction

The character and identity of Auckland's city centre derives from a combination of its underlying topography and the evolution of its urban development. The volcanoes, ridgelines and valleys that frame the Waitemata Harbour create a dynamic relationship that differentiates Auckland's city centre from other major cities.

In general, the image of Auckland when viewed from close-up or from afar, is centred around a concentration of tall towers centred around the Queen Street Valley and reducing in height towards the waterfront. This is caused by the two view protection planes that have concentrated height in the Queen Street Valley area by suppressing building height across both the east and western areas of the city centre.

Apart from this high-density core, height reduces elsewhere in the city centre to a scale that echoes the underlying topography of ridgelines, valleys and coastal reclamations. The transition ensured that views of city centre buildings from outside the area and views to the harbour and surrounding city, from buildings within the centre were not unduly compromised. It also provided a sensitive transition to the fringe residential areas and urban villages where the fine grain of relatively small individual built elements become subservient to the topography *(Skidmore 2004).*

A concentration of tall buildings topped by Sky Tower (328m) transitions to lower heights towards the city centre periphery and waterfront against a background of volcanoes and the Waitakere Ranges. The image of Auckland's tall buildings viewed across the harbour is an internationally iconic view of the city.

The waterfront has its own distinctive height strategy comprising a north-south height transition from the tall towers in core city centre to lower heights on the waterfront. This is complemented by an east-west height transition peaking around Queen Street Valley and is created in part by the view protection planes that suppress height and through a desire for built form on the waterfront to provide a distinctive lower scale foreground as an interface to the harbour.

. The urban form of the built environment has been shaped by a combination of factors that have influenced the city centre's evolution from a colonial port to a high-density international city. These factors include an essentially grid-based street pattern moulded around the landscape, a managed height and development intensity framework, environmental controls, landmarks, regional view protection planes, and a desire to integrate with the scale of the city fringe suburbs. Economic, social and political influences have also shaped the city's urban form.

Fitting new development into this environment is a matter of scale, design and location. It requires consideration of built form at every scale - from the micro scale with a building site, the local scale determined by a precinct's distinctive character, built form and height strategy to the macro scale of the entire city centre and the context of its physical form to the harbour and region.

This requires achieving balance and compatibility in the design for new development. It relies upon a built form and height that is complementary to the existing built environment, landscape, environmental values and the skyline. The scale of the city has increased as the city has evolved - from the scale of a building to

the intensity of development. This has created a rich tapestry of built forms that expresses Auckland's history and contribute to the city centre's unique identity.

1.2 The current planning framework

There are two primary documents that guide the development and built form in the city centre. The Operative Auckland City District Plan (Central Area Section) – 2004 is the primary regulatory planning document with established strategies, policies and methods that have been developed iteratively as the city centre has evolved. This continual refinement has meant the plan has adapted to changing public and market influences while retaining the many special qualities that contribute to the city centre's distinctive urban form. The non-statutory Auckland City Centre Masterplan provides direction on future development potential with a series of principles and projects.

The Auckland City District Plan - Central Area Section contains limited policy direction relating to the overall height and built form philosophy for the city centre. The only policy reference to the Central Area height philosophy is contained in Part 3: 3.5.1 Objective – A Quality Environment:

> To manage the use and development of the Central Area's natural, physical and cultural resources to protect heritage features and important view shafts and to ensure a healthy, clean and safe environment. (Relevant) Policies include:
>
> e) By providing for an urban form that encourages the concentration of taller buildings in the core and lower buildings towards the periphery.
>
> f) By protecting the view shafts that people regard as important, especially the views to Mt Eden and to the Museum from the harbour, and views of special features from other open spaces.

This policy supports peak heights centred around the Queen Street Valley, and reducing to provide a transition to lower heights on the waterfront, reclamations and landward periphery. This graduated transition has been managed to achieve a built form that is now recognised as Auckland's distinctive city centre. It also maintains a relationship with the landform and harbour that is visually evident through the built form.

The urban form anticipated by this approach was described as a 'bell-shaped curve'. The height strategy for the city centre continues to manage transitions in height through such wide range of provisions seeking a variety of outcomes has created this urban form for the city. The various provisions that influence height, scale and form are:

- General height controls – including areas of unlimited height in the core city centre
- Special height controls – sunlight protection to public places; view protection planes; height control planes
- Site intensity controls - floor area ratio (FAR) system and bonus provisions to achieve maximum floor area allocations. This includes an optional light and outlook bonus that modifies building bulk, design and site location of tall buildings and minimum podium heights and set backs in some areas.

The current planning framework has many strengths and has evolved, like the city, over time to produce the distinctive and recognisable urban form of Auckland's city centre. There are many successful aspects of the Auckland City District Plan - Central Area Section that will be incorporated into the new Unitary Plan. However, there is an opportunity to review some of the key elements that have an influence on the form and urban design outcomes in the city centre to determine whether any changes are necessary.

Comparing Auckland's development and planning framework with various other New World cities provides some direction on where this city could improve aspects of its planning framework. These will assist in responding to new pressures that will face the city centre as it intensifies and protect those features that make Auckland distinctive and one of the world's most attractive and liveable cities.

The Auckland City Centre Masterplan vision for built form is stated in the chapter - Quality Built Form:

> *'People experience the city centre's built form at different scales. The skyline – with the Sky Tower flanked by tall buildings on the harbour's edge – is recognised internationally, and characterises the city centre. Prominent buildings act as landmarks and assist people with orientation when in the city centre. All new developments – particularly those that are prominent because of their location, design or height – must enhance the cityscape, as this represents the identity and image of Auckland's city centre.*
>
> *At the street level, the diversity of building form, design and function is evident. It is a unique expression of Auckland's evolution from a colonial port to an international city centre. The clustering of activities in an area or quarter such as the corporate towers, civic buildings and the education*

campuses, strongly influence the scale of this built form and character. New buildings need to be carefully designed to ensure they are well integrated and enhance local distinctiveness and activity.'

Built form is supported by four good design principles to guide built and urban form. These are identity (landscape, heritage, character), diversity (mix of activities, urban form and architecture), integration (development supports uses, movement and resource networks), efficiency (development design optimises its site).

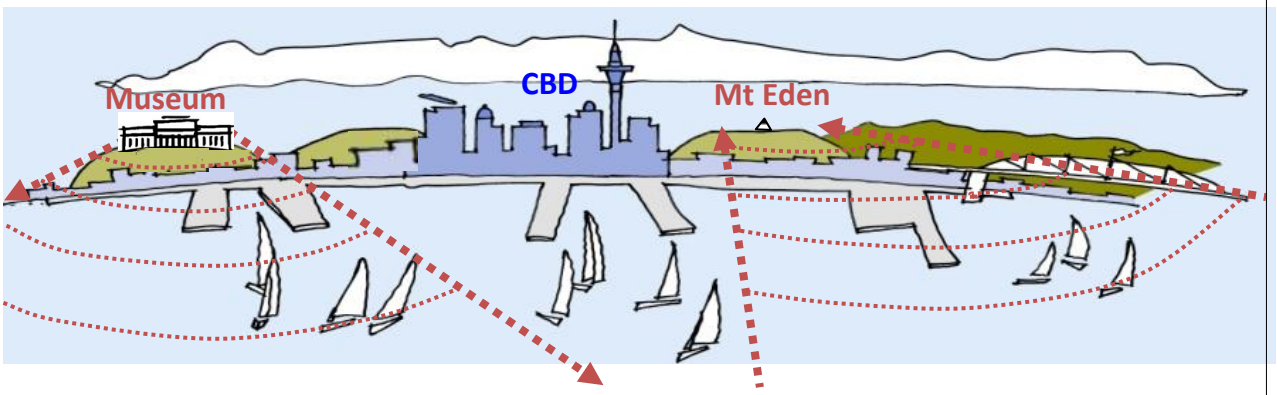


Diagram illustrates the influence of the view protection planes on the urban form of the city centre. The Museum view protection plane suppresses building height in the east - across Parnell and Quay Park; and the Mt Eden view protection planes suppress building height across Wynyard Quarter, Victoria Quarter, Karangahape Road ridgeline, Newton and Mt Eden. This has caused height to be concentrated in the core city centre/CBD where heights can reach over 300m.

1.3 Assessment of the current planning framework

Compared to other domestic and international planning documents, the Central Area Plan which is founded on a built form strategy of specified height, site intensity and design based controls, is achieving quality planning and design outcomes for the city. This can be compared with Sydney, Melbourne, Brisbane and Wellington planning documents which also adopt a planning regime with design based controls supported by site intensity, height and location controls. The use of these controls as part of a design based plan has the benefit of adding certainty to developers and landowners regarding the size and scale of buildings while also providing a useful tool for securing environmental benefits through the floor area ratio bonus system.

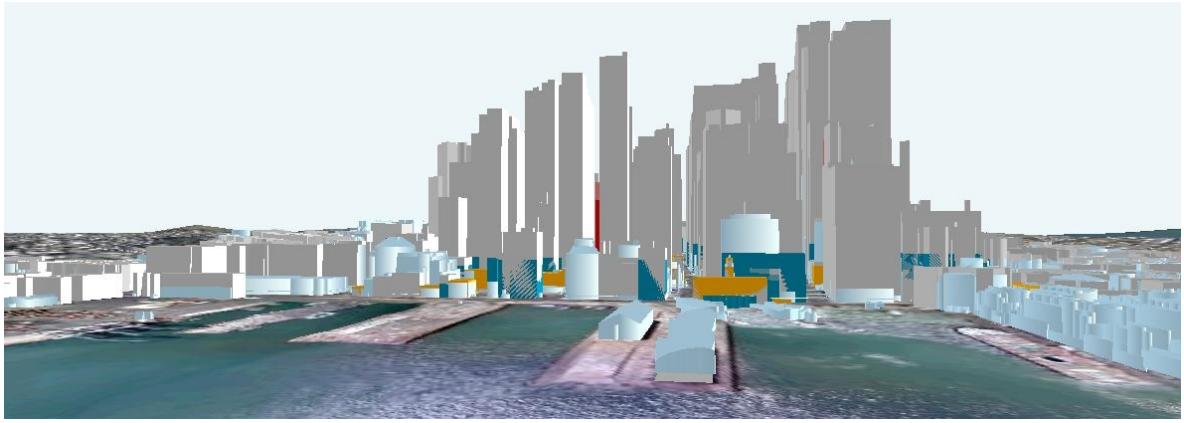
It is important however that an appropriate balance is struck between providing certainty for developers and landowners and providing enough scope for local authorities to require high quality urban design outcomes. In this respect, lessons can be learnt from approaches adopted by other local authorities such as Wellington City which 'experimented' with a purely design based approach with buildings classified as a restricted controlled activity subject to few development controls (predominantly height).

This proved to be unsuccessful as Council had no real ability to require quality urban design outcomes from developers. Wellington has recently promoted Plan Change 48 which now adopts the Auckland City Council's District Plan model with a restricted discretionary status applying to all new buildings with design based assessment criteria and supporting development controls. To this end it is considered that the model in the Operative District Plan - Central Area Section, achieves an appropriate balance between certainty and achieving quality urban design outcomes. This model is generally in line with national and international practice.

There are some gaps and anomalies in the planning framework that have emerged over the past decade as development in the city centre has intensified. To address these, it is necessary to undertake the following:

- A review of the height, site intensity and bonus provisions to achieve the outcomes sought by the Operative District Plan and Auckland City Centre Masterplan.
- A review of the planning framework to provide for growth and change in the city centre.
- Ensure the planning provisions will support the urban form philosophy that underpins city centre's distinctive and internationally recognised visual identity.

Auckland's urban form is influenced by the a suite of planning methods that influence building height, bulk and form and location. The current skyline and topographical feature of Queen Street Valley still evident with building height transitions echoing that form.



The 3-D transparency model shows where the district plan allows for height. There are additional controls that limit the bulk of buildings and currently only towers of dimensions of Skytower (very slender towers) would be capable of reaching these heights. However, these height limits could produce quite a different built form outcome and diminish the remaining topographical expression that characterises the current urban form. One way to manage the amount of height is to limit the site intensity (the ground floor area assigned to each site) which still enables architects and developers the freedom to design quality buildings .

1.4 Recommendations - City Centre urban form

- *The current planning approach in the Operative District Plan - Central Area Section's for managing height, site intensity, design and location should be retained.*
- *Address gaps identified in the current planning framework to ensure that the height strategy and provisions will provide for the anticipated growth of the city centre and reflects the wider planning philosophy that underpins its distinctive urban form and achieve high quality built form.*
- *A review of the following is proposed:*
  - ***Height:** Examine the height strategy and methods to identify areas that require changes to height limits to support urban design and regeneration outcomes.*
  - ***Intensity:** Review the current framework to determine whether it should remain and explore methods that would improve the urban form of the city centre.*
  - ***Built form**: Investigate the various aspects of building form - particularly for tall buildings to determine where changes could be proposed to achieve higher quality building form and design, and enable flexibility to adapt to change.*

2 Height

2.1 Introduction

This section of the report examines the evolution of the city centre's height policy, methods and outcomes over the past 30 years. It covers the city centre's most intensive period of growth and intensification. The current planning framework is discussed and recommendations are proposed on whether to retain or modify the existing policies and development controls pertaining to how the city centre manages height.

Various iterations of the District Plan over the past three decades have modified height controls and combined their application with a method of floor area ratio (FAR) and bonus incentives. The controls in these latter plans have continued to concentrate tall buildings within the core area with a falling height transition to the periphery of the city centre. It was considered that the height in the intensive core commercial area (equating broadly to Queen Street Valley) should only be limited where specific adverse effects could be identified (such as solar access to public places). A light and outlook bonus encouraged slender tower buildings that would allow sunlight between them to the streets below.

Council is about to commission a waterfront height study which will address the future height of buildings fronting the Waitemata Harbour between the eastern edge of the Port Precinct and the western edge of Westhaven Precinct. Accordingly, this section focuses only on the general approach to height and sunlight access within the city centre and does not recommend changes to building heights within areas that are directly visible from the waterfront.

2.2 The current planning framework

Height in the city centre is influenced through the application of a range of methods that inform the scale and bulk of buildings in conjunction with the floor area ratio control. This comprises the General Height Controls and a series of Special Height Controls - which manage the effects of tall buildings on public places and views. In the core city centre where there is no specified height limit, the area is influenced only by the Special Height Controls.

From the peak heights of the core area and adjacent ridgelines, the height methods are intended to provide a transition to lower heights towards the waterfront and landward periphery or to echo the underlying topography. This transition also incorporates the particular character and urban form at the local precinct scale. This is particularly evident in the Victoria Quarter and waterfront precincts.

Beyond the city centre ridgelines, there is a steady transition to lower heights intended to integrate with the character suburbs and urban villages such as Ponsonby and Parnell. With this approach, the Auckland City District Plan sought to 'ensure that views of city centre buildings from outside the area and views to the harbour and surrounding city from buildings within the Central Area are not unduly compromised'.

In the core city centre zone where there are no prescribed height limits, the area is influenced by the Special Height Controls which form a variable height limiting contour above the area. These special controls prevent tall buildings shadowing public open spaces and interrupting protected views across the city. . This method has allowed buildings to reach heights of up to 330m although only Sky Tower has achieved this so far. A recently consented (but not yet built) scheme for a building on Elliott Street would reach 210m. All the other tall towers in the core city centre are around heights of 120-150m. There is some variance in their prominence on the city skyline depending on their location on ridgelines or near sea level.

The methods that influence height in the city centre are:

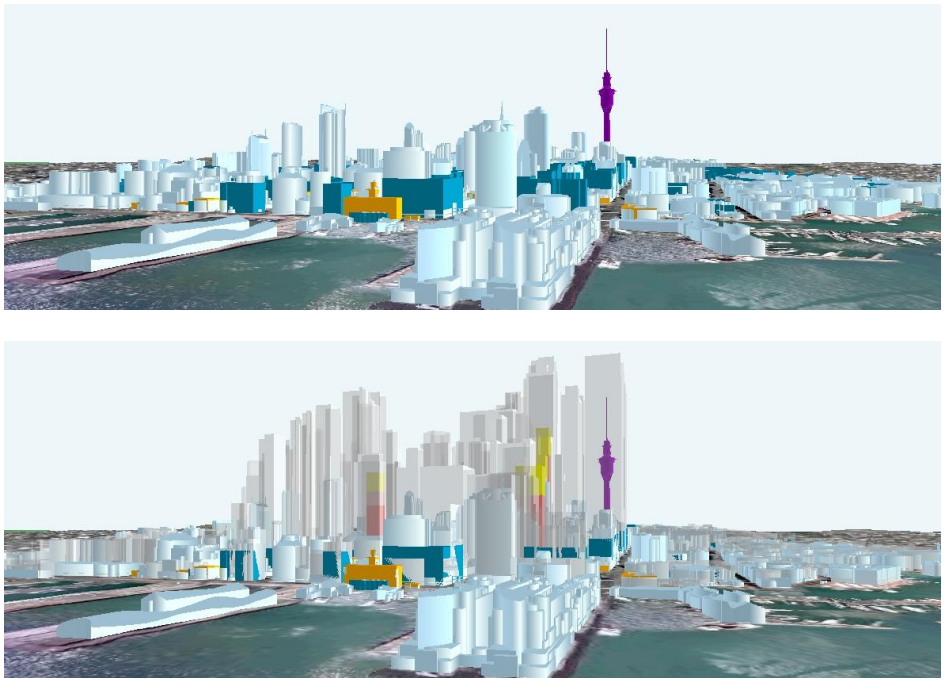
- General height controls
- Special height controls
  - sunlight admission to public places
  - view protection planes to landmarks
  - height control planes
- Site intensity - Floor area ratio (FAR) allocation which controls site development intensity (discussed in the next section of this report).

It is the combination of the general height controls, special height control, and site intensity controls that influence the built and urban form at every scale - site, precinct and city centre wide.

2.3 Assessment of the current planning framework

The various height control methods were tested with 3-D models of the city centre to evaluate the potential outcomes under the current planning framework. It should be noted that where 'transparency modelling' is shown on diagrams, this represents the maximum height provisions limited by the general and special height controls. However, the actual height, bulk and form of buildings will be constrained by other factors such as the amount of FAR that is assigned to a particular site. In many cases, for buildings to reach the heights shown, they would be very slender forms. SkyTower is an example of this - the considerable amount of floor area that was allocated to the large site was manipulated across the site to produce the low scale bulky casino/hotel building and a very slender tower.

3-D model of Auckland's city centre showing the existing built form (top image) and a 'transparency model' which indicates where height could occur albeit with very slim buildings (rather than the bulk that is illustrated here) under the current planning framework.



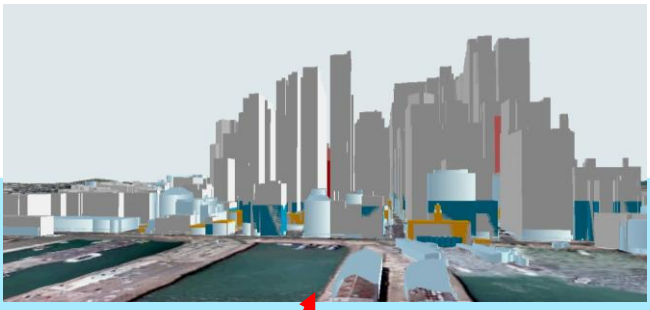
2.4 General Height Controls

There are general height controls for the core city centre and for the various precincts and quarters. These generally range from 12m-52m depending on the precinct and can be read with the General Height Control Map to get a fuller understanding of current heights in the city centre. Where there are specified height limits, there is a high level of certainty in terms of the potential built form outcomes. However, where there are no height limits in the city centre core, this is less predictable. A series of tests were undertaken to help determine possible outcomes and whether any changes to the existing height method is necessary.

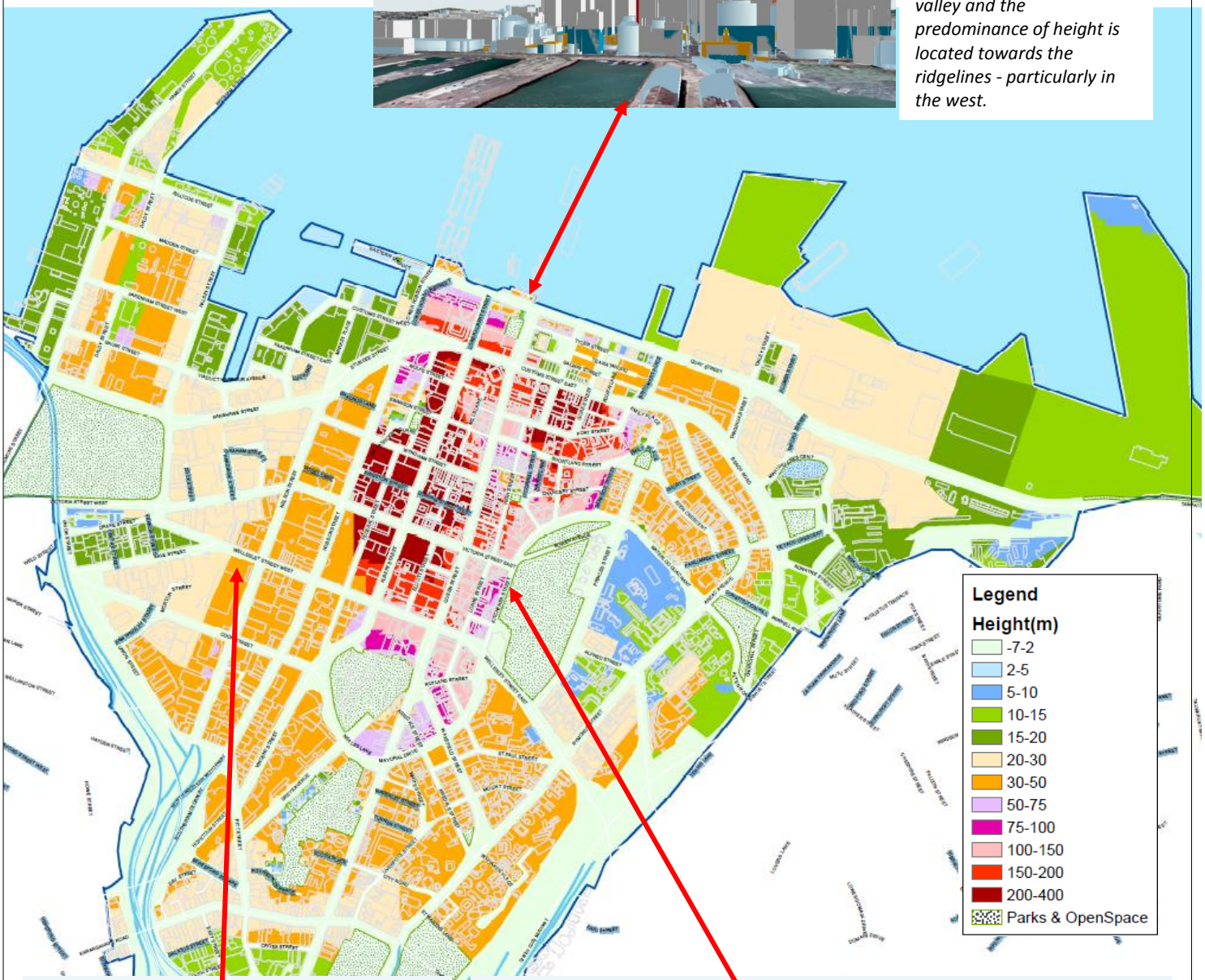
The majority of the city centre has specified height limits. These are generally 50m around the perimeter of the core city centre (where height is limited by other methods). Heights reduce to between 30m -15m towards the periphery of the city centre to provide a gradual height transition to integrate with the fringe urban suburbs such as Parnell and Ponsonby.

The underlying landform is still expressed through height limits that ensure development is appropriately scaled for the topography as well as being responsive to the predominant land uses. The lower waterfront heights and densities provide a strong distinction from the building intensity and heights concentrated on the hills and valleys to the south.

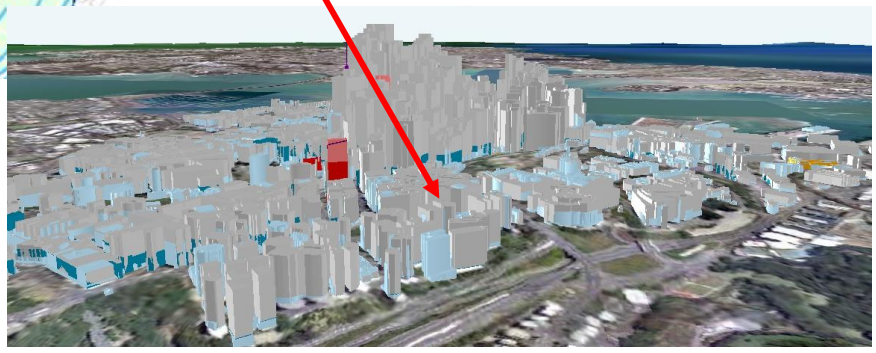
General height controls are also applied to the majority of the city centre precincts. Height limits in many of the precincts have been developed through masterplanning and design processes. They are responsive to the scale of existing built form, block and street patterns, building typologies, heritage and character features, open spaces, aspect, landscape and the activities that characterises each precinct. These variations create a city centre that is rich in local character but also contributing to the distinctive identity of Auckland's city centre.



Height contour plan is translated to a city model to show how the reduced height in Queen Street has retained the quality of the valley and the predominance of height is located towards the ridgelines - particularly in the west.



Height contour plan is translated to a city model to show abrupt building edge between the unlimited height zone, general height controls and the suppressed height created by the Mt Eden view protection planes.



General height limits and special height controls significantly limit height on the eastern side of the city centre core.

This diagram illustrates in a single height contour map the outcomes from the multiple height controls methods. The general height control and special height control maps are combined to show the overall height contours. It illustrates the location and graduations in building height that can be achieved across the city centre. The inserts of the 3-D city model translates the map into possible urban form. It should be noted that the actual built form would be significantly constrained by the site intensity controls which determine the true development potential including the bulk and height of buildings.

Heights on the waterfront are designed to create a lower scale foreground to the city centre and comprise a series of precincts. These have height limits designed to enhance local character and integrate with the core city centre and adjacent precincts. Two dominant built form height transitions occur on the waterfront as a result of the city centre's wider built form planning framework and the individual precinct height provisions. These are:

- East - West height transition: Height transitions down to the waterfront from the Queen Street Valley core area to 15-18m at the fringe with Quay Park and Parnell in the east, and Westhaven and St Mary's Bay in the west.
- South - North height transition: Building height (enhanced by topography) transitions down from unlimited height in the CBD core, and from 50 - 30m in the areas to the south of Beach Road, Customs Street and Fanshawe Street to low heights on the northern waterfront edge.

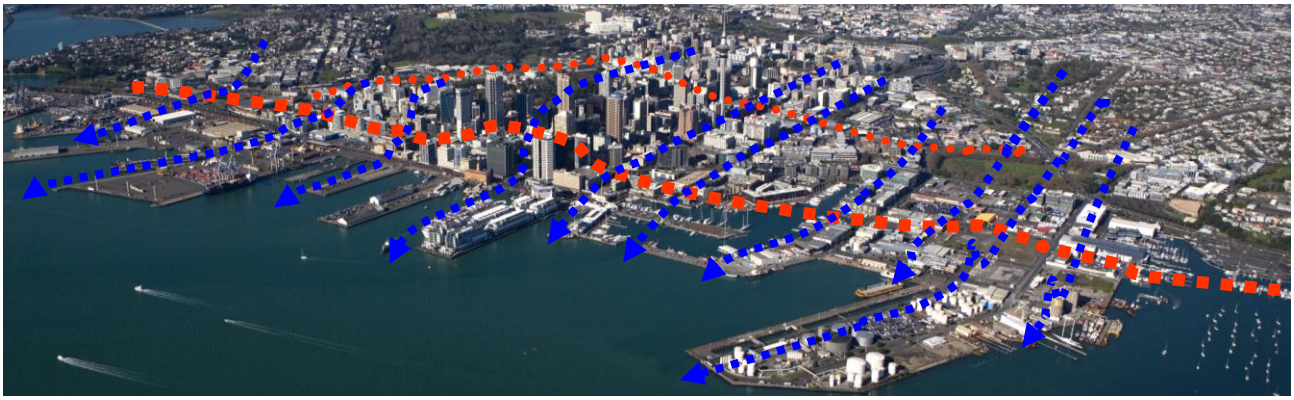


Diagram shows the two built form height transitions across the waterfront between Quay Park and Westhaven; and between the core city centre, urban villages (Ponsonby, Parnell) and the waterfront.

Changes to General Height Controls for areas requiring substantial redevelopment will be addressed through a comprehensive planning, infrastructure and urban design process. This is to ensure that there is a cohesive approach to the wider waterfront and the discrete precincts and quarters that comprise the distinctive urban form. This includes areas such as the eastern area of Quay Park.

There are some areas in the city centre that have been investigated in more detail to determine whether minor modifications to General Height Controls would provide considerable urban design, regeneration or land-use benefits. The areas reviewed are:

- Regeneration areas: Karangahape Road area, Victoria Quarter, Beach Road, Alten Road, Stanley Street
- City centre core - unlimited height zone

2.4.1 General height modifications to support regeneration

This research examines the nexus between height, floor area ratios and potential city form of in areas already undergoing regeneration. The areas investigated are south of Karangahape Road (K-Rd) and the Victoria Quarter.

Some blocks within these areas suffer from poor built form which is partly a consequence of a poor relationship between the amount of site intensity and height. This has created large bulky slab-form buildings - particularly evident on the Hobson Street ridgeline. Providing more height will enable greater flexibility to improve design quality, open space, light and outlook within a larger development site envelope.

Increases in height and in some places, site intensity will help facilitate regeneration that will be of an appropriate scale and form to successfully integrate with surrounding development. New height limits are cognisant of the view protection planes that cross and suppress height in some of these areas. Proximity to character precincts and heritage buildings are another consideration for limiting height and site intensity at levels that will be appropriate to retain these special values.

Another factor has been the types of activities that are likely to predominate in these areas. All the regeneration areas are likely to be mixed use. Therefore, both residential and commercial floorplates were modelled to understand the full implications of either building form in these areas. Commercial development

tends to prefer large floorplates in low height buildings. In contrast, residential development capitalises on the light and outlook potential of tall buildings.

- **Regeneration area: Karangahape Road area**

The purpose for modifying height and site intensity within the southern aspect of Karangahape Road ridgeline is to encourage regeneration in character with the adjacent K-Rd precinct. The height limits are set to ensure buildings are not higher than those on K-Road, are below the Mt Eden height protection plane and to reflect the underlying topography. The site intensity is set at a level to encourage design creativity with slender buildings or lower buildings incorporating open spaces. Large bulky block-scale development is less likely with the lower site development potential.

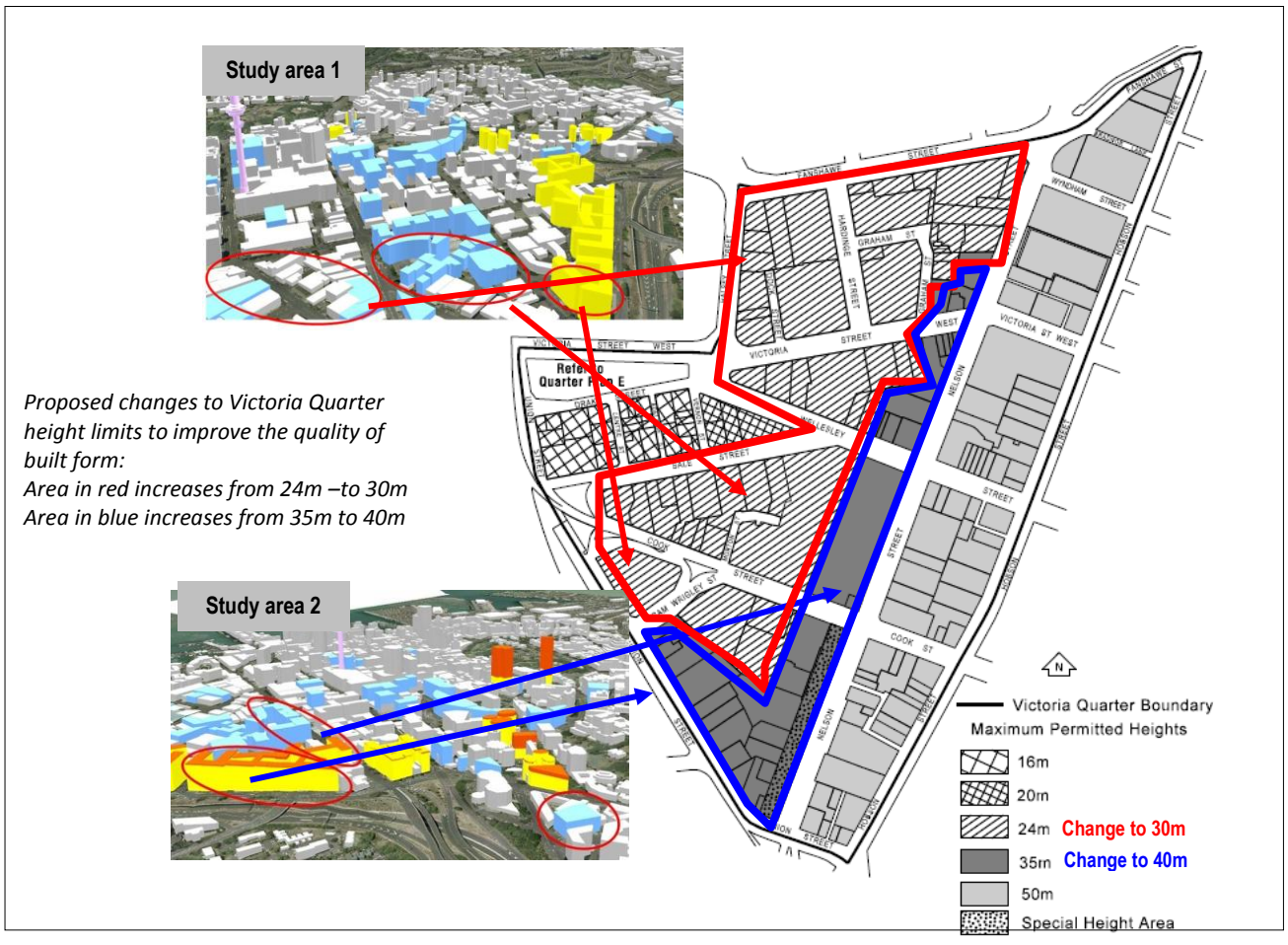
*Diagram shows location for increase in height from 15m (shown in blue) to 35m (shown in orange). A minor increase in site intensity from 3:1 – 4:1 will encourage design creativity and building form that is consistent with the Karangahape Road character. The diagram is **not** indicative of the form of development – it shows the blocks and sites that will have modifications to the planning provisions.*

- **Regeneration area: Victoria Quarter**

In the Victoria Quarter the height strategy provides for the greatest building heights on the ridgelines which decreases to lower heights around Victoria Park at the base of the hill. The general height limits are specified to reflect the underlying topography and to enable sunlight and views to permeate through the area.

The current 24m height limit on the eastern side of Victoria Park is poorly scaled in proportion to the permitted maximum FAR, creating bulk slab-form buildings. Increasing the height limit will provide more scope for both commercial and residential development to design tall slender buildings that allow for greater light and outlook. It will also better align with building height in Wynyard Quarter on the northern edge of Victoria Park. This will enable the industrial area to redevelop with a scale that will also complement the Victoria Park Market precinct.

However, in some parts of Victoria Quarter, it is evident that there is a poor relationship between the height and site intensity (GFA) controls which is resulting in bulky over-scaled buildings with limited outlook on small sites. Increasing the height limits without increasing the amount of GFA will provide a larger site envelope enabling developers to build taller slender buildings with better light and outlook. Another consideration for height limits in this area is the Mt Eden view protection plane which suppresses height in this area - particularly on the ridgelines. Integration with adjacent blocks



Proposed changes to Victoria Quarter height limits to improve the quality of built form:
Area in red increases from 24m –to 30m
Area in blue increases from 35m to 40m

Regeneration area: Beach Road /Alten Road/Stanley Street

This area is under pressure for regeneration at a greater height and intensity than is currently provided for in the Auckland District Plan (Central Area Section). The Isthmus Section of the District Plan has facilitated intensification of the area and there is a need to update the City Centre provisions to complement regeneration.

It is proposed to increase the height limits from 15m to 30m ensure this area is complements development tin this area. This includes the Quay Park precinct area, southern Beach Road, Carlaw Park and the Learning Quarter where greater height limits or densities have enabled these areas to undergo significant regeneration.

There have been a number of sites redeveloped with building heights up to 30m on the northern side of Beach Road over the past decade. This demonstrates that the 30m height limit is viable for regenerating the area and achieves successful urban design outcomes such as an appropriate scale to provide enclosure for the width of streets in this area.

The 30m height limit in this area would enable an appropriate building scale to create an attractive built edge and enclosure for the predominately wide streets. This built form height also continues to allow sunlight to streets and provides a transition to Parnell, Grafton Gully and other development in the vicinity. The 30m height limit will not infringe on the Auckland Museum View Plane.

This height increase would be accompanied by an increase in development potential. The Basic Floor Area Ratio has remained the same at 3:1 but the MTFAR has increased from 3:1 to 4:1.

Left images shows a 30m building on the northern side of Beach Road – the sites beyond and in the two images below will also have the height limit increased to 30m. (image source: Google Maps)

Left: Map showing existing area with a 50m height limit which will be retained and the proposed 30m height limit.

50 metres

30 metres

2.4.2 Unlimited height zones

The unlimited height areas in the Auckland City District Plan will be retained. However, better integration with the Special Height Controls and other methods (refer section Aotea Special Height Control Plane and built form) will ensure that the urban form of the core city centre has adequate growth potential and can achieve quality urban design outcomes. New provisions to improve the quality of built form in this area are proposed in the final section of this research paper.

2.4 Recommendations - General Height Controls

- ***General height controls:***
  Retain the General Height Control height method as it is the integral to the other height and site intensity control methods. General height controls within precinct plans have been effective at creating distinctive character neighbourhoods that are integrated within the wider city centre urban form. Specified height limits (particularly when accompanied by a masterplan or design guidelines) provide a high level of certainty for the community and developers.

  In areas of unlimited height, the special height controls and FAR methods successfully manage height at a scale that is appropriate to the site, precinct and the wider city centre.. Opportunities to enable graduated transitions between areas of differing height could be considered in future.

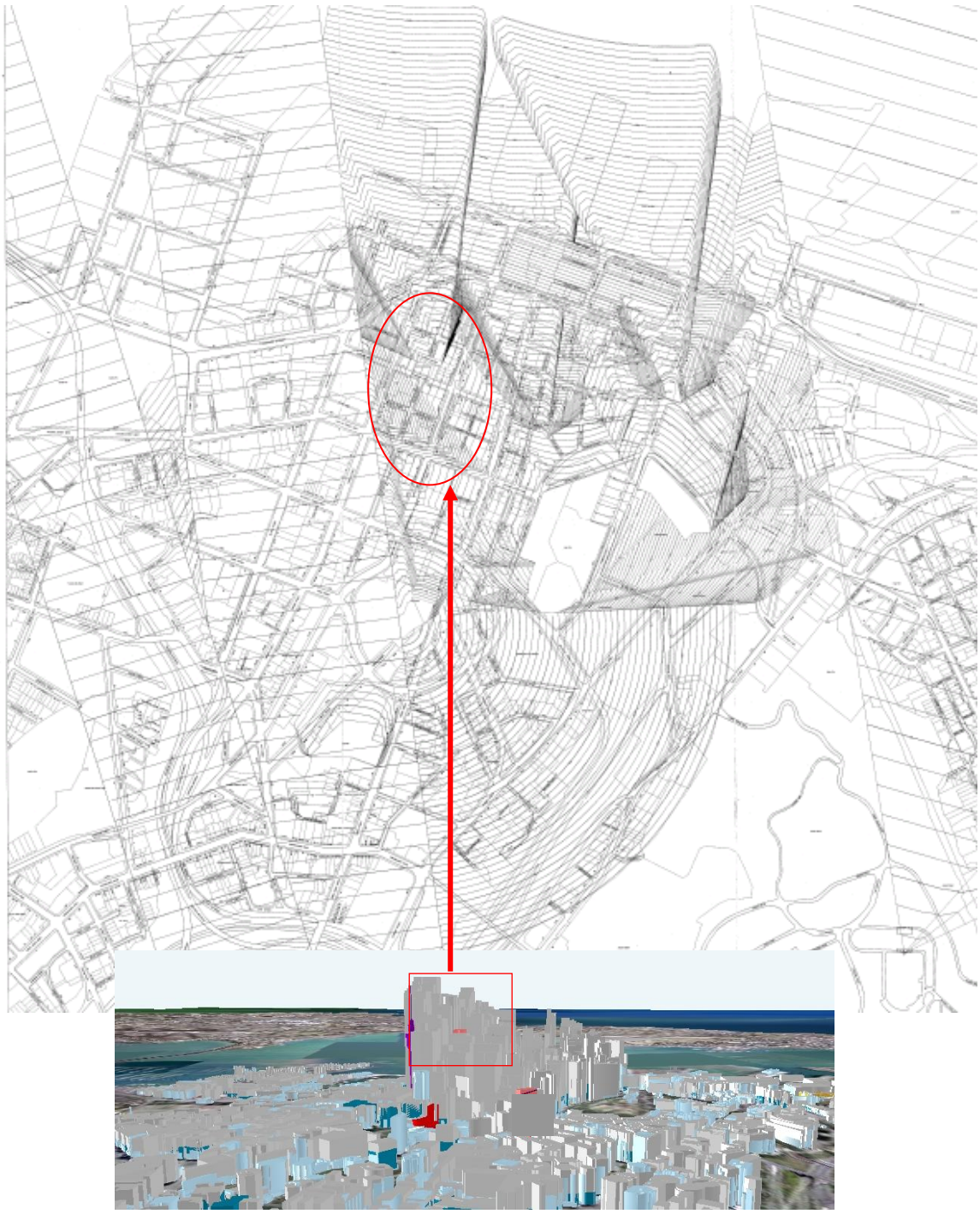
- ***Minor modifications to General Height Controls to support regeneration areas:***
  Karangahape Road: south-western corner of the K-Rd area *- Increase from 15m to 35m; This height limit will enable an appropriate scale of residential development and office development on the small sites that characterise this area. The height limit is in line with those provided for in the Karangahape Road precinct.. It is also below the Mt Eden View Protection Plane*

  Victoria Quarter south western corner and central precinct area *- Increase height from 24m to 30m. The current height limits are contributing to poorly scaled bulky buildings in this area. Increasing the height limit will provide more scope for both commercial and residential development to design tall slender buildings that allow for greater light and outlook. It will also align with Wynyard Quarter building height on the northern edge of Victoria Park.* ***Victoria Quarter southern boundary*** *- Increase height from 35m to 40m. This area suffers from buildings that are too bulky for their sites and an over-reliance on slab building forms due to a poor ratio between site intensity and limited height. There is potential to marginally increase height in this area without affecting the Mt Eden view protection plane or significantly effect residential areas to the south of this area.. The height increase will encourage development of slender tower forms with greater light and outlook between buildings.*

  Beach Road, Alten Road, Stanley Street *-* ***area****: - Increase height from 15m to 30m. This height limit will enable the development of commercial, residential and potentially education-associated buildings. It will encourage the area to redevelop with a buildings that are appropriately scale to create a well-defined edge to the wide roads that predominate in this area. The height limits will also provide a gradual transition in height towards Parnell – particularly along Stanley Street which is undergoing a large transformation on the Carlaw Park land. Increasing the MTFAR from 3:1 to 4:1 allows additional development potential consistent with other fringe city centre areas.*

2.5 Special Height Controls

There area a range of Special Height Controls. These include the admission of sunlight to public places, view protection and height control planes. They establish a complementary set of special height controls that overlay the General Height Controls. These take precedence over the General Height Controls and redefine the upper height limits even in those areas that theoretically have unlimited height. The actual height limits are determined by an overlay of contours that prevent buildings from exceeding height in a specific location. This creates considerable and distinctive height variance across the city centre



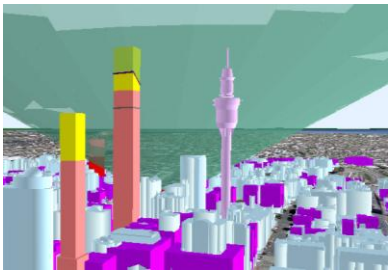
Plan shows the actual height contours that give effect to the various Special Height Controls (sunlight protection and view protection planes). Some buildings are designed to optimize their building envelope below the contours which produces unusual building and roof forms at upper levels. The model below shows how these could translate to potential height limits - particularly in the area that has no set height limits.

2.5.1 Sunlight admission to public places

The admission of sunlight to public places is considered essential to people's enjoyment of the city centre. In key public places sunlight penetration has been protected by the establishment of defined sunlight planes or cones. Sunlight in squares and parks are a valuable feature of the city centre. The angles of those planes have been calculated to enable the specified public areas to be in sunshine for those times of the day when they are most intensively used. Many of the USA and Canadian cities studied have similar provisions..

There are development controls in the District Plan to protect the admission of sunlight to public places. The consequence of these controls are lower building heights to the north of public parks and plazas. It has also influenced the form and rooftop designs of buildings around the city which are subservient to the sunlight or view plane protection controls.

Some parts of the city rely on general height controls to protect sunlight to public places which is a more rigid approach. While this can be effective it does not provide for the variance across individual sites that occurs with the contours of the sunlight protection planes or opportunities to capitalise on land contour that is lower to the north of open spaces.



This diagram shows the impact of the Aotea sunlight protection plane on a proposed tall building The green cone of the Aotea sunlight protection plane intersects the top of Auckland's tallest (consented) building – 106-108 Albert Street. The special height controls have established its height at 210m.

Sunlight and shadow diagram Midday - 21 June - midwinter

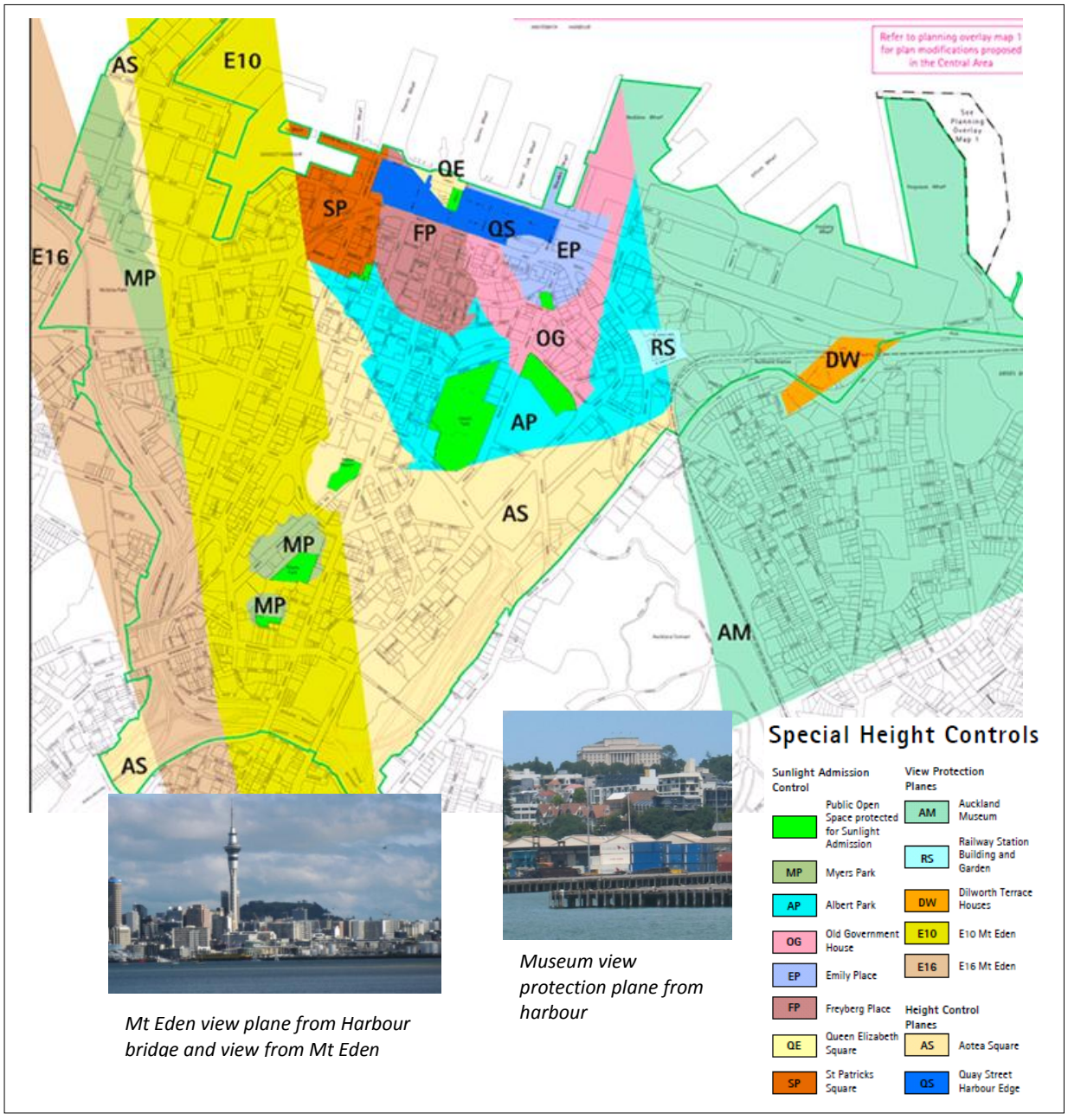
The admission of sunlight to public places control influences building height. The top image shows the extent of that influence for Albert Park and Old Government House with lower buildings. The shadow diagram below shows the location of public places with sunlight protection and how successful the approach has been ensuring midday sunlight in mid winter.

2.5.2 View protection planes to landmarks

Along with general height limits, other planning mechanisms have a significant influence on the urban form of the city centre - at both regional and local scales. There are four regional view planes that cross the city centre to protect citywide and local views. These are:

- Views to Mt Eden from two viewpoints – one from the North Shore near the base of the harbour Bridge – also known as the E10; and a view to Mt Eden from the top of the harbour Bridge (E16)
- Views from the Auckland War Memorial Museum to the harbour
- Views to Dilworth Terrace houses from Quay Street.
- Old Railway Station Building and Gardens from Beach Road.

The views celebrate natural and built landmarks that contribute to the city's skyline and urban form. These five view protection planes cross over the city centre and suppress building height in some areas. The most influential are the Mt Eden and Museum view shafts. The effects on built form is most evident on the western side of the city where the Mt Eden view shafts suppress height across the Victoria Quarter. The Museum and Dilworth view shafts suppress height across the east of the city centre.



Mt Eden view plane from Harbour bridge and view from Mt Eden

Museum view protection plane from harbour

District Plan (Central Area Section) Special Height Control Map –This is a diagrammatic form of the contour map and includes sunlight admission control, view protection planes and height control planes

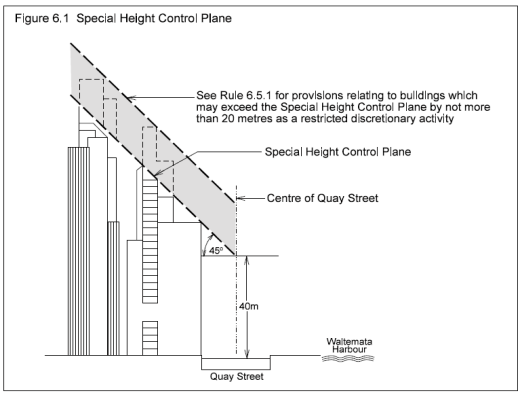
2.5.3 Height control planes

Height control planes ensure building redevelopment complement and enhance rather than intrude on some of the city's special environments. There are two areas where height control planes are applied:

- to buildings on a section of the waterfront at the western end of Quay Street. It is known as the Harbour Edge Height Control Plane.
- to buildings across the Aotea area and upper Queen Street Valley basin - centred on Aotea Square. It is known as the Aotea Height Control Plane.

2.5.3.1 Harbour Edge Height Control Plane

The Harbour Edge Height Control Plane, applies to all sites along a section of Quay Street, Lower Hobson Street and Britomart Place. The purpose of the control is to modulate built form to support a transitional height interface between the core city centre and waterfront. Given the scale of buildings, the concession is subtle but never the less, has become a feature of tall towers facing the waterfront



This control requires buildings of approximately 45-50m on the southern side of Quay Street to be recessed at a 45 degree angle from a fixed midpoint on the street. The recession plane reinforces the stepping down of building height from the core city centre to the waterfront. The control includes provisions to exceed the height control plane by a maximum additional height of 20m and a requirement for specific building alignment that allows for views to permeate between buildings.

2.5.3.2 Aotea height control plane

The purposes of this control are to:

- maintain a sense of orientation both for viewing points from the Aotea open spaces to key buildings and for views into the open space from buildings and other points around the city centre.
- avoid tall buildings to dominate or visually intrude into Aotea Square's open space and thereby reducing the degree of seclusion that the space can otherwise provide.

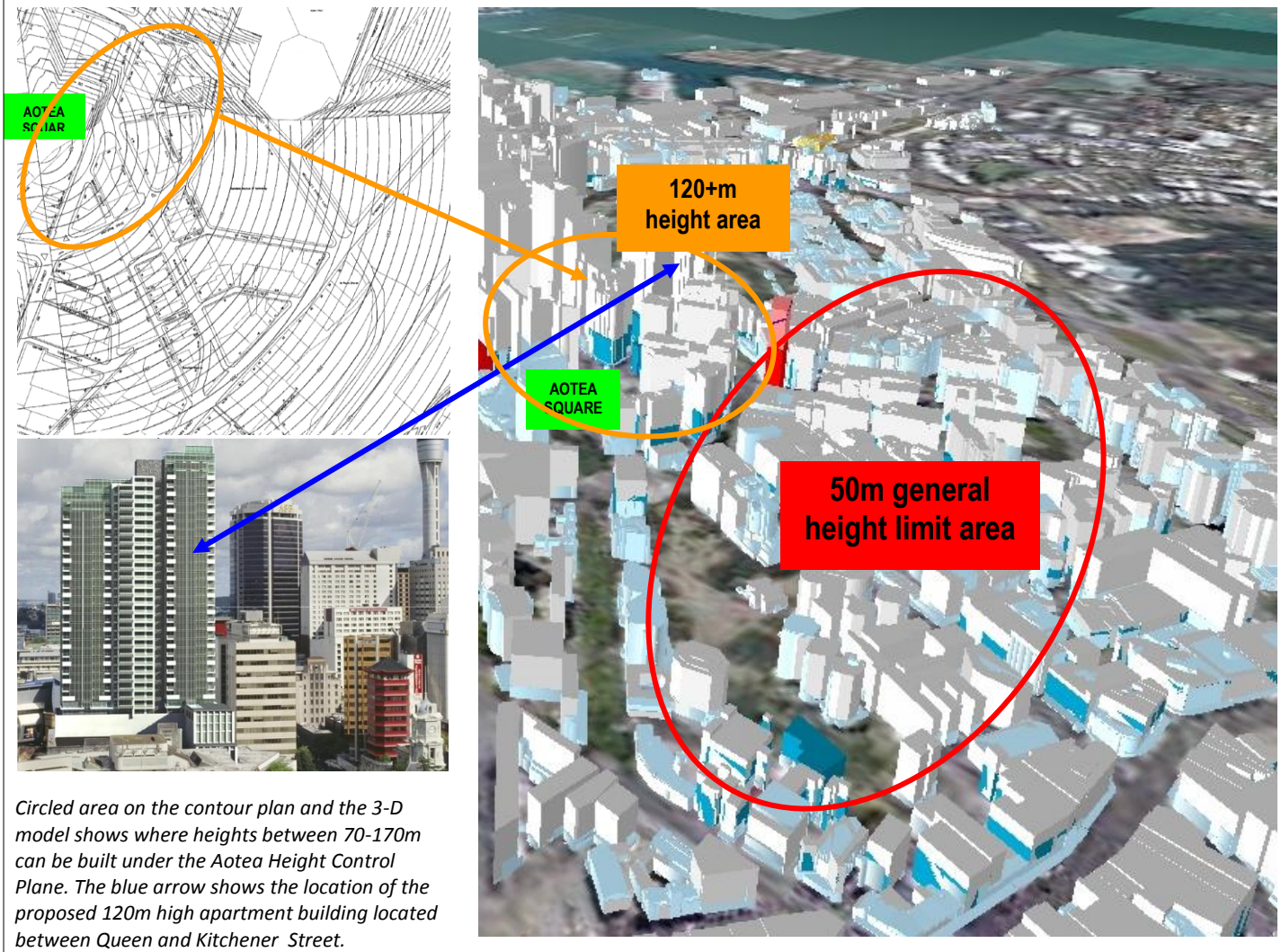
The Aotea height control plane radiates from Aotea Square and is designed to emphasise the basin of the Queen Street Valley and the prominence of the open space. It is complemented by the Aotea sunlight protection plane to the north of the Square. The Aotea height control plane recedes from the Square with a steeper contour than many of the other special height controls and even near its source, buildings can achieve heights in excess of 100m.

The complex range of methods to determine height in the Aotea basin has created some anomalies that are producing undesirable outcomes and erodes the philosophy that underpins the intent of the height control plane and character of the area. This area has a predominance of low scale scheduled heritage buildings and open spaces. Aotea Square is Auckland’s premier civic open space and the height control plane was designed to ensure it’s pre-eminence at the heart of the city.

The 50m general height limit that prevails across the majority of the area was designed to enable outlook to Aotea Square, daylight and a building scale appropriate to the street and block pattern. However, between this area and Aotea Square, the Aotea Height Control Plane which allows for building heights in excess of 100m that could create a barrier of buildings that undermines the intent of the purpose of the Height Control, urban quality and liveability of the area. The integration between two different height control methods requires amendments to ensure these important city values are achieved.

It should be noted that there are several sites that have resource consents for buildings taller than 50m in this area. These may or may not be constructed. This proposal primarily considers the optimum urban design, development potential and built form outcomes for the area in future.

Plans, models and images that illustrate the anomaly in the planning framework due to poorly integrated height methods in the Aotea area.



Circled area on the contour plan and the 3-D model shows where heights between 70-170m can be built under the Aotea Height Control Plane. The blue arrow shows the location of the proposed 120m high apartment building located between Queen and Kitchener Street.

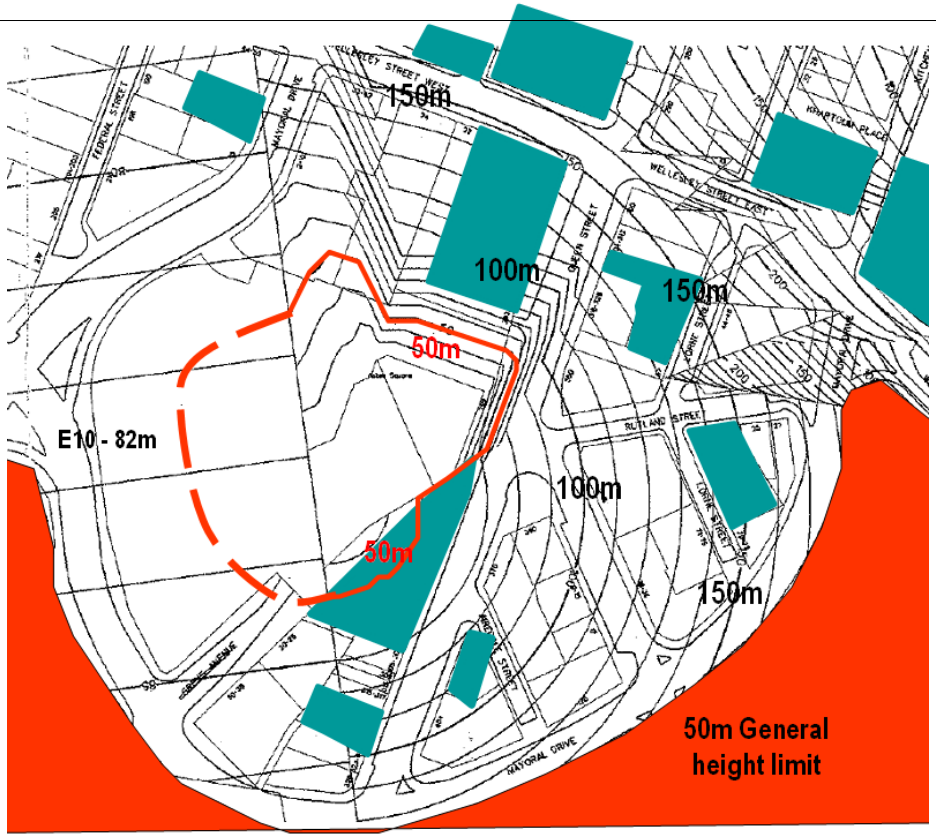


Diagram shows a contour plan and the relationship to the general 50m height zone. A large part of the area relies on the contours of the view protection plane which allow for building height that would overly dominate the large number of heritage buildings (indicated by green sites). This level of tall buildings will create a barrier to the 50m buildings behind and further up the slope. The 50m contour line is highlighted in red and illustrates how there is a considerable zone of excessive height between it and the 50m general height zone.

2.5 Recommendation - Special Height Controls

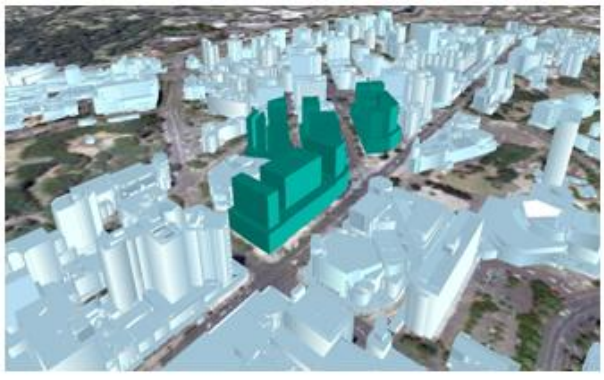
Retain the sunlight admission to public places control and locations as it provides significant public benefits, contributes to the character of areas and in most cases, does not inhibit the development potential.

Retain the view protection planes to landmarks. Comprehensive reviews should be undertaken if there are proposals for changes to the view protection planes.

Retain the Harbour Edge Height Control Plane without modification.

Modify the Aotea height control methods to include a General Height Control of 50m across the area shown in the adjacent map. The Aotea Height Control Plane will remain and will have precedence up to a maximum height of 50m - after which the 50m General Height Control applies. This will restore the intent of the height philosophy for the Aotea Quarter. Refer diagram below.

Red line circles the area proposed for a General Height Control of 50m. The Sunlight Access Plane and Aotea Height Control Plane still apply where the height contours are lower than 50m.



Modeling of the Aotea area with the proposed 50m height limit. The majority of sites will be able to realize their full site development potential within this height limit.

3 Site intensity

3.1 Introduction

This section examines the site intensity controls that are applied in conjunction with the height controls to establish the bulk and height of buildings relative to their site area, the precinct and wider city centre. The background to these controls is outlined and their effectiveness for Auckland's city centre is evaluated. This is followed by a series of tests to determine whether changes to the current ratios are required.

3.2 The current planning framework

The current system uses a basic floor area ratio (BFAR) allocation which is a permitted baseline for the amount of floor area allocated to a site. An increase in the allocation can be achieved by selecting bonuses c that can achieve a maximum total floor area (MTFAR) that is specified for a given site. Bonuses can be used to partially or fully bridge the gap between the two ratios.

The bonus system results from a form of planning known as 'incentivised planning'. This system allows developers additional floor area in return for incorporating perceived 'public benefits' into their developments. There is a suite of bonus provisions with different allocations of floor area available to developers. These include bonuses for light and outlook, accommodation, public art, open space, through-site links and for the use of transferable heritage floor area. Developers can select bonuses best suited to their site and market requirements. The site intensity controls give the developer a high level of flexibility regarding building design and shape.

3.3 Assessment of the current planning framework

The advantages of retaining the site intensity (FAR) method are:

- the BFAR system enables a high degree of design flexibility for a site and the bonus provisions used to achieve the MTFAR.
- in conjunction with other building controls (such as height), it is an effective method for managing intensity and scale appropriate to a site and specific areas.
- the inclusion of bonuses to incentivise desired outcomes in developments including incentives for particular activities, public amenities, built form and heritage protection.
- there is certainty of development rights and a high level of predictability, fairness and equitability when all bonuses are specified in the Plan.
- developers have the freedom to select from a variety of bonuses to suit a particular development and optimise economic returns.
- it enables development to be managed at an appropriate scale and concentration proportionate to the rest of the city.
- the MTFAR will also set a quantifiable limit to the amount of heritage or character floor space that could be purchased in areas with unlimited height.
- the site specific application of FAR in a city with a wide range of site sizes, this system, encourages variety in built form, and avoid a bland urban uniformity that tends to occur when height is the primary determinant of building form.
- the combinations of bonuses that potentially produce the MTFAR for each part of the city enable a tailored response to local conditions (such as the effects on areas with a concentration of heritage)while still managing the overall urban form.
- enables capacity studies to be undertaken to monitor and manage the supply and location of development capacity for future growth.
- the FAR system can be fine-tuned at any stage to address an issue or provide additional development potential and opportunity.
- A site's development intensity (BFAR and MTFAR) represents the quantum of development potential for a given site which is often used in valuation by the property market.

The disadvantages are:

- It is critical to achieve the correct balance between the amount of development potential (FAR) and height to ensure the sites have an adequate development envelope to produce quality design outcomes.

- It is relatively complex to formulate, understand and apply - particularly when combined with other controls such as sunlight protection to public places.
- It may encourage site amalgamation in areas that would not benefit from the potential development outcomes that would be enabled from this approach.

The city centre currently has a large amount of unused development capacity so there is no pressure to increase site intensity - BFAR or MTFAR to cater for future growth. The Auckland Plan forecasts for growth in the city centre assume up to 145,000 employees and approximately 50-60,000 residents by 2040. The current provisions will comfortably provide for this amount of growth.

The BFAR and MTFAR methods offer good flexibility for managing the amount, location and form of development in the city centre. The advantages far outweigh the disadvantages of this planning method. Following extensive testing, it is proposed that the majority of the Basic and MTFAR ratios remain as set out in the Auckland City District Plan. There is significant development potential remaining in the city centre.

Reducing and streamlining the number of bonuses that comprise MTFAR is one way the approach can be simplified and provide more effective outcomes for the public and the city. This has been undertaken in a separate review.

3.3.1 Review of BFAR in Queen Street Valley precinct

The Auckland City Centre Masterplan highlighted the importance of the core Queen Street Valley area as the 'Engine Room' of the city's economy. To support its pre-eminence as Auckland's Central Business District, the accommodation bonus was deleted from this zone. While residential can still occur in this area, it will not be incentivised. The area's location close to public transport and the value of enhancing a strong business cluster in this area is encouraged. The Basic FAR has been increased from 6:1 to 8:1 to offset the removal of the accommodation bonus from the zone,

3.3.2 Review of MTFAR in the city centre

The purpose of this review was to evaluate the possible urban and built form outcomes from the current controls and consider options and built form benefits from changes. Buildings are becoming larger in both height and bulk in many international cities - particularly in Asia. Given this emerging appetite for large scale development, it is important that the effects of this are considered in the city centre and an appropriate scale and intensity be determined for Auckland that enhances its identity, liveability and prosperity.

An investigation of the amount of take-up by developers to optimise the development potential of their sites using the bonuses to achieve the MTFAR revealed the following:

- Of the 30 city centre sites analysed, approximately 70% of developers applied for bonuses to achieve the maximum development potential for the site.
- The majority of developments that did not apply for bonus provisions were for residential buildings.

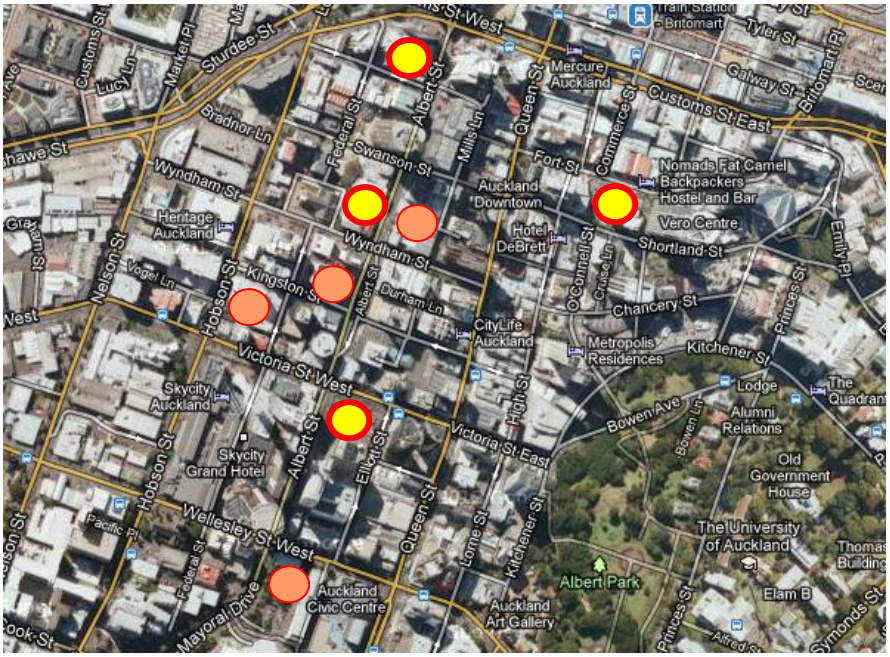
Overall, this suggests that most developers are optimising development potential for their site using the bonus provisions.

A review of MTFAR in the core city centre and regeneration areas has provided the opportunity to evaluate whether changes are necessary. The assessment looked at the effects changes to MTFAR and height could have on all scales of urban form (street, neighbourhood and citywide) and the potential to encourage regeneration in some areas.

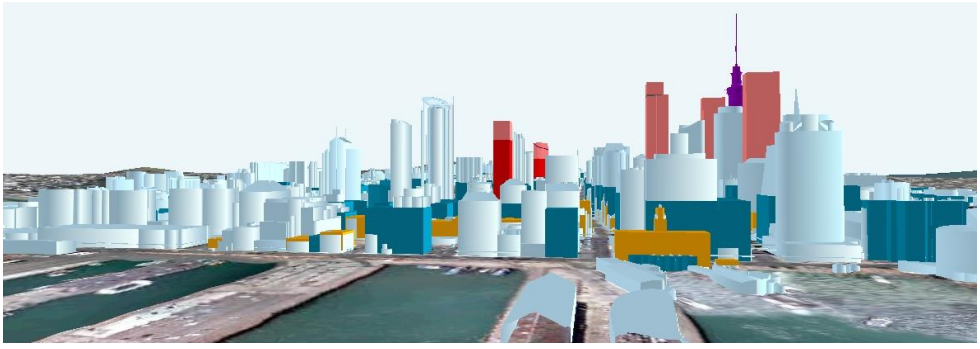
Various sites were selected from the core city centre where height is unlimited and the MTFAR is at its most generous - currently 13:1. A higher MTFAR of 17:1 based on a new selection of bonuses and an increased basic floor area ratio (8:1) was tested to evaluate the effects on the city centre. All sites were tested with a residential scenario as this activity favours tall buildings and will have greater impact on the urban form. A third investigation was a review of the amount of MTFAR relative to the height limits in the Victoria Quarter.

Buildings were modelled with podium heights of 13m across entire sites and towers with 600m2 floorplates (typical of many city centre apartment buildings) and 3m floor to floor stud heights to determine a realistic form. Many of the USA and Canadian cities studied allowed a maximum tower floorplate of 600m2 to ensure towers remained slim yet marketable.

Examples of modeling MTFAR 13:1 and 17:1 on sites with unlimited height



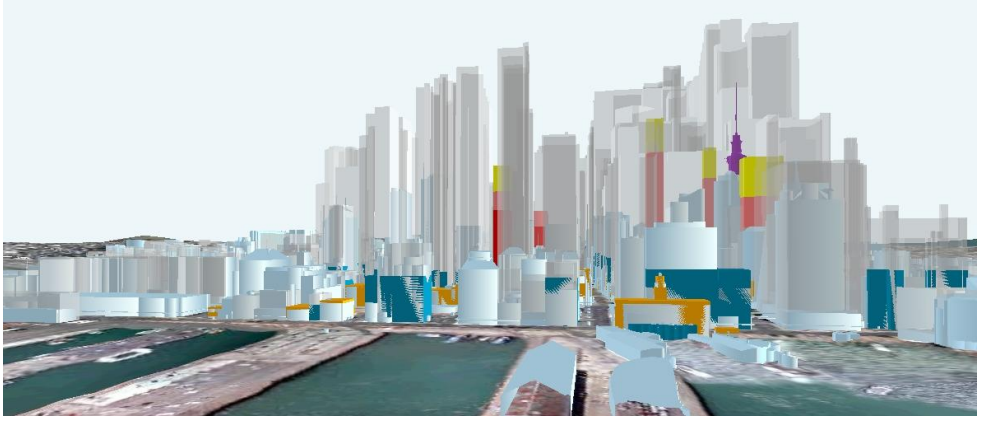
Pink spots show locations for potential redevelopment with 13:1 MTFAR tested in the 3-D city centre model to ascertain the effects on urban form and amenity under current rules. The red and yellow spots are sites that were tested with 17:1 and 13:1 MTFAR. In several instances, realistic assumptions on site amalgamation or redevelopment were made to achieve adequate site sizes to properly test the scale of buildings possible. For all sites, a tower podium height of 13m across the entire site and a 600m2 tower floorplate was extruded to indicate a potential built form. In areas of unlimited height, reductions in the size of upper floors could see taller buildings than proposed in the 3D model.



View up Queen Street from Queens Wharf: Note: The orange colour indicates heritage buildings, shades of blue show current buildings.
Pink colour shows buildings modeled at 13:1
Yellow colour shows additional height on buildings modeled at 17:1

Top image shows 9 buildings modeled with 13:1 (pink).

Middle image shows 4 buildings modelled with 17:1 MTFAR (yellow).



The bottom image with the transparent overlay shows the heights that would be possible if a greater amount of FAR was allowed (probably more than double the current amount of MTFAR).

The outcomes from the research showed that:

- Enabling an MTFAR of 17:1 in areas with no height limit when the remainder of the city has an MTFAR of 10:1 and height limits of 50m or less would produce a major height discrepancy across the city centre. It would create an urban form with a large concentration of towers rising as a block on the ridgeline between Customs Street West and Wellesley Street, Albert Street and Hobson Street. The massing of towers in this area would be over dominant and erode the 'centrality' of tall towers that currently expresses the city's business district in the existing urban form. The amount of 13:1 MTFAR and various height constraints ensure there is a good level of transition and integration throughout the city. The exception is the effects of the Mt Eden view protection plane that abuts the area of highest buildings. This lack of transition should be avoided in future and an MTFAR of 17:1 would only exacerbate this on an even wider scale.
- In the area north of Victoria Street, heights between 200m - 400m can be achieved before a reduction in height and intensity towards the waterfront area occurs. The fine network of streets that bisect Federal Street could become dominated by buildings that are of a disproportionate scale to the public realm qualities. Increasing the MTFAR could lead to a proliferation of tall buildings that would be poorly integrated with the waterfront and the Victoria Quarter to the east. Maintaining the MTFAR at current levels is one way that this transition can be moderated.
- Some buildings were constrained by factors such as sun access or view protection planes before they could realise the full development potential enabled by the increased 17:1 MTFAR. This could cause the large amount of GFA available for a site, being consolidated into large 'bulky' and over-scaled buildings.
- The large number of relatively small sized sites within areas of unlimited height and a potential 17:1 MTFAR could lead to buildings that are too slim and disproportionate to the site as developers attempt to optimise development potential (such as the Formula 1 Hotel, 20 Wyndham Street). Alternatively, there could also be a risk that the only way to get marketable floor plates would be through site amalgamation. This could erode the inherent fine-grained character of the city centre and enable mega structures that would be poorly integrated with the existing urban form.
- A risk would be that the time it could take for new development to use the increased development opportunity of 17:1 MTFAR could be decades. As a result, the skyline may become dominated by what would appear as 'random' towers rather than a cluster that would create a more cohesive urban form for the city centre.
- An MTFAR of 17:1 could enable taller and larger scale buildings that en masse, would increase the amount of shadowing in the city centre. This level of development on the western Albert-Hobson Street ridgeline will reduce afternoon sun and over-shadow the Queen Street Valley area where the highest concentration of pedestrian activity occurs. While there are no sunlight protection controls to Queen Street, it is desirable that the shading effects of tall buildings be minimised on the public realm.

3.4 Recommendations - Modifications to BFAR and MTFAR

Retain the BFAR and MTFAR limits for the majority of the city centre as these provide an appropriate level of development and will support an urban form that has coherence with existing development and the city centre character. However, there are a few locations in the city centre where the Basic and MTFAR provisions could be modified to complement changes in height limits or to incentivise better design outcomes. These are:

- ***Karangahape Road – south-west aspect -*** *With significant increases in height, the south-western Karangahape Road area will be able to transition from a light industrial area to a mixed use area that will complement the precinct. Currently it has a basic FAR of 3:1 and MTFAR at the same level - 3:1. It is proposed that the basic FAR be retained at 3:1 but the MTFAR increased to 4:1. A change in the height limit will enable considerable opportunities for redevelopment of many sites in future.*
- ***Beach Road/Alten Road/Stanley Street -*** *This area will benefit from greater heights and more development potential to enable the level of regeneration that has been enabled in adjacent areas. The Basic FAR remains the same (3:1) but the MTFAR will increase from 3:1 to 4:1.*
- ***Basic FAR increased in Queen Street Valley*** *The removal of the residential bonus in this area has been offset by an increase in the Basic FAR from 6:1 to 8:1. This is combined with a streamlined series of bonus features that optimise public benefits in this area. This includes bonuses for Heritage Floor Area, public open spaces, through site links, public art building light and outlook.*

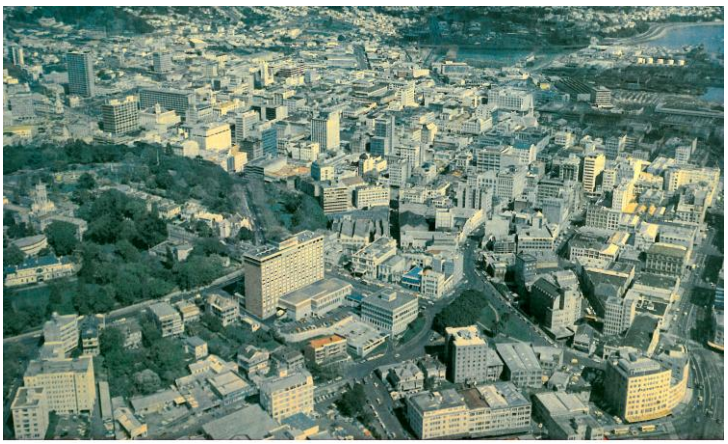
4 Built form

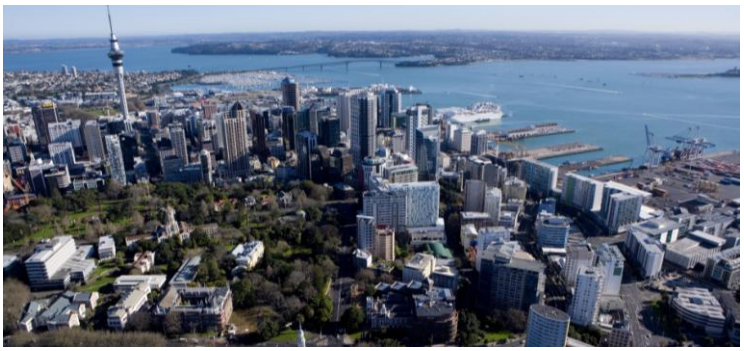
4.1 Introduction

This section looks at building form and design in greater detail. This includes relationship to the site, adjacent sites, neighbourhoods and city wide influences.

Historically, the buildings forming Auckland's skyline and streetscape were harmonized by height, form and details. Much effort was made in the past to relate each new building to its neighbours at both upper and lower levels, and to avoid jarring contrasts that would upset the city height pattern. Special care was accorded to the edges of distinct areas, where transitions in scale are especially important. Tall buildings arrived on Auckland's skyline in the 1980's with an unprecedented development boom and a new corporate culture that demanded visibility.

Tall buildings have continued to be an expressive form for much of the city's office, apartment, hotel and institutional development. They make economical use of land, offer fine views to their occupants, and permit efficient deployment of public services. If appropriately located, tall buildings enhance the topographic form and existing skyline of the city.





Top image shows Auckland city centre in the 1970's when the tallest building was 50m. The image below was taken in 2010 – tallest buildings are over 150m and there are consents in place for buildings over 200m.

4.2 The current planning framework

There are a series of development controls that complement height and site intensity methods to influence the design of buildings. Some of these are precinct specific provisions as a result of recent modifications to the District Plan. Examples include minimum ground floor heights, light and outlook for residential development, and minimum frontage height controls. These are evaluated using design assessment criteria. The following review considers wider application of some of these methods and also draws from international best practice examples.

4.3 Assessment of the current planning framework

New market pressures and architectural trends are emerging that are not adequately catered for in the current planning framework. The key issues identified with the current planning provisions are:

- greater consideration for the location, form and design of tall buildings including the scale and bulk of new buildings - particularly in relation to the scale of the site, local area and the wider city centre.
- the need for greater building separation - particularly between towers to enable light and views to permeate through the city to streets and between buildings.

In areas of growth such as the Queen Street Valley where tall buildings are catered for, ideally they should be clustered to form an attractive and cohesive skyline form that contributes to the clarity and identity of the city, complemented by the surrounding landscape features. However, concentrations of tall buildings should be adequately spaced and slender to ensure that views permeate through the city to the harbour and other features. Tall or bulky buildings should not be located in areas that require development to be sympathetic to the scale, form and proportion of low-scale character and heritage development.

The city centre approach to building height and scale weighs all the advantages and disadvantages of height at each location in the city. It takes into account appropriate, established patterns of building height, scale,

character and heritage, seeking for the most part to follow and respond to future plans. The plan recognises the functional and economic needs for space for offices, high-density apartments and hotels.

Factors that should be considered to improve the quality of tall buildings in Auckland's city centre:

- Favour tall slender towers that decrease in bulk with height and adequate separation from other buildings to allow daylight and views throughout the city. Large dominant slab building forms should be avoided.
- Highest quality design and construction for the city's tallest buildings using planning methods that enable more scrutiny and greater discretion. This could be applied to buildings higher than 100m that will become dominant features of the city skyline.
- Locate buildings of similar height and proportions within defined areas to enhance the character of the area and minimise negative effects on heritage buildings and the public realm.
- Ensure tall or large buildings are designed to be seen 'in-the-round' due to their high visibility. All facades must be articulated with windows or/and other architectural features that will create visual richness both locally and city-wide.
- Transition building height between areas to avoid abrupt changes in the height of urban form.
- Avoid isolated tall towers relative to areas of lower heights - especially in the vicinity of heritage buildings and distinctive local character.
- Encourage building forms and rooftops that contribute to the quality of the skyline and city form.
- Recognise the value of tall buildings as landmarks with an integrated design from street level to rooftop – this will contribute to the legibility of the city beyond and within the city centre.
- Reduce the environmental effects (wind, shadow) of buildings – particularly in areas with high pedestrian activity such as streets.

4.3.1 Building scale

Scale or bulk refers to the apparent massiveness of a building compared to its surroundings. The apparent bulk of a building also depends upon the amount of wall surface visible. A building may appear to have great bulk whether or not it is of extraordinary height. It can block near and distant views and create a disconcerting dominance on the skyline and neighbourhood. Users of modern building space may find these bulky forms more efficient, or more logical for combining several uses in a single development. But, these considerations do not measure the external effects upon the city.

Accordingly, to avoid excessive bulkiness there is a need to consider the existing scale of development in each part of the city and the effects of topography in exposing buildings to views from across the city.

When buildings reach extreme bulk, by exceeding the prevailing horizontal dimensions of existing buildings in the area (especially at prominent and exposed locations), they can overwhelm other buildings, open spaces, natural land forms, block views and disrupt the city's character. Such extremes in bulk should be avoided by establishment of maximum horizontal dimensions for new construction above the prevailing bulk of development in each area of the city.

At a distance, relationships among buildings form a skyline image – a combined mass and urban grain or texture. Over-scaled and slab shaped buildings with continuous walls can block light and outlook to streets and public open spaces, and reduce the natural permeability of light between buildings.

Controls on the bulk of building form can address the impact of a building at the streetscape view, its relationship to neighbouring buildings, and its cumulative impact on the skyline as a whole. Limiting the bulk of the building envelope will still offer the latitude for individual building design, but in harmony with the urban pattern and character of the city centre.

An effective way to ensure relatively slender construction is to apply a maximum diagonal dimension to tower forms above a specified height. If applied in areas of unlimited height, this would not limit the total floor space that could be built, but would help

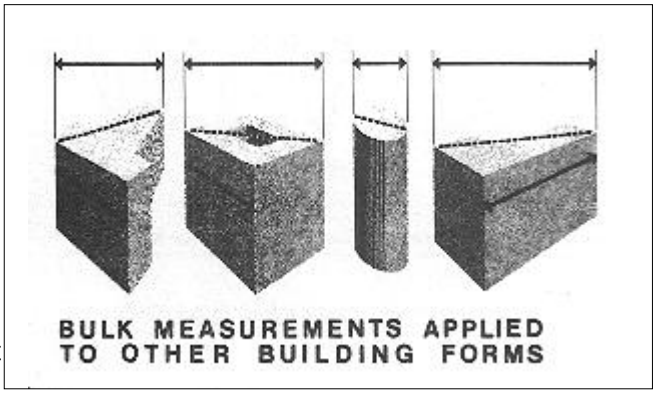


Diagram shows how the maximum horizontal plane measurement of 50m can be applied to any form of development to manage scale.

to shape it to avoid negative external effects. If two or more towers are to be built on a single property, their total effect should be considered and an adequate separation should be required between them. The precise form of the building or buildings would in large measure be left to the individual developer.

The majority of Auckland's tallest buildings in those areas that have generous or unlimited height controls, generally have a maximum horizontal plane dimension of approximately 50m. This is the case whether the building is circular, square or another shape dictated by site or planning conditions.

4.3.2 Building separation – light and outlook bonus

The Auckland District Plan (Central Area Section) does not adequately ensure that light and outlook bonus provisions achieves its intent. That is, light and outlook between all aspects of the building and permeability of light to the street between buildings. It is also leading to less than optimum design responses in some bulky and highly visible buildings. There are no specific building separation provisions in the Central Area Section.

Large blank side and rear walls scar Auckland's urban landscape for decades due to a development framework that allows façade composition of towers or large buildings to assume adjacent development will directly abut side or rear boundaries. The lack of design quality on side and rear boundaries potentially limits what could be developed on adjacent sites.

As such, the result can be a "first-to-the-post" development scenario, whereby the development of one site can restrict or sterilise adjacent sites from developing in a similar manner or with new uses such as residential which requires adequate daylight and ventilation. The city centre cannot afford to reduce the quality of developable sites as a result of poor design responses from adjacent sites. Many cities require set backs from boundaries to encourage quality design on all building facades.

Towers should not be built in close proximity to each other and to side and rear property lines for a number of reasons. When buildings are constructed too close together, the resulting wind conditions, distortion of the sense of pedestrian scale, lack of access to natural light, sun and outlook creates a poor amenity for pedestrians in the public realm Furthermore, if windows face onto the side boundary lines and buildings are constructed very close to it, privacy, daylight and ventilation issues may arise for building occupants.

When buildings are constructed very close to the side property lines, there is little reason to use side and rear walls for any form of value - such as windows or design articulation. This also affects the use and design of buildings on adjacent sites that will be limited by poor quality facades on neighbouring buildings. . Without planning provisions to ensure quality façade design on all aspects and adequate set backs, buildings will continue to be designed according to 19th century principles better suited to small scale developments with the street façade offering the only opportunity for windows and a quality designed frontage. This is an inadequate design response for a city with buildings that are increasing in scale and visibility due to market trends and new technologies.

Tall buildings that are built to the street alignment can overshadow streets and the lower levels of buildings, create unpleasant environmental conditions (wind and shadowing), cause an overwhelming sense of enclosure and affect growing conditions for street trees. Setting back higher elements of buildings preserves reasonable levels of daylight to the street level and other buildings, helps minimise wind problems and create comfortable street environments. This will help achieve the outcomes sought by the 'light and outlook' bonus provisions.

Sydney's City Plan requires a 10m frontage setback of the tower at a height of 45m. This almost doubles the amount of sky seen on the average 20m street and assists to reduce wind impacts. In Auckland there is a wide range of street widths (from 10-20+m) and smaller building scales. Taking this into consideration, a 6m frontage setback of the tower above 28m height is considered to provide adequate daylight to the narrowest of streets (which are most in need of light) without significant constraints on site development.

An example of tower and podium development that allows for tower separation and boundary set-backs to provide for light and outlook from all facades.

The height of 28m was established by the set-back requirements for Queen Street Valley Precinct. This height was a response to the heritage buildings that are prevalent in the core city centre. The new tower developments that have been constructed with podiums of a minimum of 28m in this area reinforce this height as appropriate for the core city centre.

An example of modeling test results for a 2000m2 site on Albert Street demonstrates various outcomes with minimum 6m set-backs from boundary and 50m maximum horizontal plan dimension

Below: This diagram series shows a three-dimensional building form using the maximum development potential for the 2,000m2 Albert Street (zone 1) site and applying the light and outlook bonus. It illustrates the various building form options that are possible under the current Auckland District Plan (Central Area Section). All developments modeled use the same MTFAR but the different floorplate arrangements cause buildings to be taller or lower.

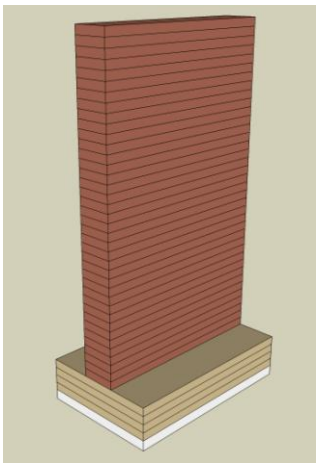


Image 1 - the brown slab tower shows the potential outcome from the current planning controls which do not require a setback from boundaries It allows a very bulky over-scaled narrow slab building wall facing the street that prevents light and outlook. This building does not comply with the proposed 50m maximum horizontal plan dimension.

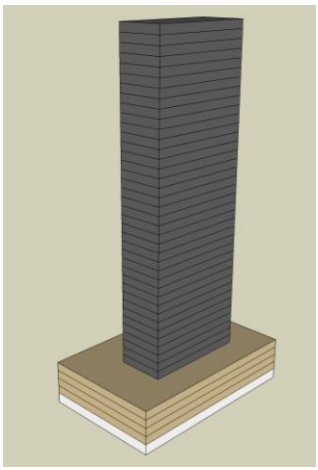


Image 2 - the grey tower shows the outcome from a minimum 6m boundary set-back. It assumes a 700mm2 floorplate and dimensions typical of residential development This building is tall due to the smaller floorplate but allows for considerable light and outlook to the street and adjacent sites. This building complies with the proposed 50m maximum horizontal plan dimension.

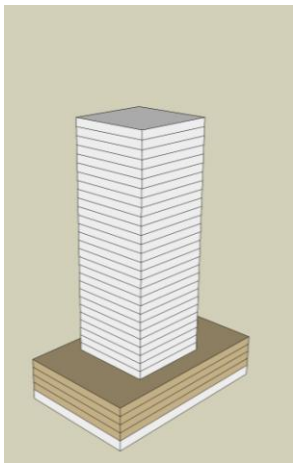
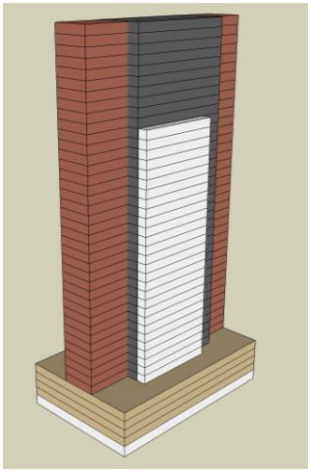
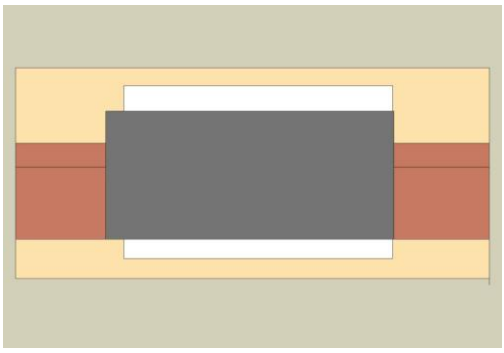


Image 3 - the white tower shows the outcome from a minimum 6m boundary set-back. It assumes tower has a 1000m2 floorplate typical of a commercial office tower. This building is lower due to the large floorplate but allows for considerable light and outlook to the street and adjacent sites. This building complies with the proposed 50m maximum horizontal plan dimension.



This image is a composite of all the buildings modeled to show the comparative differences in form and scale between the options.

Right: Site plan (yellow area is total site – approximately 2,000m2) overlaid with the composite floor plates of the various options tested (brown shows current controls), grey and white are possible outcomes from proposed Unitary Plan controls.



Side and rear setbacks of 6m (above 28m) will also ensure adequate building separation to allow ventilation, daylight access, view sharing, increased privacy and help reduce adverse wind effects. In Auckland's city centre there is a mix of residential and office buildings so the planning provisions must cater for the differing needs of these activities. While outlook, daylight, ventilation and privacy may not always be a priority for office uses, commercial buildings are regularly converted to residential, educational or other uses where these factors are a priority. For this reason, to enable flexibility of future use of buildings, side and rear setbacks should apply to tall buildings.

Requiring 6m set backs on the street frontage, side and rear boundaries will achieve several environmental benefits:

- Enhance amenity in terms of daylight, outlook, view sharing, ventilation, wind mitigation and privacy – particularly for residential buildings and serviced apartments in the city centre's mixed use environment.
- Enhance the quality of the public domain in terms of wind mitigation and daylight
- Enable flexibility to change commercial buildings to residential uses in future.Encourage better building design with a separation between the pedestrian scaled elements of the building (below 28m) and its tower form which can be designed to respond to other factors at a local and city wide scale.

Setbacks of 6m may not be practical on smaller or irregularly shaped sites. In the city centre there are 174 sites that are less than 205m2 in size and 271 sites that are less than 500m2. In these cases, alternative bonuses are likely to be more appropriate than the light and outlook bonus which requires the 6m setbacks.

4.4 Recommendations - Built form

A paradigm shift should be encouraged to change the one-dimensional street frontage design that characterises the city centre to a place that is experienced in three-dimensions from a multitude of viewpoints (public and private), with buildings that provide high quality sustainable living and working environments at all levels.

The following requirements could be incorporated into the city centre zone light and outlook bonus provisions:

- *a 50m maximum horizontal plan dimension be applied to that part of a building 28m above mean street level to manage the bulk of a building and ensure it is compatible with the urban grain of the city centre.*

- *Modification to the light and outlook bonus provisions to require 6m setbacks from the street frontage, side and rear boundary for towers or those parts of a building above the 28m height level..*