187 THOMAS PLANNING PROPOSAL



JUSTIFICATION REPORT Part C: Urban Design





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187 Thomas St, Haymarket, Sydney Greaton

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1.0 Introduction

The 187 Thomas Street proposal has been developed through a careful analysis of the exiting and future character of the site, its context including the Haymarket Precinct and the urban renewal which is occurring throughout the south end of the Sydney CBD.

By adopting the criteria set out in council's vision for the CBD and the Haymarket precinct, we have developed a building envelope based on a series of environmental performance driven controls. This building envelope is significantly lower than the maximum possible height, delivers the possibility for a mixed-use hybrid tower which will bootstrap the precinct as an innovation and technology hub with a mixture of symbiotic land uses an appropriate sized floor plates.

The hybrid tower combines multiple uses within a vertical arrangement, each with their own identity and requirements but sharing common facilities in the way that a horizontally arranged series of buildings would share a city street. Structured around an innovation hub; related functions such as hotel accommodation for business visitors, work space to support startups through education and co-location and retail and event space provide street level common facilities in a vertical village.

Sustainability is at the core of the proposal with a focus on a low carbon and a healthy environment which is attractive to the potential tenants and workers of an advanced innovation hub in a global CBD location.

Structure of this Report

This Design Justification Report has been structured into 6 parts.

1 - 'Introduction' outlines the site location, the planning strategy, opportunities for the site, ambition of the project and the public benefits.

2 - 'Site Analysis' provides an immediate site analysis and broader urban scale analysis, which includes solar access, prevailing wind directions, primary public views, site identification, site control and opportunity, mode of transport, pedestrian connections and heritage evolution. They translate the urban context into the several layers of acknowledgment and outline the site opportunities and the constraints.

3 - 'Key Urban Design Principles' addresses the site opportunities and the constraints, which includes public domain, street wall height and podium, environmental performance driven setbacks, tower height, urban stratums, views and sustainability initiatives. They define the proposed building massing within the urban contexts.

4 - 'Hybrid Tower' demonstrates the preferred indicative scheme, with a series of diagrams within the proposed envelope. The vision of the project aims to achieve high quality spaces for each use with shared common facilities, yet satisfies all requirements and purposes within a vertical arrangement.

5.- 'Development Options Considered' - provides a summary of the concepts tested.

6. - 'Conclusion' justifies the feasibility and the benefits of the proposed envelope within the urban context.

'Appendices' provide further information and details to the analysis, studies and urban controls.





Background

The 187 Thomas development site is approximately 2350m² purchased by Greaton in 2018. Greaton is a developer investor originating from Adelaide that commenced projects in Sydney in 2015. Its most prominent Sydney project is the Ribbon Hotel in Darling Harbour for which Greaton is the owner and will become the hotel operator on completion.

The combined land area of the site provides a substantial development opportunity located in an active area of Haymarket which has been undergoing change which is escalating. The development site is ripe for redevelopment, located on the corner of George, Valentine and Thomas Streets within 200 / 300 metre walking distance of Central Railway Station and which neighbours UTS. Existing development on the site is at the end of its economic life and detailed consideration has therefore been given to future redevelopment opportunities. Specifically, investigations have been undertaken to determine how redevelopment of the site can support Council's (and broader Government) vision and initiatives for the area, and for Sydney as a whole.

The Planning Strategy and Other Opportunities for the Site

The City of Sydney identified the future of the locality in its Endorsed Draft CSPS (the "Planning Strategy") as one of four Zones of high density. The Haymarket location was designated a 'future' zone of high density. This proposal embraces the intentions and objectives of the *planning strategy*.

The submission addresses the benefits to the City to allow 187 Thomas to proceed out of the intended sequence of the Planning Strategy, that is now, rather than in the 'future'. Accordingly, 187 Thomas would proceed in parallel with the designated Zones of high density located in the North and Central City, with 187 Thomas offering alternate capacity in the South of the City distinct from the top end product that will result in the 'Bankers District' of the North of the City.

The consultant team's initial investigations identified the opportunities offered by the site location and afforded by the large site area. Surrounding influences on the escalating change in the locality were noted to include the Innovation Hub being championed by the NSWG taskforce, the Central Station redevelopment, the existing and future of Darling Harbour (just down Quay St) and the UTS Art Precinct around Central Square.

Of those key influences, the opportunity of contributing to the evolution of the innovation tech hubs sector was identified as most appropriate for the development site. Research undertaken by Atlas Urban Economics group indicated that the site presents an invaluable opportunity to meet a critical gap in the technology and innovation market and that a development which includes a Tech Cluster and Innovation Hub would contribute strongly to the City's competitiveness.

Atlas Urban Economics identified that the opportunity presented by the site in terms of the technology space is two-fold, namely;

- Innovative providing for a genuine cluster opportunity for tech businesses at all life cycle stages ('age-ing in place") and,
- Catalytic acting as a catalyst for large scale urban renewal in the southern precinct, lifting the profile and amenity of the precinct.

The intended Tech Cluster & Innovation Hub component is described further below.

Another benefit of the proposal is that the very poor architecture of the existing building on the Thomas St site will be removed from Svdney's stock of low-quality buildings.

Accordingly, the proposal can deliver on key opportunities, including;

- The Planning Strategy to contribute to Council's objective to increase the capacity of Sydney as a Global City.
- The continuingly increasing demand to provide space and facilities for high tech businesses, from startup to maturing, and that sector's contribution to Sydney's position as a Global City.
- The current and expanding involvement of Greaton in tech-hub businesses, from a startup 7 years ago in Adelaide.
- The renewal of a large site in the locality, removal of an existing poor guality building and delivering a high guality Architectural contribution which will become an exemplar for the future of Haymarket, and will join the NSWG led Central Station redevelopment and the Central to Eveleigh Innovation Hub.
- · Council's long held initiatives to support and germinate the tech innovation and startup businesses, in a reduced timeframe.
- To be the initiating catalyst to commence delivery of the 3rd City Square identified in the Planning Strategy, by acting as a catalyst to repositioning the perception of the locality and the need of the 3rd City Square as the focal heart of Haymarket and the future Central Station, together with a financial contribution via the 187 Thomas VPA.

This submission represents the outcome of 18 months of collaboration and dialogue with Council's planning team. 7 presentations of detailed technical analysis have been made and discussed to ensure the proposal is technically substantiated and robust.



4_1 Structure plan

Endorsed Draft CSPS- Excerpt 4.1 Structure Plan



Strategic Context

A review of key strategic documents and plans (including the A Metropolis of Three Cities, Eastern City District Plan and available information on the Camperdown to Ultimo Collaboration Precinct) have revealed the following key facts:

- there is a shortage of, and limited capacity for, additional employment floor space (including large floor plate commercial) in the southern CBD
- a historical shortage of large floor plate commercial exists in the southern CBD area
- to establish an technology and innovation precinct in the southern part of the CBD extending from Central to Eveleigh although planning for this is in its infancy, and
- the Greater Sydney Commission's key priority for the Camperdown to Ultimo Collaboration Precinct, in which the site is located, is to support the Area's vitality and economic growth. Issues to be addressed in the precinct include the loss of employment space for health, education, research, innovation and creative sectors, and the need for

a global vision, brand and greater collaboration in the area.

Tech Cluster & Innovation Hub

Greaton is committed to delivering a 'state of the art' Tech Cluster and Innovation Hub on the site and has an established reputation in this area having been active in the sector for more than 7 years in South Australia. From it's experience and specialist advice provided by Atlas Urban Economics, key success factors that are critical to the success of a Tech Cluster and Innovation Hub have been identified. These include:

- provision of a range of floorspace suitable for tech firms at all lifecycle stages
- the delivery of a curated space provide a mix of uses to create vibrancy to appeal to innovative workers
- high amenity provide high quality urban environment
- access to talent competitive edge to attract talent
- start-up support essential for success
- accessibility by range of transport modes
- connectivity internet connectivity critical
- creation of a 'true' community provide meet up opportunities, and
- delivery of a critical mass of occupiers and talent required.

This site has locational and site-specific advantages that will allow a future tech hub and innovation precinct to flourish and succeed. It represents a one-off opportunity to create an 'exemplar' development that future facilities (including the Central to Eveleigh Innovation Precinct) can learn from and leverage off. It is well located in terms of public transport, provides high amenity, is collocated in close proximity to the University of Technology Sydney and is ready to develop. Most significantly it offers the opportunity to 'kick start' the delivery of a successful Innovation Precinct in the southern City.

In the recent past a number of sites have been mooted for tech space or innovation hubs including the Bays Precinct and the Eveleigh Technology Park. The subject site has significant advantages over these sites. Notably it is in a highly accessible location, it is owned by a developer with experience in the sector, it is ready to develop and is a site that can create a high level of amenity that would attract creative / innovation workers. There is an opportunity for the City of Sydney to lead the initiative for the establishment of a cluster / hub of significance.

Greaton is intent on building a world class digital and electronic research facility within the site that would target industries in most 'need' following market research. These industries may include researchers from surrounding universities, R&D entities, electronic manufacturers, software and hardware suppliers, start-up talent and others. The facility will be all about nurturing and gathering talent and driving jobs for the next generation in some of the world's fastest growing industries: Artificial Intelligence, Cyber Security, Smart Sensor Networks, Robotics, Big Data and Virtual Reality. It will be a true innovation and creative community and will connect to those businesses that want to utilize cutting edge technologies. It would also leverage off its proximity to the University of Technology Sydney and other knowledge industries within the precinct.

Mixed use to a 'Hybrid Village'

The Tech Cluster & Innovation Hub is one component of a proposal for a mix of uses integrated within the development.

The development would deliver in the order of 50,000m² floor space for interrelated uses including; Innovation, Education, Employment and Tourism. The combination of uses would provide a genuine "mixed use" facility, is developed as a theme for the building language to reflect the Haymarket locality and the future paradigm of cities. It will provide for evolving uses in proximity to a major transport node, Central Station.

A preliminary Indicative Scheme has been derived from the Hybrid Village concept to accommodate a mixture of uses, which will remain a WIP during the preparation of a site specific Planning Proposal. Variations to the Land Use Mix will continue to be evaluated. For instance the possibility of increasing the Tech-Hub component from a base 7,500m² due to its interface with the other Education, Commercial &/or Hotel components will be considered.

Overall the proposal represents a significant contribution to supply of additional commercial floor space within the City, which is a key objective of the Planning Strategy. It will also add to the supply of large floor plate commercial floor space in the southern City which is currently in short supply and for which there is limited opportunity. Early development of the site would deliver significant employment and would make a substantial contribution to the competitiveness of the City both nationally and internationally.

> Hybrid Vertical Village -Green Interconnecting Green Spine & Atrium Gardens



Applying the Planning Strategy

The Planning Strategy sets Council's planning vision for how Sydney will grow into the future and includes aims, objectives and actions to promote Central Sydney's role as the State and nation's economic, cultural and social engine. It is intended to unlock economic opportunities and investment in jobs, and support public improvements that make Sydney an attractive place for business, workers, residents and visitors. Notably it will unlock 2.9 million square metres of floor space, provide for over 100,000 jobs and deliver around 300-520 new affordable housing units while also delivering additional open space and essential infrastructure. These benefits will be unlocked while ensuring innovative and world class development solutions.

To implement its aims and objectives, the *Planning Strategy* provides for the removal of FSR and Height as numeric planning controls and puts in place environmental controls to measure the impact of a proposed development, primarily in relation to sun access. FJMT have tested all the controls in accordance with the *Planning Strategy* and have arrived at proposed DCP envelopes with a GFA of 50,514m² above ground and a total of 22:1 including basement facilities counted as FSR. FJMT have prepared an indicative scheme measured at 22:1 which was selected from the numerous schemes tested by FJMT.

The outcome of each scheme tested against the Planning Strategy considerations, is measured for the resultant FSR, importantly the outcome is not the product of a predetermined FSR number. Additionally, suitable land uses were considered that can be accommodated that meet the strategy's objective to increase the capacity of a global Sydney.

The FJMT document following includes a summary of the analysis of the key considerations required in the Planning Strategy, supported by the detailed analysis included in the Appendices. The analysis by FJMT produces the identified capacity range possible on the site within the parameters of the *Planning Strategy*.

We recognize that the outcome of applying the *Planning Strategy* to 187 Thomas has arrived at larger building form that may have been anticipated. The supporting Built Form Capacity Study (Appendix B) to the Planning Strategy, used a formula to estimate the possible increase capacity in Central Sydney, the formula was applied across the whole city area, whereas the FJMT analysis is site specific and applies the Planning Strategy considerations in detail as intended in by strategy.

The suite of the strategy documents described the assessments undertaken to identify the potential of increasing capacity in Sydney, to the tune of 2.9 million square metres of floorspace, but the assessments were not to become the limiting control. To do so would undermine the fundamental principle of the strategy, namely; to remove numeric controls in favour of environmental parameters to achieve quality outcomes ie. a sophisticated planning regime to protect the true value of a city, namely access to sun in public spaces.

As we were cognizant of the scale of the possible outcome, FJMT very particularly assessed the key Strategy considerations that allowed that scale, namely;

Tower (Height)

The Planning Strategy determines the maximum building height for the site by overshadowing controls to protect sun access to Prince Alfred Park and by airspace controls. which together results in a possible Tower height of RL275m.

Environmental Performance Driven Setbacks .

FJMT applied the mechanism provided in the *Planning Strategy's* Draft DCP for varying Setbacks, in accordance with the procedures set out in Schedule 11 for the Sky View

Factor Analysis. Additional setbacks to George Street respond to the heritage context and improve residential amenity for the neighbouring strata building. The podium roof garden and elevated tower to the north also mitigates residential impact.

The scale of the possible Tower by applying the *Planning Strategy* is reflective of tower development in the City over time, where a series of steps, or stratums, have resulted as planning controls and technology have evolved, and the design theme of the proposed "Hybrid Village", responds to that evolution.



City Cross Section - With Hybrid Vertical Village



2.0 Site Analysis

Site Analysis is explained over the following pages. They translate the urban context into the several layers of acknowledgment and outline the site opportunities and the constraints by analysing immediate site and broader urban scale.

Site Analysis includes:

2.1 Solar Access, Prevailing Winds and Views

2.2 Primary Public Views

2.3 Site Identification

2.4 Tower Cluster Area Map

2.5 Technology Precinct Context

2.6 Mode of Transport and Pedestrian Connection

2.7 Immediate Context

2.8 Heritage Evolution

2.1 Solar Access, Prevailing Winds and Views

187 Thomas Street is a part of Tower Cluster Area identified in the DRAFT CSPS, which as the potential for 360 degree views and high levels of natural light.

The critical wind directions are identified from the south-east (where there are numerous proposed large buildings that would be expected to reduce the incident wind speed and direction) and the west.



Residential Buildings within study zone





2.2 Primary Public Views

The Primary Public Views are set as indicated in the map. The public view impacts are examined based on those set views.

1. Aerial view: Tower And Future City Tower Cluster From The South

2. Street view: Looking West Along Foveaux Street

3. Street view: Looking North From Railway Square

4. Street view: Looking South Along Dixon Street

5. Street view: Looking South Along George Street

6. Podium view From West

7. Podium view From North

8. Podium view From East

9. Aerial view: Tower And Future City Tower Cluster From The South

10. Private view: from 743-755 George St Neighbouring residential building



2.3 Site Identification

187 Thomas Street is located in a key strategic precinct in the City of Sydney.

The site is identified in the Draft Central Sydney Planning Strategy 2016 as one which can contribute to the future employment capacity of the city and is located in a future zone of high density.

The Haymarket precinct is a special character area with a number of heritage buildings in the surrounding streetscape and which is the subject of a series of pedestrian priority projects by the City of Sydney in the public domain.



Draft CSPS identified sites with potential commercial development capacity (Appendix B - Built Form Capacity Study)



Railway Square (Draft CSPS)

Heritage Buildings (Sydney LEP)

Western Gateway Sub-Precinct Boundary (Draft Design Guide - Western Gateway Sub)

• Quay, Thomas & George Street Pedestrian Priority Projects (City of Sydney)



2.4 Tower Cluster Area Map

Planning Proposal: Central Sydney February 2020



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Site area 2,351m2 meets minimum requirement for tower development

Land within the tower cluster area



Tower Cluster Area Map (Draft CSPS)



2.5 Technology Precinct Context

187 Thomas Street forms part of identified site 153 in Built form capacity study, which is an Appendix B of the Draft Central Sydney Planning Strategy 2016.

The site falls within a number of significant and emerging precincts including: The Southern Precinct which has been identified for mixed-use revitalisation, The Chinatown/Haymarket Special Character area, Education and related industries in South Ultimo, and the proposed Central; to Eveleigh Technology and Innovation Precinct.

A major new development is possible which can contribute to both the capacity and complementary requirements of the precincts and of the City of Sydney whilst revitalising and enhancing the local Character.



Identified Site 153 Anticipated GFA 123,498 To 141,698

187 Thomas Street

Site Area : 2,351m2 GFA : 51,714m2 FSR : 22:1 Maximum Building Height: 278m

Hotel Premium Commercial Innovation / Hotel Ground Level Retail



Central To Eveleigh Innovation And Technology Hub (Urban Transformation Strategy 2016)

South Ultimo Education, Media And Telecommunications (Camperdown-Ultimo Place Strategy 2019)

Haymarket / Chinatown Special Character Area (Draft CSPS)

Southern Precinct Mixed Use



2.6 Mode of Transport and Pedestrian Connection

The site is in a precinct planned for pedestrian priority and within easy walking distance of major public transport and green space and with strong connections to the City, Darling Harbour, Pyrmont/Ultimo, Central Park and Surry Hills.





2.7 Immediate Context

The immediate vicinity of the site includes a number of heritage buildings, an adjacent strata residential building built prior to the current residential buildings standards.

An existing arcade runs through the residential building and the 187 Thomas Street site to connect Thomas and George Street. Potential enhancements to Valentine Street and Thomas Street have been identified as part of this study. Public domain conditions such as Wind, daylight and solar access need to be considered.





2.8 Heritage Evolution



Woolcott & Clarke's Map Of The City Of Sydney 1854

The Christ Church St Laurence was built 1839 - 1845, with a strong commitment to the socially marginalised, the church provided education to the local community and undertook much needed mission work in the surrounding slums.

Valentine St and an Alleyway north of 757 George Street are important historical elements on George Street and were formed prior to the 1850's.



Map Of The City Of Sydney, Department Of Lands 1903

The Sutton Forest Meat Building opened in 1875, associated with the wholesale meat trade, it was part of the major development of primary produce markets at Haymarket at the turn of the century.

When the City of Sydney sold the building in the 1950's it's association with the meat industry and small goods production ended, becoming a restaurant which has remained it's primary function.

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Civic Survey, 1938-50

In 1905, the City Council gained the power to resume properties in order to knock them down to widen the streets - 761-763 George Street, was resumed for the widening of Valentine, Thomas and Quay Streets in Haymarket. Valentine Street was widened to 40 feet, allowing for the only unobstructed view of the Christ Church St Laurence, from this street. Loc shc 187 of i the Stre infii stre



George St showing alleyway at north of 757 George Street which was formed in the 1850's.



761-767 George Street Sutton Forest Meat Company in George St prior to the widening of Valentine St.



Valentine St looking toward George St, Haymarket in Sydney in 1910, prior to the widening of Valentine St.



Today

Located within a city block whose only development, apart from the shop display windows, remains largely unchanged since the 1930's, 187 Thomas Street must respect and respond carefully to a number of important historical elements, including; protecting and framing the existing view to Christ Church St Laurence along Valentine Street, maintaining the through site link north of 757 George Street, infilling with an appropriate new building and strengthening the street wall to George, Quay and Thomas streets.



Valentine St looking toward George St, Haymarket in Sydney in 2019.



A City Block of 187 Thomas Street

3.0 Key Urban Design Principles

to the and	A series of development scenarios have been evaluated to understand the potential of the Site and determine	The contents of this chapter are as listed below.
	be best use of the land as it relates to the immediate d wider site context and connections.	3.1 Public Domain
		3.2 Street Wall Height and Podium
	The following criteria were considered in determining the building envelope:	3.3 Environmental Performance Driven Setbacks
		3.4 Tower Height
	Daylight and shadowing	3.5 Urban Stratums
	Wind impacts	3.6 Views
	Protection of heritage items and views	3.7 Sustainability Initiatives
	Orientation of CBD views	
	 Relationship to neighbouring buildings including in particular the residential development immediately to the east 	
	 Varied massing to break down scale and street wall heights 	
	 Variety and flexibility of commercial and innovation floor plates 	
	 Integration and shared use and management of innovation and hotel facilities 	
	 Core locations to optimise the layout of the podium and tower floorplates. 	

Those Key Urban Design Principles are illustrated by the series of diagrams. They identify the site opportunities and the site constraints within the urban context, which defines the proposed building envelope.

3.1 Public Domain

Streetscapes and Future Potential Opportunities

The following diagrams identify key urban design considerations and potential future opportunities for George Street, Valentine Street, Thomas Street and Quay Street.

Valentine street is characterized by its axial orientation to Christ Church St Laurence, low scale street wall buildings and heritage buildings on the corners of George Street. The future Valentine Street is imagined a more pedestrian friendly activated space which links George Street with the new boulevard of Quay Street.





Valentine Street

George Street

	187 Thomas Street
	Streetscape / Street wall heights
\leftrightarrow	Permeability / Pedestrian Priority
>	Potential Pedestrian Priority
•••••	Fine grain retail / Activation
	Third City Square
	Heritage

At the corner of Quay Street and Thomas Street a new Square is proposed by the City of Sydney. 187 Thomas Street has the opportunity to enhance this new space by setting back the podium to allow axial vistas along Thomas Street to the square and providing activation and pedestrian connectivity through to George Street.



Thomas Street
Thomas Street Pedestrian Upgrade Opportunities



 Quay Street

 Quay Street Pedestrian Upgrade Opportunities



Lane Way Access to George Street

An existing arcade connection exists from Thomas Street to George Street via the residential building at 743-755 George Street. The existing condition has many level changes requiring ramping and an indirect approach over the podium level of 187 Thomas Street.

The new proposal provides a more direct connection through an extended arcade on 187 Thomas Street activated with additional retail and building entries.



Lane Way Access to George Street



Improving Quay Street, Haymarket

The City of Sydney is planning to upgrade Quay Street in Haymarket to improve connections for people walking and riding bikes. This will include a road closure at Thomas Street to create a new public plaza. We're seeking your feedback on the project.

The street upgrade and new public plaza will include trees, lighting and seating. We'll also widen footpaths and install a new pedestrian crossing to improve safety for people walking. Quay Street is a popular walking connection between Central station and Darling Quarter.

(City of Sydney website)

New shared path on the western side of Quay Street between George Street and Ultimo Road was proposed. This will include new bike lanterns on Ultimo Road, George and Lee streets to connect riders to Central station.

If this proposal and design are approved by Roads and Maritime Services, work is expected to start in early 2021.



Improving Quay Street, Haymarket - City Of Sydney



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3.2 Street Wall Height and Podium

The surrounding street wall heights are carefully analyzed and the podium height are set with consideration of the site context and streetscapes.

Further analysis and option studies are provided in Appendix E.



Plan - Street Wall **Proposed Option**



View 1 - Street Wall Proposed Option

View 1 - Google Street View

George Street and Valentine Street

Provides additional sky space around Christ Church St Lawrence when viewed from Quay Street.







Plan - Street Wall Proposed Option

View 1 - Street Wall Proposed Option

Thomas Street and Quay Street

The street wall could be squared off parallel to Thomas street to provide greater sunlight access to the square and further open out the vista along Thomas Street.



City of Sydney Proposed New Square



View 1 - Google Street View

3.3 Environmental Performance Driven Setbacks

Tower setbacks have been determined by environmental performance as well as other urban design considerations.

In particular wind and daylight studies in the public domain have driven street wall and upper level setbacks to maintain amenity in the public domain.

Additional setbacks to Valentine Street responds to the heritage context. The podium roof garden and elevated tower to the north improves residential amenity for the neighbouring strata building.

The draft CSPS - Schedule 11 provides a mechanism to vary setbacks from the draft controls.

This mechanism is based on daylight and wind analysis. A preliminary wind report has been undertaken by Arup which is summarized in Appendix 'I'. A detailed daylight analysis has been undertaken with further information available in appendix 'H'.



Daylight compliance as per draft CSPS Schedule 11, Further analysis and option studies are provided in Appendix I.





3.4 Tower Height

Under the draft Central Sydney Planning Strategy the maximum building height for this site is limited by overshadowing controls for Prince Alfred Park (The proposed sun access plane for the new square at Central Station does not impact this site) and by airspace controls.

Airspace controls are lower in this case and a 15m crane zone must be provided below the airspace control to determine the maximum height.

The top surface under these constraints is at RL290. The ground level around the perimeter of the site ranges from RL12 to RL8, resulting in a potential maximum building height of 278m.

Draft CSPS Prince Alfred Park Sun Access Plane -RL335.2 - RL340m.

Sydney Airport draft 2018 PANS-OPS RL290m - RL300m.

Crane Zone : 15m below PANS-OPS RL275m - RL285m.



3.5 Urban Stratums

Tower development on the city over time has resulted in a series of steps or stratums as planning controls and technology have evolved.

A mixed use development can respond to these stratifications.

The proposed building envelope broken up into 4 key elements: podium, void tower, commercial tower and skyrise tower reflecting the existing stratification of buildings in the precinct. The articulation at the interface levels of tower element scan contain green spaces, which are sky lobbies, transfer lobbies or shared facilities and roof terraces.



<u>3.6 Views</u>

Concept model views have been taken from key city streets including estimated massing of other potential future towers as envisioned by the draft CSPS and the Central to Eveleigh initiative.





Aerial View 1: Tower And Future City Tower Cluster From The South

View Study Location Plan







View 2 Streetscape: Looking West Along Foveaux Street

View 3 : Streetscape: Looking North From Railway Square







View Study Location Plan

View 4 Streetscape: Looking South Along Dixon Street



Detailed concept model views which show the interlocking of the streetscape, podium heritage building and tower setbacks.

The north tower is elevated approximately 18m with a garden terrace to allow improved access to natural light and views for the neighbouring residential building.



View Study Location Plan



View 6: Podium View From West



View 7: Podium View From North



View 7: Podium View From North





View 8: Podium View From East

View Study Location Plan

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Aerial View 9: Tower And Future City Tower Cluster From The South

View Study Location Plan

3.7 Sustainability Initiatives

A sustainable work place, health and wellbeing are the core of this proposal. This is an interconnected hybrid tower with access to fresh, clean air, natural light and a vertical community of innovators and the organisations that support them.

The building will need to pass the ESD site test outlined in the draft Central Sydney Planning Strategy, which represents very high standards of sustainable design and energy performance.

The following initiatives will be implemented to deliver the objectives of the Sydney Development Control Plan (DCP) 2012 along with several other policies influencing development in the Sydney CBD.

_Net zero carbon _Zero waste _NABERS Energy 5.5 and NABERS Water 4 in office areas _NABERS Energy 4.5. and NABERS Water 4 in the hotel areas

In addition, the entire development will implement a range of other sustainability initiatives including the following:

Energy

_Passive design techniques

_High efficiency mechanical / lighting

_High performance glazing

_Photovoltaics

_Metering

Water

_Efficient fixtures and fittings

Waste

_Waste management & operations

Materials

_Recycling / low VOC

Biodiversity and Landscape

_Tree Canopy cover

_Native species

Transport

_Electric vehicle charging stations

_End of trip facilities

Climate Change

_Assessment of risks and potential impacts

Social Sustainability / Community Benefits Initiatives

_Social and cultural infrastructure to enhance the social and cultural life of the locality

_Public domain enhancements to improve liveability and vibrancy

Infrastructure tailored to the needs of local student communities

_Infrastructure opportunities for social/ creative sector entrepreneurs

_Culturally-specific responses to the Haymarket/Chinatown community

A comprehensive ESD report is part of this submission and should be referred to for more detail.





4.0 The Vision - A Hybrid Tower

The following sections demonstrate the Preferred Indicative Scheme, with a series of diagrams within the Proposed DCP Envelope. The vision of the project aims to achieve high quality spaces for each use with shared common facilities, yet satisfies all requirements and purposes within a vertical arrangement.

Those visions are listed as below.

4.1 A Hybrid Tower

4.2 Work/Stay/Play/Learn/Rest/ Invent

4.3 Innovation Hub

4.4 Innovation Podium

4.5 Innovation Park

4.6 Innovation Void Tower

4.7 Lifting Diagram

4.8 Lift Lobby Interchange and Hotel Facilities

4.1 A Hybrid Tower

A hybrid tower combines multiple uses within a vertical arrangement, each with their own identity and requirements but sharing common facilities in the way that a horizontal series of buildings would share a city street. Structured around an innovation hub; related functions such as hotel accommodation for business visitors, work space to support startups through education and co-location and retail and event space provide street level common facilities in a vertical village.









4.2 Work / Stay / Play / Learn / Rest / Invent

The hybrid tower approach combines synergistic spaces built around the daily needs and experiences of the innovator. The innovation hub will have close ties to business and education in the commercial tenancy floors, the hotel will provide short term accommodation for visiting collaborators, dual use event space will cater for both innovation hub and hotel needs, the sky lobby, rooftop terrace, innovation terrace and ground level retail will provide breakout and 3rd spaces for work, rest and networking.



Observation Deck



Commercial / Education/ Research

















Integrated Urban Hotel







Hybrid Tower

Education And Innovation Hub











4.3 Innovation Hub

The Innovation Tech Hub will be a shared facility that anchors the building, co-locating a range of facilities, services, equipment and tools to provide a space for technological experimentation, research, development, and collaboration. Tailored to individuals, micro and small businesses developing new products and services, as well as to interested members of the public, this facility should look, feel and perform as a centralised point within the Vertical Innovation Hub.

The core of innovation hub is the incubator space for small startups with shared space and facilities including workplace, lab and equipment. Larger flexible workspace floors are provided interconnected with the innovation centre and the event space on the lower podium levels. The landscaped Innovation Park provides both an external workspace and relaxation area for informal collaboration and networking.







4.4 Innovation Podium

The innovation podium provides highly flexible floor plates that allow different sized businesses to expand and grow, or to retract.

Through a more bespoke and personalised approach to managing tenancies, businesses can be nurtured from start-ups and through their growth phase, utilising available space as required, rather than being forced to take on whole level tenancies that may be beyond their capacity and budget.

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4.5 Innovation Park

To foster the connectivity and sense of community that the innovation and tech sector is seeking, the innovation park provides spaces that are truly great in their own right. It has an excellent range of amenity, space and services; cool spaces for events and activities; and an astute design aesthetic, with embedded sustainability principles. This has the potential to attract existing companies and communities who are looking for longterm, secure locations to foster their business, as well as attracting a greater diversity of people including younger workers, women and children.

 $\mathbf{Q} \mid \mathbf{Q}$



4.6 Innovation Void Tower

At the heart of this Hub is an equipped technology fabrication lab providing specialised, professional grade machinery, tools and equipment. Complementary spaces include a welcoming reception and communal forum space, and a variety of bookable and hireable spaces for both members and non-members, including meeting rooms, short-term project rooms, large teaching spaces, and a generous and flexible function venue. An outdoor terrace offers outdoor workspace and extends the function space. A coworking facility will also be integrated into the Hub to provide dedicated desk space and private offices that enable sole traders and micro-businesses a chance to begin their journey to scale up.



4.7 Lifting Diagram

A hybrid tower requires a variation in the lifting strategy where, instead of all lifts going to ground, there are a series of destinations throughout the tower commonly served by lifts from the various components.

Express lifts run from ground and stop at the Innovation hub and the sky lobby. Both rises of commercial lifts also stop at the innovation hub as well as the dedicated innovation hub lifts.

Double decker lifts are used to take advantage of the natural topography for lift access and a more efficient core footprint.

nmonly						
				North-South Section	East-West Section	Z
					East West Occion	
ovation						
cial lifts						Ž
dicated		roof	_ ▼ RL 209.800 m			
		level 48 - plant/pool/bar	. RL 201.000 m			Mezzanine Plant Pool/Plant/Bar
		level 47 - plant/facilities	_wRL_197800.m			Plant Facilities
e of the		level 46 - hotel level 45 - hotel				
efficient		level 44 - hotel	▼RL 188.200.m			
	Hotel	level 43 - hotel level 42 - hotel				Hotel Rooms
	Ť	level 41 - hotel				
		level 40 - hotel level 39 - hotel	▼RL 175.400 m			
_		level 38 - hotel	.▼RL 172.200 m ▼RL 169.000 m			
Hotel Lobby	\bigcup	level 37 - sky lobby				Sky Lobby
-		level 36 - commercial / goods transfer	_ v RL 159.200 m			BOH Transfer
		level 35 - commercial	. ▼ RL 155.400.m			
		level 34 - commercial level 33 - commercial	_ RL 151.600 m			
		level 32 - commercial	. ▼RL 147.800 m ▼RL 144.000 m			
		level 31 - commercial	v RL 140.200 m			
		level 30 - commercial	RL_136.400.m			Link Dine
		level 29 - commercial	. ▼ RL_132.600.m			High Rise
		level 28 - commercial level 27 - commercial				
		level 26 - commercial	▼RL 121.200 m			
		level 25 - commercial	. RL 117.400 m			
	_	level 24 - commercial	_wRL_113.600.m			
	Commercial	level 23 - commercial	_ ▼ RL 109.800 m			
	a e	level 22 - plant	RL_103.800.m			Plant
	ШO	level 21 - commercial	_wRL_100.000.m			
	Ŭ	level 20 - commercial level 19 - commercial	▼RL 96.200 m ▼RL 92.400 m			
		level 18 - commercial	.▼RL 92400 m.			
		level 17 - commercial	v RL 84.800 m			Low Rise
		level 16 - commercial	.wRL.81.000.m			
		level 15 - commercial level 14 - commercial	. RL 77.200 m			
		level 13 - commercial	.▼RL 73,400 m .▼RL 69,600 m			
		level 12 - commercial	▼RL 65.800 m			
		level 11 - commercial	_w RL 62,000.m			
		level 10 - commercial	_₩RL 58,200.m			
	\sim	level 9 - commercial	▼RL 54.400 m			
	~	level 8 - plant	▼RL 48,400 m			Plant
	5	level 7 - innovation / facilities level 6 - innovation / facilities	▼RL 44.600 m ▼RL 40.800 m			Void Tower
	/ Te ties	level 5 - innovation / facilities	▼RL 37.000 m			
Lift lobby Interchange	Innovation / Tech Hotel Facilities	level 4 - innovation terrace	▼ RL 33.200 m			Void Terrace
(To Innovation and Hotel	el Fa	level 3 - innovation / facilities	_wRL 28.200 m			
Facilities)	Hote	level 2 - innovation / facilities	. ▼ RL 23.200 m			Podium
_	$\overline{}$	level 1 - innovation / facilities	▼ RL 18.000 m			
Hotel / Commercial /		mezzanine - lobby				Mezzanine
Innovation Lobbies		ground - retail / lobbies	¥RL 10.100 m			
		B1 Basement 1 - loading B2 Basement 2 - hotel facilities	▼RL 4.900 m ▼RL 1.850 m			B1 Loading B2 Hotel Facilities
		B3 Basement 3 - EOT	₩RL -1.200 m			B3 End of Trip
		B4 Basement 4 B5 Basement 5	wRL -4.250 m w RL -7.300 m			Basement carpark
			¥112 1200 III		U.S.S. Sandadara da Sandadara da Sanda da Sanda	

Lift Lobby Locations In Section Diagram

Lifting Diagram



4.8 Lift Lobby Interchange and Hotel Facilities

The Lift Lobby Interchange was introduced on Level 4, where the lifts of all uses stop and access to the Innovation and the Hotel facilities. This floor is vertically well connected with the other podium floors by series of voids, open stairs and escalators which facilitates the multi story activities and interactions between different uses. The Innovation Park was also located on this floor, which provides an excellent range of amenity, spaces and services for events and activities to the all uses within the tower.





5.0 DEVELOPMENT OPTIONS CONSIDERED

Development Options considered are explained over the following pages.

5.1 Summary of Uses and Options Considered

5.2 Consideration of Uses

5.3 Consideration of Lifting Strategy

5.4 Proposed DCP Envelope & Proposed Indicative Schemes

5.5 Comparison Between Preferred Indicative Scheme FSR 22:1 & Alternate Indicative Scheme FSR 20:1

5.1 Summary of Uses a Options Considered

During the course of exploring the the optimum combination and siz components of the hybrid tower a the site based on the environmer and servicing constraints, numeror considered and analysed. Five of presented here to summarise th contributed to the preferred Opt

The following pages compare lan and potential of the vertical trans relationship with the envelope wh environmental performance criter of the primary differences betwee Alternate Indicative schemes.









s and g the combination of d size of the various wer and the capacity of mental performance merous options were e of these options are a the factors which have Option. e land use mix, the impact ransportation strategy, e which satisfies the criteria and a comparison tween the Preferred and						<u>8</u> m RL 206.0 m
Development Mix Options	Option 3A	Option 3B	Option 5B	Option 5D	Option 5E	Option 5E
Height	RL 219.0 m	RL 231.4 m	RL 226.8 m	RL 228.2 m	RL 209.8 m	RL 206.0 m
FSR	25.13:1	25.62:1	25:1	25.82:1	22:1	20:1
GFA	56,500 sqm	60,200 sqm	59,800 sqm	60,700 sqm	51,700 sqm	47,000 sqm
Levels	54	57	54	55	49	47
Lifting Strategy	Conventional Lifting	Conventional Lifting	Conventional Lifting	Double-Deck Lifting	Double-Deck Lifting	Double-Deck Lifting
Uses	Hotel: 23,000 sqm (18 Levels) Commercial: 26,000 sqm (23 Levels) Innovation: 7,000 sqm	Hotel: 23,000 sqm (18 Levels) Commercial: 30,000 sqm (26 Levels) Innovation: 7,000 sqm	Hotel: 16,000 sqm (10 Levels) Commercial: 37,000 sqm (31 Levels) Innovation: 6,000 sqm	Hotel: 12,000 sqm (10 Levels) Commercial: 38,000 sqm (31 Levels) Innovation: 10,000 sqm	Hotel: 11,000 sqm (9 Levels) Commercial: 33,000 sqm (27 Levels) Innovation: 7,500 sqm	Hotel: 10,000 sqm (9 Levels) Commercial: 32,000 sqm (27 Levels) Innovation: 5,100 sqm
Daylight	Average SVF: 32.883181%	Average SVF: 32.882224% Complied	Average SVF: 32.915356% Complied	Average SVF: 32.882374% Complied	Average SVF: 32.949525% Complied	Average SVF: 32.949525% Complied
Compliance as per Schedule 11	Complied	Complica				
Compliance as per Schedule 11 Wind Compliance as per Schedule 11	Complied	N/A	Complied	N/A	N/A	N/A

Hotel

Commercial / Retail

Innovation / Facilities

5.2 Consideration of Uses

The hybrid tower concept with Innovation hub balances the proportions and absolute sizes of the land use components.

Market testing has indicated that a circa 200 room hotel is an appropriate size in combination with the innovation hub and commercial component. Variations of overall floor space scale the amount of commercial and innovation space provided.

As the core revenue generates for the tower circa 30,000m2 of commercial space are required to fund the project.



Development Mix Options	Option 3A	Option 3B	Option 5B	Option 5D	Option 5E	Option 5E
FSR	25.13:1	25.62:1	25:1	25.82:1	22:1	20:1
GFA	56,500 sqm	60,200 sqm	59,800 sqm	60,700 sqm	51,700 sqm	47,000 sqm
Uses	Hotel: 23,000 sqm (18 Levels) Commercial: 26,000 sqm (23 Levels) Innovation: 7,000 sqm	Hotel: 23,000 sqm (18 Levels) Commercial: 30,000 sqm (26 Levels) Innovation: 7,000 sqm	Hotel: 16,000 sqm (10 Levels) Commercial: 37,000 sqm (31 Levels) Innovation: 6,000 sqm	Hotel: 12,000 sqm (10 Levels) Commercial: 38,000 sqm (31 Levels) Innovation: 10,000 sqm	Hotel: 11,000 sqm (9 Levels) Commercial: 33,000 sqm (27 Levels) Innovation: 7,500 sqm	Hotel: 10,000 sqm (9 Levels) Commercial: 32,000 sqm (27 Levels) Innovation: 5,100 sqm

Proposed DCP Envelope

Preferred Indicative Scheme





Alternate Indicative Scheme

5.3 Consideration of Lifting Strategy

The vertical transportation strategy for the hybrid tower seeks to provide innovative lifting solutions appropriate for the innovation focus and the vertical community of the hybrid tower. A double deck lift increases area efficiency and the potential typical floor plate size within the same building envelope, noticeably improving envelope efficiency.



Development Mix Options	Option 3A	Option 3B	Option 5B	Option 5D	Option 5E
FSR	25.13:1	25.62:1	25:1	25.82:1	22:1
GFA	56,500 sqm	60,200 sqm	59,800 sqm	60,700 sqm	51,700 sqm
Uses	Hotel: 23,000 sqm (18 Levels) Commercial: 26,000 sqm (23 Levels) Innovation: 7,000 sqm	Hotel: 23,000 sqm (18 Levels) Commercial: 30,000 sqm (26 Levels) Innovation: 7,000 sqm	Hotel: 16,000 sqm (10 Levels) Commercial: 37,000 sqm (31 Levels) Innovation: 6,000 sqm	Hotel: 12,000 sqm (10 Levels) Commercial: 38,000 sqm (31 Levels) Innovation: 10,000 sqm	Hotel: 11,000 sqm Commercial: 33,00 Innovation: 7,500 s
Lifting Strategy	Conventional Lifting	Conventional Lifting	Conventional Lifting	Double-Deck Lifting	Double-Deck Liftin









Hotel

Commercial / Retail

Innovation / Facilities

Refer to 4.7 Lifting Diagram & Appendix O - 'Floor Space Efficiency' for more detail



ifting



5.4 Proposed DCP Envelope & Proposed Indicative Schemes

The above sections summarize the design exercise undertaken where various use combinations, configurations and design efficiency, including lifting strategies, were considered and tested for compliance to SVF and Wind Tunnel criteria, and compliance with other environmental criteria.

The exercise concluded with an option 5B and option 5D, where both would allow approx. 25:1 FSR with effectively the same envelope.

Option 5B was Wind Tunnel tested and option 5D utilized a double-deck lifting strategy to achieve higher internal efficiency with the same envelope.

Option 5D was the option included in the presentation to the 'Pre-Planning Proposal' meeting with council on 12 February 2020. (Figure 1: **Proposed DCP Envelope**)

However, at the 'Pre-Planning Proposal' meeting, Council expressed concern regarding an FSR at 25:1. Accordingly, various schemes have been investigated down to a scheme at FSR 20:1.

In the above sections 5.1 to 5.3. option 5E was introduced as a FSR 22:1 scheme or a 20:1 scheme, to assess a reduced FSR.

The outcome of the investigation is that the physical benefit of FSR 22:1 (21.5:1 above ground) reduced to FSR 20:1 (20:1 above ground) is not discernible.

The bulk, height, scale is not visibly or tangibly different and it is conventionally accepted that FSR is not the normal measure used to control bulk, height & scale.

Accordingly, the Planning Proposal includes two schemes, both comfortably accommodated within the Proposed DCP Envelope namely;

Preferred Indicative Scheme FSR 22:1 with FSR 21.5 :1 above ground (Figure 2)

Alternate Indicative Scheme FSR 20:1 with FSR 20:1 above ground (Figure 3)

Hotel
Commercial / Retail

Innovation / Facilities



Figure 1. Proposed DCP Envelope (also Refer to Appendix D) Figure 2. Preferred Indicative Scheme (also Refer to Appendix B)

Figure 3. Alternate Indicative Scheme (also Refer to Appendix C)



Proposed DCP Envelope

Also Figure 4: Diagrammatic 3D envelopes below, provides a simple comparison of the **Proposed DCP Envelope, Preferred Indicative Scheme & Alternate Indicative Sceheme.**

Both **Preferred indicative Scheme** and **Alternate indicative Scheme** comfortably sit within the **Proposed DCP Envelope.**

Section 5.5 following provides a comparison section of the Preferred Indicative Scheme and the Alternate Indicative Scheme, noting the key physical differences.



Proposed DCP Envelope 320,849 m³ Preferred Indicative Scheme FSR 22:1 272,540 m³

Occupancy Ratio 85%

Architectural Articulation 15%



Alternate Indicative Scheme FSR 20:1 266,970 m³

Occupancy Ratio 83%

Architectural Articulation 17%

5.5 Comparison Between Preferred Indicative Scheme FSR 22:1 & Alternate Indicative Scheme FSR 20:1

The Alternate Indicative Scheme was introduced based on the request from the council to reduce FSR to 20:1.

The Alternate Indicative Scheme presents a 4,683m2 GFA reduction compared to the Preferred Indicative Scheme to achieve the alternate FSR 1:20. The areas were adjusted based on the below strategies, which are illustrated in the comparison diagrams on this page.

- To retain a viable Hotel the rooms component was not reduced.
- One level of the Low-Rise Commercial Floor was removed.
- The underside of the Commercial component is a fixed RL to create a VOID to benefit the adjoining neighbors.
- The bottom of the VOID is a fixed RL, being the street wall height of the Podium.
- An additional double height space is added to the terrace level of the innovation hub, in addition to the increased floor to floor height and void allowance in the preferred scheme
- The "quality" large floor plates are retained for the proposed Campus Style Tech Hub Floors.
- The hotel facilities in basement was relocated to the upper levels.

The design analysis in the report concludes that the Proposed DCP Envelope is a comfortable built form in the location which is the real test of what would be an appropriate FSR. It also meets all environmental controls of the CSPS/ Schedule 11.

While SVF and Wind Impacts would allow a FSR 25:1 scheme both Preferred and Alternate Indicative Scheme have responded to council's request for a lower FSR. Both schemes comfortably fit within the proposed DCP envelope. The comparison diagrams illustrate with very little visual difference between the two reference schemes.



6.0 CONCLUSION

A comprehensive series of analysis diagrams establish the opportunities and constraints for the site and the key urban principles encourage sensitivity to place, height and scale, sustainability, views and solar access and set up a framework for the indicative scheme and the subsequent final design to deliverer an appropriate design response that is sensitive to its complex setting and can provide the required connectivity, development and suitable commercial space for the Technology and Innovation precinct.

The site analysis, key urban design principles and the vision have informed the Indicative Scheme put forward in the appendix of this report.



Appendices

APPENDIX A	SURVEY
APPENDIX B	PREFERRED INDICATIVE SCHEME FSR 22:1 INCL. DEVELOPMENT SUMMARY
APPENDIX C	ALTERNATE INDICATIVE SCHEME FSR 20:1 INCL. DEVELOPMENT SUMMARY
APPENDIX D	PROPOSED DCP ENVELOPE DRAWINGS
APPENDIX E	STREETSCAPE ANALYSIS
APPENDIX F	EXISTING PLANNING CONTROLS
APPENDIX G	HEIGHT CONTROLS
APPENDIX H	SKY VIEW FACTOR ANALYSIS
APPENDIX I	WIND ANALYSIS
APPENDIX J	PUBLIC SPACE OVERSHADOWING ANALYSIS
APPENDIX K	RESIDENTIAL OVERSHADOWING ANALYSIS
APPENDIX L	PUBLIC VIEW ANALYSIS
APPENDIX M	PRIVATE VIEW ANALYSIS
APPENDIX N	FUTURE POTENTIAL DEVELOPMENT ON ADJACENT BLOCKS
APPENDIX O	FLOOR SPACE EFFICIENCY STUDY
APPENDIX P	ARCHITECTURAL ARTICULATION & EFFICIENT BUILDING ENVELOPE DESIGN

APPENDIX Q ENVELOPE EFFICIENCY & ALIGNMENT WITH DRAFT COUNCIL DCP ASSUMPTIONS



Appendix A SURVEY



Appendix B PREFERRED INDICATIVE SCHEME FSR 22:1

Basement 4-5 Carparking
Basement 3 EOT
Basement 2 Hotel Facilities
Basement 1 Loading Level
Ground Floor
Level 1 Podium - Innovation/Hotel
Level 3 Podium - Innovation/Hotel
Level 4 Void Tower Terrace
Level 6-7 Typical Void Tower
Level 9-21 Commercial Low Rise
Level 23-35 Commercial High Rise
Level 36 Hotel Goods Transfer
Level 37 Sky Lobby
Level 38-46 Hotel Rooms
Level 48 Roof Pool and Plant
Sections
Preferred Indicative Scheme FSR 22:1 Development Summary





fjmt





For Information





Basement 3 - EOT



For Information





1 Vehicle up ramp 2 Vehicle down ramp 3 Carpark lifts



Basement 2 - Hotel Facilities



For Information





- 5 Loading
- 6 Innovation goods lift



Basement 1 - Loading Level



For Information







For Information


























NORTH-SOUTH SECTION

EAST-WEST SECTION

roof	_▼RL.209.800.m	
level 48 - plant/pool/bar	▼RL 201.000 m	
level 47 - plant/facilities	▼ RL 197.800 m	
level 46 - hotel level 45 - hotel	.▼RL_194,600.m	
level 44 - hotel	▼RL 191.400.m ▼RL 188.200.m	
level 43 - hotel	▼RL 185.000 m	
level 42 - hotel	_ RL 181.800 m	
level 41 - hotel	▼ RL 178.600 m	
level 40 - hotel level 39 - hotel	.▼RL_175.400.m	
level 38 - hotel	▼RL 172.200 m ▼RL 169.000 m	
	402.0000000	
level 37 - sky lobby	RL_163.000_m	
level 36 - commercial / goods transfer	_▼RL_159.200_m	
level 35 - commercial	.▼RL_155.400.m	
level 34 - commercial	_ v RL_151.600.m	
level 33 - commercial	_ v RL_147.800.m	
level 32 - commercial	_▼RL_144,000.m	
level 31 - commercial	▼RL 140.200 m	
level 30 - commercial level 29 - commercial	▼RL 136.400 m	
level 29 - commercial	▼RL 132.600 m	
level 27 - commercial	_RL 128.800 m	
level 26 - commercial	▼RL 125.000 m	
level 25 - commercial	▼RL 121.200 m	
level 24 - commercial	_ RL_117.400 m	
level 23 - commercial	▼RL_113.600 m	
	▼RL 109.800 m	
level 22 - plant	. ▼ RL 103.800 m	
level 21 - commercial	. ▼ RL_100.000.m	
level 20 - commercial	.▼RL 96.200 m	
level 19 - commercial	.▼RL 92,400 m	
level 18 - commercial	_ RL .88,600.m.	
level 17 - commercial	_ RL .84,800.m	
level 16 - commercial	_ T RL 81.000.m	
level 15 - commercial	_ RL 77.200 m	
level 14 - commercial	▼ RL 73.400 m	
level 13 - commercial	▼ RL 69.600 m	
level 12 - commercial	▼RL 65.800 m	
level 11 - commercial	▼RL 62.000 m	
level 10 - commercial	▼RL 58.200 m	
level 9 - commercial	_RL 54,400 m	
level 8 - plant	▼ RL 48.400 m	
level 7 - innovation / facilities	▼RL 44.600 m	
level 6 - innovation / facilities	▼RL 40.800 m	
level 5 - innovation / facilities	. ▼ RL 37.000 m	
level 4 - innovation terrace	.▼RL 33.200 m	
level 3 - innovation / facilities	- RI 98 900 m	
	▼ RL 28.200 m	
level 2 - innovation / facilities	_▼RL 23,200 m	
level 1 - innovation / facilities	_ ▼ RL_18,000 m	
mezzanine - lobby	▼RL 14:200 m	
ground - retail / lobbies	▼ RL 10.400 m	
B1 Basement 1 - loading		
B2 Basement 2 - hotel facilities	▼RL 4.900 m ▼RL 1.850 m	
B3 Basement 3 - EOT	▼RL -1.200 m	
B4 Basement 4	▼RL -4.250 m	
B5 Basement 5	▼RL -7.300 m	

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Sections



Hotel

Commercial / Retail

Innovation / Facilities

1:1200 @ A3

27/2/20

For Information

		GFA		Land Use	FSR	
187 Thomas	hotel	10,966	m ²	21%	4.66	:1
Street	commercial	33,100	m ²	64%	14.08	:1
	innovation	7,429	m ²	14%	3.16	:1
Indicative	retail	219	m ²	0%	0.09	:1
Scheme						
Summary						
Above + Below Ground	total	51,714	m²	100%	22.00	:1
Above Ground	total	50,514	m ²		21.49	:1
Below Ground	total	1,200	m ²		0.51	:1

Site Area	2,351 m ²	(surveys measured)

measured efficiencies		
retail	BEA/GBA	95%
	GBA/GFA	10%
	GFA/GLAR	100%
hotel	BEA/GBA	95%
	GBA/GFA	83%
	GFA/NSA	74%
commercial/innovation	BEA/GBA	95%
	GBA/GFA	58%
	GFA/NLA	93%

Typ High	GBA	GFA	NSA
Commercial	1,498	1,228	1,160
		82.0%	94%

Typ Low	GBA	GFA	NSA
Commercial	1,502	1,189	1,120
		79.2%	94%

Actual Efficiencies	BEA	GBA	Efficiency
BEA/GBA	73,667	70,106	95%

					ļ			Com	nercial	Inno	vation	Ho	otel	Re	etail
			RL	Floors	Height	BEA	GBA	GFA	NLA	GFA	NLA	GFA	NSA	GFA	GLA
								ļ							
		Top RL	209.80												
KY RISE	level 48	plant/pool/bar	201.00	8.80	199.40	1106	1082					455			
OWER	level 47	plant/facilities	197.80	3.20	190.60	1106	1082					113	0		
	level 46	hotel 9	194.60	3.20	187.40	1106	1082					899	664		
	level 45	hotel 8	191.40	3.20	184.20	1106	1082					899	664		
	level 44	hotel 7	188.20	3.20	181.00	1106	1082					899	664		
	level 43	hotel 6	185.00	3.20	177.80	1106	1082	i				899	664		
	level 42	hotel 5	181.80	3.20	174.60	1106	1082					899	664		
	level 41	hotel 4	178.60	3.20	171.40	1106	1082	1				899	664		-
	level 40	hotel 3	175.40	3.20	168.20	1106	1082					899	664		
	level 39	hotel 2	172.20	3.20	165.00	1106	1082					899	664		
	level 38	hotel 1	169.00	3.20	161.80	1106	1082					899	664		-
			163.00	6.00	158.60	1106	1498					738	004		-
	level 37	sky lobby						1115	1050			/30			+
IIGH RISE OWER	level 36	Commercial 27/loading	159.20	3.80	152.60	1520	1498	1115	1053			1		1	
	level 35	commercial 26	155.40	3.80	148.80	1520	1498	1228	1160			1		1	-
	level 34	commercial 25	151.60	3.80	145.00	1520	1498	1228	1160						
	level 33	commercial 24	147.80	3.80	141.20	1520	1498	1228	1160						
	level 32	commercial 23	144.00	3.80	137.40	1520	1498	1228	1160			+			
	level 31	commercial 22	140.20	3.80	133.60	1520	1498	1228	1160						
	level 30	commercial 21	136.40	3.80	129.80	1520	1498	1228	1160						
	level 29	commercial 20	132.60	3.80	126.00	1520	1498	1228	1160						
	level 28	commercial 19	128.80	3.80	122.20	1520	1498	1228	1160						
	level 27	commercial 18	125.00	3.80	118.40	1520	1498	1228	1160			_			
	level 26	commercial 17	121.20	3.80	114.60	1520	1498	1228	1160						
	level 25	commercial 16	117.40	3.80	110.80	1520	1498	1228	1160						
	level 24	commercial 15	113.60	3.80	107.00	1520	1498	1228	1160						
	level 23	commercial 14	109.80	3.80	103.20	1520	1498	1228	1160						
OW RISE	level 22	plant	103.80	6.00	99.40	1520	1200								
OWER	level 21	commercial 13	100.00	3.80	93.40	1520	1502	1189	1120						
	level 20	commercial 12	96.20	3.80	89.60	1520	1502	1189	1120						
	level 19	commercial 11	92.40	3.80	85.80	1520	1502	1189	1120						
	level 18	commercial 10	88.60	3.80	82.00	1520	1502	1189	1120						
	level 17	commercial 9	84.80	3.80	78.20	1520	1502	1189	1120						
	level 16	commercial 8	81.00	3.80	74.40	1520	1502	1189	1120						
	level 15	commercial 7	77.20	3.80	70.60	1520	1502	1189	1120						
	level 14	commercial 6	73.40	3.80	66.80	1520	1502	1189	1120			İ			
	level 13	commercial 5	69.60	3.80	63.00	1520	1502	1189	1120			1		1	-
	level 12	commercial 4	65.80	3.80	59.20	1520	1502	1189	1120			1		1	
	level 12	commercial 3	62.00	3.80	55.40	1520	1502	1189	1120			1		İ	-
		commercial 3	58.20	3.80	55.40	1520	1502	1189	1120	1		1		1	-
	level 10		54.40	3.80								1		1	
	Level 9	commercial 1			47.80	1520	1502	1189	1120						
OID TOWER		plant	48.40	6.00	44.00	1520	1031			700	600				
	level 7	Innovation / hotel	44.60	3.80	38.00	1520	1031			760	699				-
	level 6	Innovation / hotel	40.80	3.80	34.20	1520	1031			760	699				
	level 5	Innovation / hotel	37.00	3.80	30.40	1520	873			612	582				
	level 4	innovation terrace	33.20	3.80	26.60	2351	2015			612	582				
ODIUM	level 3	Innovation / hotel	28.20	5.00	22.80	2351	2015			1690	1625				
	level 2	Innovation / hotel	23.20	5.00	17.80	2351	2015			1690	1625				
	level 1	Innovation / hotel	18.00	5.20	12.80	2351	2167			1180	1082				
IEZZANINE	mezzanine	lobbies / plant	14.20	3.80	7.60		560	307							
ROUND	ground 0	retail / lobbies	10.40	3.80	3.80	2351	2270	257		125		369		219	2
	subtotal					73.667	70.106	33.100	30.693	7.429	6.894	9.766	5.976	219	2
ASEMENT	basement 1	loading/plant	4.90	5.50			2278								
	basement 2	bike parking/EOT	1.85	3.05			2278								
	basement 3	hotel facilities	-1.20	3.05			2278					1200			
	basement 4	parking B4	-4.25	3.05			2278								
	basement 5	parking B5	-7.30	3.05			2278								
	subtotal					0	11,390	0	0	0	0	1,200	0	0	(
						-								1	1

CAR PARKING

	No.	
Existing	86	cars
Permissible	105	cars
Proposed	79	cars

MAXIMUM PERMISSIBLE CAR PARKING ESTIMATED TOTAL

Land Use	No.	
Hotel	52	cars
Commercial	37	cars
Retail	0	cars
Service	15	cars
Car Share	1	cars
Total	105	cars

COMMERCIAL CAR PARKING ESTIMATES

Retail

		LEP control (maximum)	car spaces
Office		(commercial + innovation GFA x site area) / (50 x total GFA)	37
IOTEL CAR PARKING E	STIMATES		37
	room target	LEP control (maximum)	car spaces
Hotel	234	1 space / 4 bedrooms, up to 100 rooms 1 space / 5 bedrooms, in excess of 100 rooms	52
		SUBTOTAL	52
RETAIL CAR PARKING E	STIMATES		
		LEP control (maximum)	car spaces
Retail		(retail GFA x site area) / (50 x total GFA)	0
		SUBTOTAL	0
SERVICE VEHICLES		DCP control (minimum)	car spaces
Hotel		1 space for the first 50 hotel rooms + 0.5 spaces for every hotel room after	3
Commercial		2 up to 50,000+1 space per 6600m2 between 50,000 & 100,000+1 space per	12
Retail		1 space per 350m ² GFA up to 2000m ² , then 1 space per 8000m ²	0
		SUBTOTAL	15
CAR SHARE		DCP control (minimum)	car spaces
Office		1 space per 30 car spaces provided	

1 space per 30 car spaces provided

SUBTOTAL

0

1

BICYCLE PARKING

	No.	
Existing	0	bicycles
Permissible	382	bicycles
Proposed	382	bicycles

BICYCLE PARKING TOTAL

		DCP Control (minimum)	No.	
Retail	Employees	1 space / 250m ²	1	bicycles
	Visitor	1 space / 100 m2 (over 100m2) + 2 spaces	3	bicycles
Hotel	Employees	1 space / 4 staffs (assumed 300 staffs)	75	bicycles
	Visitors	1 space / 20 rooms	0	bicycles
Commercial	Employees	1 space / 150m ²	221	bicycles
	Visitors	1 space / 400m ²	83	bicycles
Total			382	bicycles

MOTORBIKE PARKING

	No.	
Existing	0	motorbikes
Permissible	9	motorbikes
Proposed	14	motorbikes

MOTORBIKE TOTAL

DCP control	No. 9 motorbikes 9 motorbikes	
1 per 12 cars	9	motorbikes
Total	9	motorbikes



Appendix C ALTERNATE INDICATIVE SCHEME FSR 20:1

Basement 3 -5 Carparking
Basement 2 EOT
Basement 1 Loading Level
Ground Floor
Level 1 Podium - Innovation/Hotel
Level 3 Podium - Innovation/Hotel
Level 4 Void Tower Terrace
Level 5-6 Typical Void Tower
Level 8-19 Commercial Low Rise
Level 21-33 Commercial High Rise
Level 34 Hotel Goods Transfer
Level 35 Sky Lobby
Level 36-44 Hotel Rooms
Level 46 Roof Pool and Plant
Alternate Indicative Scheme Section
Alternate Indicative Scheme FSR 20:1 Development Summary



fjmt_

Basement 3-5 - Carparking



For Information





Basement 2 - EOT



For Information





- 5 Loading
- 6 Innovation goods lift



Basement 1 - Loading Level



For Information







For Information



























NORTH-SOUTH SECTION





Proposed DCP Envelope

Alternate Inidcative Scheme Section



1:1200 @ A3

For Information

fjmt-1019B

Alternate Indicative Scheme FSR 20 : 1 Development Summary

		GFA		Land Use	FSR
187 Thomas	hotel	9,766	m ²	21%	4.15 :1
Street	commercial	31,911	m ²	68%	13.57 :1
0	innovation	5,135	m ²	11 %	2.18 :1
Indicative	retail	219	m ²	0%	0.09 :1
Scheme					
Summary					
Above + below ground	total	47,031	m²	100%	20.00 :1
Above Ground	total	47,031	m ²		20.00 :1
Below Ground	total	0	m ²		0.00 :1

Site Area 2,351 m² (surveys measured)

measured efficiencies		
retail	BEA/GBA	93%
	GBA/GFA	10%
	GFA/NLA	100%
hotel	BEA/GBA	93%
	GBA/GFA	15%
	GFA/NLA	61%
commercial/innovation	BEA/GBA	93%
	GBA/GFA	56%
	GFA/NLA	92%

Typ High	GBA	GFA	NSA
Commercial	1,498	1,228	1,160
		82.0%	94%

Typ Low	GBA	GFA	NSA
Commercial	1,502	1,189	1,120
		79.2%	94%

Actual Efficiencies	BEA	GBA	Efficiency	
BEA/GBA	70,627	65,982	93%	

								Commercial Innovation				1	otel	Retail		
			RL	Floors	Height	BEA	GBA	GFA	NLA	GFA	NLA	GFA	NSA	GFA	GLA	
		Top RL	206.00					İ		İ.				1		
KY RISE	level 46	plant/pool/bar	197.20	8.80	195.60	1106	1082					455				
OWER	level 45	plant/facilities	194.00	3.20			1082	1		1			0	1	-	
					186.80	1106						113				
	level 44	hotel 9	190.80	3.20	183.60	1106	1082			1		899	664			
	level 43	hotel 8	187.60	3.20	180.40	1106	1082					899	664			
	level 42	hotel 7	184.40	3.20	177.20	1106	1082					899	664			
	level 41	hotel 6	181.20	3.20	174.00	1106	1082					899	664			
	level 40	hotel 5	178.00	3.20	170.80	1106	1082					899	664			
	level 39	hotel 4	174.80	3.20	167.60	1106	1082					899	664			
	level 38	hotel 3	171.60	3.20	164.40	1106	1082					899	664			
	level 37	hotel 2	168.40	3.20	161.20	1106	1082					899	664			
	level 36	hotel 1	165.20	3.20	158.00	1106	1082					899	664			
	level 35	sky lobby	159.20	6.00	154.80	1106	889					738				
IGH RISE	level 34	Commercial 26/loading	155.40	3.80	148.80	1520	1498	1115	1053					1		
TOWER	Level 33	commercial 25	151.60	3.80	145.00	1520	1498	1228	1160			İ		1	-	
												1		1	+	
	level 32	commercial 24	147.80	3.80	141.20	1520	1498	1228	1160	1				+	-	
	level 31	commercial 23	144.00	3.80	137.40	1520	1498	1228	1160					+		
	level 30	commercial 22	140.20	3.80	133.60	1520	1498	1228	1160	1						
	level 29	commercial 21	136.40	3.80	129.80	1520	1498	1228	1160	<u> </u>						
	level 28	commercial 20	132.60	3.80	126.00	1520	1498	1228	1160							
	level 27	commercial 19	128.80	3.80	122.20	1520	1498	1228	1160							
	level 26	commercial 18	125.00	3.80	118.40	1520	1498	1228	1160							
	level 25	commercial 17	121.20	3.80	114.60	1520	1498	1228	1160							
	level 24	commercial 16	117.40	3.80	110.80	1520	1498	1228	1160							
	level 23	commercial 15	113.60	3.80	107.00	1520	1498	1228	1160					1		
	level 22	commercial 14	109.80	3.80	103.20	1520	1498	1228	1160	1		1		1		
	level 21	commercial 13	106.00	3.80	99.40	1520	1498	1228	1160					1		
OW RISE			100.00	6.00			1200	1220	1100							
OWER	level 20	plant			95.60	1520		1100	1100					1		
	level 19	commercial 12	96.20	3.80	89.60	1520	1502	1189	1120			1				
	level 18	commercial 11	92.40	3.80	85.80	1520	1502	1189	1120							
	level 17	commercial 10	88.60	3.80	82.00	1520	1502	1189	1120	<u> </u>						
	level 16	commercial 9	84.80	3.80	78.20	1520	1502	1189	1120							
	level 15	commercial 8	81.00	3.80	74.40	1520	1502	1189	1120							
	level 14	commercial 7	77.20	3.80	70.60	1520	1502	1189	1120							
	level 13	commercial 6	73.40	3.80	66.80	1520	1502	1189	1120							
	level 12	commercial 5	69.60	3.80	63.00	1520	1502	1189	1120							
	level 11	commercial 4	65.80	3.80	59.20	1520	1502	1189	1120							
	level 10	commercial 3	62.00	3.80	55.40	1520	1502	1189	1120							
	level 9	commercial 2	58.20	3.80	51.60	1520	1502	1189	1120						-	
		commercial 1	54.40	3.80	47.80		1502	1189	1120	1		1		1	-	
	Level 8					1520		1189	1120						-	
OID TOWER		plant	48.40	6.00	44.00	1520	1031					1		1	-	
	level 6	Innovation / hotel	44.60	3.80	38.00	1520	1031			445	384				-	
	level 5	Innovation / hotel	40.80	3.80	34.20	1520	1031			445	384					
	level 4	innovation terrace	33.20	7.60	30.40	2351	875			413	352					
ODIUM	level 3	Innovation / hotel	28.20	5.00	22.80	2351	2015			837	772					
	level 2	Innovation / hotel	23.20	5.00	17.80	2351	2015			1690	1625					
	level 1	Innovation / hotel	18.00	5.20	12.80	2351	2167			1180	1082					
MEZZANINE	mezzanine	lobbies / plant	14.20	3.80	7.60		560	307								
GROUND	ground 0	retail / lobbies	10.40	3.80	3.80	2351	2270	257		125		369		219	2	
	subtotal			0.00	5.00	70,627	65,982	31,911	29,573	5,135	4,599	9,766	5,976	219	2	
	Jubiolai					10,021	00,002	51,911	23,010	5,135	7,000	5,700	5,570	213	- 2	
ACEMENT	hocema-1 1	loading /slast	4.90	6.60			0079							1		
BASEMENT	basement 1	loading/plant		5.50			2278									
	basement 2	bike parking/EOT	1.85	3.05			2278									
	basement 3	parking B3	-1.20	3.05			2278									
		and the DA	-4.25	3.05			2278									
	basement 4	parking B4														
	basement 4 basement 5	parking B4 parking B5	-7.30	3.05			2278								_	
						0	2278 11.390	0	0	0	0	0	0	0	c	

Appendix D PROPOSED DCP ENVELOPE DRAWINGS

Envelope Basement Level Envelope Grounnd Floor and Level 1 Envelope Podium Level Envelope Void Tower Level Envelope Top Tower Level Envelope Roof Plan Summary Envelope Sections Envelope Elevations Envelope Axos





Envelope Basement Level



For Information



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fjmt



NORTH-SOUTH SECTION

GREATON - 187 Thomas St



1:1200 @ A3

For Information










For Information



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fjmt-2010



Appendix E STREETSCAPE ANALYSIS

Thomas St





Quay St



Valentine St







Thomas and Quay Option 1 & 2

A consistent street wall exists along Thomas and Quay Streets.

Three options have been considered on how a new building could relate to and enhance the proposed new Square on Quay Street.







View 1 - Street Wall **Option 1**

RL33.2

George

Plan - Street Wall Option 1

View 1 - Street Wall **Option 2**



Thomas Street

City of Sydney Proposed New Square



Plan - Street Wall **Option 2**

Appendix F EXISTING PLANNING CONTROLS

<u>Height</u>

Sydney LEP 2012

Maximum building height : 50m

Floor Space Ratio

Sydney LEP 2012

Maximum floor space ratio : 7.5 : 1





Y 50





AB2 7.5

Street Frontage Height

Setbacks Above Street Wall

Sydney DCP 2012

Table 5.1

Haymarket / Chinatown Special Character Area

15m on all other streets; or the street frontage height of the nearest heritage item on the same side of the street block in which the site is located. Sydney DCP 2012

5.1.2.1 Front setbacks

5.1.2.2 Side and rear setbacks

Front Setbacks : 8m

Side and Rear Setbacks

- Commercial windows : 3m

- Hotel windows : 6m

- No principal windows : Om



Appendix G HEIGHT CONTROLS

Draft Central Sydney Planning Strategy Height Maps



Airspace For Sydney Airport

187 Thomas Street: RL 335.2m - 340m

187 Thomas Street: RL 290m - 300m

Height Control Summary



HEIGHT OF BUILDING LIMIT WITH 10% DESIGN EXCELLENCE

SYDNEY LEP 2012

SYDNEY AIRPORT RADAR TERRAIN CLEARANCE CHART (**RTCC**) RADAR LOWEST SECTOR ALTITUDE (**RLSALT**) DRAFT 2018 UPDATE

Appendix H SKY VIEW FACTOR ANALYSIS

Draft Svdnev DCP 2012 (Draft CSPS Amendment) **Clauses To Vary Setbacks**

Street Setback

Section 5.1.1.1

(3) Where noted in Table 5.2 Minimum Street Setbacks and on the Special Character Area maps, variation to Street Setbacks may be permitted to building massing that provides:

(a) encroachment(s) 2m forward of the minimum Street Setback within the middle third of the frontage to a Public Place and provision of compensating recess(es) of equal to or greater area up to 4m behind the minimum Street Setback: or

(b) equivalent or improved wind comfort, wind safety and daylight levels in adjacent Public Places relative to a base case building massing with complying Street Frontage Heights and Street Setbacks (i.e. variation to massing is governed by achieving equal or better performance).

Procedures for demonstrating compliance with 5.1.1.1(3)(a) and (b) are set out in Schedule 11.

Side & Rear Setbacks

Section 5.1.1.3

(5) Variation to Side and Rear Setbacks and Building Form Separations may be permitted to building massing that provides equivalent or improved wind comfort, wind safety and daylight levels in adjacent **Public Places** relative to a base case building massing with complying Side and Rear Setbacks (i.e. variation to massing is governed by achieving equal or better performance)

Procedures for demonstrating compliance with 5.1.1.3(4) are set out in - Schedule 11.





Schedule 11

Procedures for demonstrating compliance with variation provisions for setbacks, separations and tapering in Central Sydney.

Procedure B: Equivalent or improved wind comfort and wind safety and daylight levels in adjacent Public Places

In order to demonstrate compliance with Section 5.1.1.1(3)(b) and Section 5.1.1.3(5) in regards to varying Minimum Street Setbacks and Side and Rear Setbacks, Building Form Separations and Tapering provisions respectively, the following procedure must be followed:

(1) Procedure B can only be used to vary setbacks for sites larger than 1000m2.

(2) Where (1) is satisfied, variation to relevant setbacks may be permitted to building massing that provides equivalent or improved wind comfort, wind safety and daylight levels in adjacent Public Places relative to a base case building massing with complying Height, Street Frontage Heights, Street Setbacks, Side and Rear Setbacks and Tapering.

(3) The base case building massing with complying Street Frontage Heights, setbacks and tapering is established by modelling 3 dimensional podium and tower components as follows:

(a) The podium is modelled by extruding the subject site boundary vertically 35m above existing ground level (as it varies around the site perimeter) for buildings up to 120m high and 25m above ground level for taller buildings.

(b) The Tower Component is modelled by defining an area set out by the required street, side and rear setbacks, excluding areas over heritage items and Tower Component areas narrower than 6m wide. For Tower Components where at least one face is longer than 30m the resultant area is chamfered with a 10m radius at all external corners. The resultant shape is extruded to the maximum permissible building height as it varies around the site. The resulting tower form must be tapered by scaling it horizontally in both horizontal directions (X and Y) by 95% between 120-240m and by 90% above 240m above ground level. Note: the maximum permissible building height excludes architectural roof features but includes all other relevant controls including LEP height controls. Sun Access Planes, No Additional Overshadowing Controls, Special Character Area height and setback controls, View Controls Airport restrictions etc.

(4) To demonstrate equivalent (improved) wind comfort, wind safety and daylight levels in adjacent Public Places relative to the base case building massing (established in (3) above), the following must be modelled and reported for the base case building massing and the proposed scheme wind speeds as defined by Section 5.1.9 Managing Wind Impacts, Sydney DCP 2012 for comfort and safety.

(5) the average annual daylight level (which may be approximated by the average Sky View Factor)

Note: Sky View Factor (SVF) means the extent of sky observed above a point as a proportion of the total possible sky hemisphere above the point. SVF is calculated as the proportion of sky visible when viewed from the ground (as an abstract horizontal surface) up. SVF is a dimensionless value that ranges from 0 to 1. A SVF of 1 denotes that the sky is completely visible to the horizon in all directions; for example, in a flat terrain. When a locations has topography or buildings blocking view to any part of the sky, it will cause the SVF to decrease proportionally.

(6) Wind speeds must be measured within the existing city form in areas where wind speeds are likely to change as determined by a wind report.

(7) Daylight levels or SVF must be measured with the existing city form (including developments under construction as if they were completed) and should exclude any elements within a Public Place e.g. tree and awnings to a distance of at least 50m from sit boundaries. In this document "equivalent" wind spee and daylight/SVF is to be understood as very slight "better than" at a high level of accuracy. For example a SVF of 0.10001 is equivalent to a SVF of 0.10000 by being very slightly better than it. For wind speed the comfort values should be averaged and compared. The categories are not relevant in demonstrating equivalence.

Defining The Base Case Tower Component Area And Building Massing



Sky View Factor Means -

The extent of sky observed above a point as a proportion of the total possible sky hemisphere above the point

Methodology

This study identifies the potential impact of the Proposed DCP Envelope on daylight levels over a 1m grid along surrounding Public Places to a distance of 200m radius from the development site.

Study on Impact of Base Case Massing and Proposed DCP Envelope

Results

improves an average SVF in the surrounding public domain with in the study area when compared with the Base case as per CSPS.

This study indicates that the Proposed DCP Envelope

The improvement of the Envelope is summarised in the below table.

In conclusion, the Proposed DCP Envelope complies with the requirement of daylight levels in adjacent Public Places, which is defined in Draft Sydney DCP 2012 - Central Sydney Planning Review Amendment Schedule 11.

hin der	Test Case	Average SVF	Equivalent to	 Improvement	
uld es	Base Case Massing	32.882064 %	Base Case Massing	upon Base Case Massing	
ite ed itly	Proposed DCP Envelope	32.915356 %	-	+0.033292%	

Sky View Factor Analysis



	Average SVF
lassing	32.882064 %

Envelope Options

A series of potential building envelopes has been evaluated against base case massing which was defined by Draft CSPS Amendment. The test has been conducted with and without future contexts within the neighbouring future tower clusters. The listed envelopes have demonstrated improved daylight levels in adjacent Public Places relative to the Base Case Building Massing with varied setbacks and heights.

Those envelope options are carefully examined with wind comfort, wind safety and also floor plate size, regularity and its use.





• FSR approx. 25.13 : 1

• Average SVF 32.883181%

- GFA approx. 60,714 m2
- FSR approx. 25.82 : 1
- Average SVF 32.882374%

• GFA approx. 51,714 m2

Option 5E Envelope

- FSR approx. 22.00 : 1
- Average SVF 32.949525%



Proposed DCP Envelope

Finally Proposed DCP Envelope has been selected from the series of envelope options, which demonstrates the improvement of daylight levels, wind comfort, wind safety as well as accommodating a suitable sized regular floor plate for the proposed use.

- The Proposed DCP Envelope produces improved Sky View Factor of 0.033292%, with an estimated yield of:
- FSR approx. 25.00 : 1.





Thomas Street 5m 10m Ω 8 B M Λ Valentine Street

Proposed DCP Envelope - NW

(22.80m Above GL)



Sky View Factor (%)

Average SVF: Base Case Massing

Average SVF: Proposed DCP Envelope

Comparison | Base Case Massing vs Proposed DCP Envelope





Test Case	Average SVF	Equivalent To Base	Improvement Upon	
Base Case Massing	32.882064 %	Case Tower Building Massing	Base Case Tower Building Massing	
Proposed DCP Envelope	32.915356 %	-	+0.033292 %	

Appendix I WIND ANALYSIS

Executive Summarv

Generally, the inclusion of any large buildings on the fringe of a City markedly changes the local wind environment. The first isolated building typically creates the largest change in wind conditions with the windiest locations at the building corners. Subsequent large developments alter the overall wind flow pattern making some areas calmer and others windier, particularly at the outer corners of the compound shape and between closely spaced towers. As this area of the city continues to expand the area would tend to become calmer while the windier locations are moved to the perimeter of the developed area. Ideally the 'final' developed builtup profile would have the tallest buildings towards the middle tapering in height to the fringes.

Compared with the existing wind conditions, the inclusion of a large building generally increases the local comfort wind speeds by about one criterion level. For this site, the wind conditions change comfort classification category from pedestrian sitting to pedestrian standing. The majority of locations meet the target classification of pedestrian walking and standing depending on location.

From a safety perspective there are fewer exceedances of the safety criterion in the Proposed than the Baseline configuration. These locations are close to the site along Thomas and Valentine Streets and only slightly exceed the criterion level. The critical wind directions are from the south-east (where there are numerous proposed large buildings that would be expected to reduce the incident wind speed and direction) and the west.

Measured wind conditions are highly dependent on the proposed building massing, geometry, distribution, and orientation. The current tests have shown that the wind conditions around the site are problematic in specific areas. From a fundamental fluid mechanics perspective, there are numerous potential solutions to mitigate the exceedances of the safety criteria as described in Figure 1 and a combination of features could be employed to mitigate the issues. The current testing indicates that amending the tower detail close to the podium has a beneficial impact on the wind conditions at ground level reducing the number of exceedances of the safety criterion.

As part of the Design Excellence process, the architect teams would be expected to address the highlighted wind issues around the site, through incorporation of such features described in Figure 1. It is considered that there is currently sufficient information to highlight the critical locations impacted by wind, and information to inform an appropriate architectural solution. Additional testing to 'solve' the problems prior to the architectural Design Excellence competition would be considered unnecessary, as proposed building forms could drastically change the local wind conditions on the ground plane. Keeping wind considerations as a key consideration through the Design Excellence process is considered the best methodology to mitigate the wind issues. This would be a similar process to other Design Competitions processes such as 338 Pitt Street, and Cockle Bay Precinct, which all showed exceedances of the comfort and/or safety criteria in the initial massing scheme.

(Refer to the Environmental Wind Assessment report for further details.)



Figure 1 Methods to improve pedestrian level wind conditions

Modelling

Wind-tunnel testing was conducted by RWDI on the existing, and two potential schemes for the site: the base envelope case, and an initial proposed design. Details of the three configurations are shown in Figure 3

The construction of the physical models was based on the 3d model received from the architect. No landscaping was included in the models as this cannot be relied on for pedestrian safety in strong winds. Any landscaping would locally slightly improve the wind comfort conditions. All approved buildings in the vicinity were included in the model.

The wind-tunnel testing programme conducted by RWDI was in accordance with the requirements of AWES (2019) and appropriate for the investigation. Appropriate wind speed and turbulence profiles, and test locations were used in the testing. Testing was conducted for 36 wind directions and integrated with the Sydney wind climate.



Wind rose showing probability of time of wind direction and speed





RL 33.2 m

()

Valentine Street

Proposed DCP Envelope

(



Existing



Base case massing



Proposed DCP envelope Figure 3 Wind tunnel test models

Discussion of results

The primary findings of the study for the three configurations are summarised in Figure 4, which list the locations selected for investigation, shown in Figure 5, along with the target and measured comfort and safety classifications. The values presented in Figure 4 are the wind speed associated with the criterion probability of time, and the colour represents the classification associated with the criterion. An additional classification has been included for the safety criterion when the mean wind speed is between 22 and 24 m/s, close to the failure level.

A visual summary of the spatial wind comfort classifications in and around the site for the various configurations is shown in Figure 5 to Figure 7 for the existing, baseline, and proposed configurations respectively. These plots show the physical location identifier, with the colour representing the wind classification for comfort in the top and safety in the lower images. The results have been condensed in Figure 4 for ease of comparison between configurations.

For pedestrian comfort, it is evident that in the existing configuration close to the site along Thomas, Valentine and Quay Streets the majority of locations are classified as suitable for pedestrian sitting activities with a number of locations just inside the standing criterion level. The wind speed at all locations with the development increase in magnitude and are classified as suitable for pedestrian standing and walking and therefore meeting the target criterion level. Generally the comfort conditions with proposed development are slightly better than the baseline case.

Further from the site the wind comfort conditions at the majority of locations in all configurations are classified as suitable for pedestrian standing type activities. In each configuration there are locations that move across the criterion threshold to be classified as walking or sitting.

Based on the results, the majority of locations would be classified as suitable for standing and walking type activities thereby meeting the target comfort classifications.

In terms of pedestrian safety, the existing configuration passes everywhere except close to the McKell building, due to the isolated massing of this building. In the Baseline configuration, there are additional exceedances of the safety criterion. The number and magnitude of exceedances of the safety criterion decreases in the Proposed configuration.

The primary areas of concern for both comfort and safety are close to the site along Thomas and Valentine Streets. The further afield issues around the McKell building are existing conditions. The flow mechanism causing the nearby issues are for winds from the south-east and west quadrants causing downwash flow accelerating around the windward corners of the exposed building, as described in Appendix 2. It is evident that amendments to the building geometry such as the inclusion of a notch above the podium level in the Proposed configuration, Figure 3, have a beneficial impact on the surrounding wind conditions. Such a notch is beneficial for the ground floor environment, but would be expected to classify the podium as suitable for pedestrian walking type activities, meeting the wind speed associated with the sitting criterion for about 60% of the time, which could be improved with local amelioration on the terrace.

Further improving the ground floor conditions through the Architectural Design Excellence competition using the fundamental guidelines described in Figure 1 should be achievable with the information available, and a key consideration for the technical panel and jury.

(Refer to the Environmental Wind Assessment report for further details.)

			L			nel results	1	
Description /		Comfort	Existing		Baseline		Proposed	
ider	tifier	target >6 to 8	Comfort 3.3	Safety 13.5	Comfort 5.8	Safety 21.9	Comfort 5.8	
	1 2	>6 to 8	3.3	15.5	5.6	21.9	4.7	21.9 17.0
	3	>6 to 8	3.6	14.3	5.8	23.4	5.0	19.3
	4	>6 to 8	n/a	n/a	n/a	n/a	5.6	21.9
	5	>6 to 8	3.6	13.5	6.4	23.4	5.0	19.0
	6	>6 to 8	3.6	13.5	6.7	25.4	5.6	20.5
	7	>6 to 8	3.6	13.5	8.1	29.0	6.1	22.5
	8	>6 to 8	3.9	15.5	6.4	22.5	6.4	23.1
	9	>6 to 8	4.2	16.4	7.8	26.6	6.9	22.8
st	48	>6 to 8	3.6	13.5	5.0	18.1	5.3	20.5
Thomas St	49	>6 to 8	3.6	13.2	5.8	20.2	3.9	16.4
non	50	>6 to 8	4.2	19.3	5.3	21.1	4.2	17.8
Ē	51	>6 to 8	3.6	14.0	4.7	19.3	4.2	15.8
	52	>6 to 8	3.6	14.6	4.2	17.3	5.0	17.8
	53	>6 to 8	4.2	18.1	4.4	16.4	5.6	19.9
	54	>6 to 8	3.9	17.0	5.3	21.6	5.3	20.5
	70	>6 to 8	3.9	16.7	4.7	17.6	5.0	21.4
	71	>6 to 8	3.6	15.2	3.6	14.3	4.4	18.4
	72	>6 to 8	3.3	12.9	5.3	23.4	6.1	23.4
	73	>6 to 8	3.6	15.5	5.0	20.8	6.1	23.4
	74	>6 to 8	3.9	14.0	6.7	26.0	6.4	25.7
	75	>6 to 8	3.3	11.4	6.1	24.3	6.7	22.8
	10	>6 to 8	3.9	13.7	6.7	23.7	6.1	24.6
	11	>6 to 8	4.2	14.0	8.6	27.8	8.3	25.2
et	12	>6 to 8	3.9	13.7	6.9	23.7	6.4	20.5
Valentine Street	13	>6 to 8	n/a	n/a	n/a	n/a	5.8	19.0
ne	14	>6 to 8	3.9	13.7	5.3	19.3	6.1	22.2
enti	15	>6 to 8	3.6	13.5	5.0	20.5	5.6	23.4
/ale	16	>6 to 8	3.3	11.4	n/a	n/a	5.6	24.0
-	17	>6 to 8	3.1	10.8	4.4	17.8	5.6	22.8
	40	>6 to 8	3.1	10.8	3.9	15.2	5.0	25.4
	41	>6 to 8	4.2	15.2	4.2	15.5	5.6	24.0
	42	>6 to 8	3.9	13.5	4.4	21.1	5.6	21.4
	43	>6 to 8	3.9	16.1	6.4	23.1	4.4	18.7
et	44	>6 to 8	4.7	19.0	5.8	19.9	5.0	18.4
Quay Street	45	>6 to 8	3.6	13.7	4.7	16.7	5.0	19.6
ay S	46	>6 to 8	3.3	11.7	5.0	18.4	5.0	18.7
Qua	47	>6 to 8	3.6	12.6	5.6	19.9	5.8	20.5
	55	>6 to 8	3.9	17.8	5.8	24.3	6.1	23.1
	56	>6 to 8	4.4	22.2	5.8	23.7	5.3	21.1
	57	>6 to 8	3.9	16.4	5.8	21.4	5.8	22.2
	18	>4 to 6	3.9	14.0	4.4	19.3	5.0	19.0
	19	>4 to 6	4.2	15.5	4.2	17.3	4.7	19.9
	21	>4 to 6	5.0	19.0	5.0	18.1	5.0	18.4
	22	>4 to 6	4.7	17.8	5.3	21.9	4.7	17.8
jet	23	>4 to 6	5.3	19.3	5.6	20.5	5.3	19.6
George Street	24	>4 to 6	5.8	22.2	6.4 5.6	24.0 21.1	6.1	22.8
ee	28	>4 to 6	5.3	21.1	5.6		5.6	20.8
eor	32	>4 to 6	3.6	14.3	n/a	n/a	5.0	19.0
G	33	>4 to 6	3.6	12.6	n/a	n/a	4.2	15.5 19.0
	35 36	>4 to 6 >4 to 6	4.7 4.7	17.8 17.0	3.9 5.8	15.8 19.6	4.7 4.4	19.0
	36	>4 to 6 >4 to 6	4.7	17.0	5.8 4.7	19.6	4.4 4.2	16.1
	37	>4 to 6	4.2	15.2 16.1	4.7	16.7	4.2	15.2
	39	>4 to 6	4.2	16.7	4.4	15.2	4.2	13.0
	58	>6 to 8	5.0	19.9	5.0	21.4	5.0	19.0
	58 59	>6 to 8	4.2	19.9	5.3	21.4	3.9	19.0
	60	>6 to 8	4.2	17.0	5.0	19.3	5.0	18.1
	61	>6 to 8	3.9	17.5	3.9	16.4	4.2	15.8
ad	62	>6 to 8	4.7	17.3	5.0	17.8	4.7	16.4
Ro	63	>6 to 8	5.0	19.6	3.9	15.5	4.7	18.4
om	64	>6 to 8	5.0	20.8	4.7	17.0	5.0	19.3
Ultimo Road	65	>6 to 8	5.0	22.5	5.3	19.0	5.3	20.8
-	66	>6 to 8	5.0	21.4	5.0	19.6	5.3	19.9
	67	>6 to 8	5.3	21.4	5.0	21.9	4.7	18.4
	68	>6 to 8	4.7	18.7	5.0	20.5	5.0	18.7
	69	>6 to 8	4.2	14.6	4.2	16.1	3.9	15.2
lls ng	25	>6 to 8	6.1	24.6	6.1	25.4	6.1	25.4
McKell Building	26	>6 to 8	6.1	23.1	6.4	25.4	6.1	24.3
Bu M	27	>6 to 8	7.2	27.5	7.8	29.0	7.5	28.4
Pitt St	34	>6 to 8	5.8	19.9	4.2	18.7	5.8	19.3
Rawson Place 15	29	>6 to 8	5.3	18.1	5.8	18.7	5.6	18.4
vs ac	30	>6 to 8	6.4	21.6	6.7	24.3	6.1	22.5
5 -		>6 to 8	5.6	21.1	5.8	22.2	5.6	21.1

Figure 4 Summary of Wind tunnel test results

LEGEND



>24 Fail

Safety criterion ≤22 Pass >22 Pass



Figure 5 : Existing Configuration Comfort (T) And Safety (B) Wind Rating

Figure 6 : Baseline Configuration Comfort (T) And Safety (B) Wind Rating



Figure 7 : Proposed Configuration Comfort (T) And Safety (B) Wind Rating

PUBLIC SPACE OVERSHADOWING ANALYSIS Appendix J

Chippendale Green Overshadowing <u>Analysis</u>

This analysis studies potential overshadowing impact on Chippendale Green from the indicative massing on the worst case day of June 21, before 10am when any potential impact would occur.

The following shadow diagrams indicate existing (grey) and additional (orange) shadows on June 21 at 15 minute intervals from 8am to 10am, indicating no additional shadow impact during this time. The shadow cast from the indicative scheme falls within the existing shadow cast by the central park main tower to the north east of the site.



Existing Shadows

Chippendale Green

Central Park Main Tower

Additional Shadows From Indicative Scheme

.





187 Thomas Street





Chippendale

Green







21 June - 8.45am



21 June - 9.30am





21 June - 9am







21 June - 9.15am





Thomas And Quay St Upgrade Overshadowing Analysis

The City of Sydney had identified a series of priority projects upgrading the public domain along Thomas and Quay Streets. These works include footpath widening and the potential creation of a new square at the intersection of Thomas and Quay Streets.

Overshadowing analysis for mid-winter and midsummer has been undertaken to determine the extent of impact of the proposed massing on the proposed square and the footpaths on Thomas Street.



Improving Quay Street, Haymarket - City Of Sydney



Thomas St

Thomas St

21 December

21 June

Impact on available hours of sun access (%)

Proposed massing compared to existing.



Thomas Street overshadowing analysis to footpaths on Thomas Street





Impact on available hours of sun access (%)

Proposed massing compared to existing.



Appendix K RESIDENTIAL OVERSHADOWING ANALYSIS

Residential Overshadowing Analysis

An initial residential sun access impact study has been undertaken for the southern downstream Neighbouring residential buildings based on the requirement of New development must not create any additional series of controls.

Neigbouring Residential buildings

The Analysed Neighbouring residential buildings and Overshadowing Study Zone are indicated as site plan below.

Control

DCP 2012 Clause 4.2.3.1 (3) :

overshadowing onto a neighbouring dwelling where that dwelling currently receives less than 2 hours direct sunlight to habitable rooms and 50% of the private open space between 9am and 3pm on 21 June.

Planning Proposal Central Sydney 2020

Clause 5.1.2 :

Central Sydney's dynamic and dense development environment certainty for the protection of private amenities such as sunlight and views cannot be guaranteed. The maintenance of sunlight access and private views to existing development should not unduly restrict the economic performance and economic growth of Central Sydney, where proposed development has demonstrated compliance with Sydney LEP 2012, in relation to height and FSR, and Sydney DCP 2012 Section 5.1.1 Built Form Controls. This is especially the case for proposed employment related developments that impact on existing residential and serviced apartment developments.

Planning Proposal Central Sydney 2020

Clause 5.1.2 :(6)

(6) When considering the likely impacts of a development on surrounding developments any adverse impacts on existing private views, visual privacy, solar and daylight access are considered reasonable where compliance with Section 5.1.1 and 5.1.2(1), (2) and (3) has been achieved.





Proposed Sun Access 9am - 3pm mid winter.

Residential Buildings within Study Zone

Methodology

The standard for residential sun access compliance is the Apartment Design Guide minimum of 2 hours to living spaces between 9:00am and 3:00pm on 21 June (mid-winter)

The methodology is as follows:

1. Residential buildings potentially affected were identified by determining the extent of any shadow of an RL 300m tower at the winter equinox.

2. Existing sun access on the facades of the potentially affected buildings was calculated.

3. Sun access on the potentially affected buildings with the proposed massing was then calculated.





Conclusion

a. The most overshadowing impact as a result of the proposed massing occurs closest to the development.

b. Some reduction of sun access is noticeable on 1 Central Park, however 3 hours of sun access is maintained in the affected areas

c. 2 hours sun access is maintained to the facades of potentially affected residential buildings

d. A more detailed study of the nearby buildings on Quay street would be required as part of a Stage 2 Development Application submission to assess any impact on ADG requirements.

e. Under the Planning Proposal Central Sydney 2020, the protection of private amenities such as sunlight and views cannot be guaranteed within the Central Sydney's dynamic and dense development environment.

Regardless of the ability for commercial developments to impact private residential amenity under the draft DCP, the proposed development envelope does not reduce existing sun access to living spaces of surrounding residential developments below the ADG minimum of 2 hours in mid-winter.





Existing Sun Access

9am - 3pm mid winter.

Proposed Sun Access 9am - 3pm mid winter.



Sun Eye View Study

An initial residential sun eye view study has been undertaken for the adjacent Neighbouring residential buildings based on the requirement of series of controls.

Control

DCP 2012 Clause 4.2.3.1 (3) :

New development must not create any additional overshadowing onto a neighbouring dwelling where that dwelling currently receives less than 2 hours direct sunlight to habitable rooms and 50% of the private open space between 9am and 3pm on 21 June.

Planning Proposal Central Sydney 2020

Clause 5.1.2 :

Central Sydney's dynamic and dense development environment certainty for the protection of private amenities such as sunlight and views cannot be guaranteed. The maintenance of sunlight access and private views to existing development should not unduly restrict the economic performance and economic growth of Central Sydney, where proposed development has demonstrated compliance with Sydney LEP 2012, in relation to height and FSR, and Sydney DCP 2012 Section 5.1.1 Built Form Controls. This is especially the case for proposed employment related developments that impact on existing residential and serviced apartment developments. Planning Proposal Central Sydney 2020

Clause 5.1.2 :(6)

(6) When considering the likely impacts of a development on surrounding developments any adverse impacts on existing private views, visual privacy, solar and daylight access are considered reasonable where compliance with Section 5.1.1 and 5.1.2(1), (2) and (3) has been achieved.

Methodology

743-755 George Street

9:00am - 3:00pm AEST 21st June (Mid Winter)

30 minutes intervals







Sun Eye View Study



21st June 09:00am



21st June 10:30am



21st June 09:30am



21st June 11:00am



21st June 10:00am



21st June 11:30am





21st June 12:00pm



21st June 12:30pm



21st June 01:30pm



21st June 02:00pm



21st June 01:00pm



21st June 02:30pm





21st June 03:00pm

Conclusion

The extent of solar access to apartments of 743-755 George Street has been measured in 30 minutes intervals.

The Proposed Dcp Envelope does not impact on 2 hours solar access of any apartments of 743-755 George Street between 9am and 3pm on 21st June.

Further detailed analysis will be undertaken as part of a future Stage 2 detailed development application.

Under the Planning Proposal Central Sydney 2020, the protection of private amenities such as sunlight and views cannot be guaranteed within the Central Sydney's dynamic and dense development environment.

Regardless of the ability for commercial developments to impact private residential amenity under the draft DCP, the proposed development envelope does not reduce existing sun access to living spaces at 743-755 George Street below the ADG minimum of 2 hours in mid-winter.

Appendix L PUBLIC VIEW ANALYSIS

Valentine St View 1





View 1 - Google Street View



View 1 - Existing

Valentine St View 2









View 2 - Existing

Plan - View 2



View 1 - Proposed Envelope



View 2 - Proposed Envelope

Appendix M PRIVATE VIEW ANALYSIS

Side Setbacks Adjacent Residential

743 - 755 George St West Facing



Side Setbacks Adjacent Commercial

741 George St West Facing



Side Setbacks Adjacent Commercial 191 Thomas St South Facing



Neighboring View Study 743 - 755 George St

Existing View





Bedroom 1 W7

Proposed View



Bedroom 1 W7

Site Plan



Key Elevation
Existing View





Bedroom 1 W11

Proposed View



Bedroom 1 W11

Site Plan



Key Elevation

Existing View





Living Room 2 W7

Proposed View



Living room 2 w7

Site Plan



Key Elevation

Existing View





Living Room 2 W11

Proposed View



Living Room 2 W11

Site Plan



Key Elevation

Appendix N FUTURE POTENTIAL DEVELOPMENT ON ADJACENT BLOCKS

Setback and Future Potential Development on Adjacent Blocks

Any tower development for the site need to consider separation from other buildings.

The Draft CSPS identifies sites with future potential and also identifies minimum setback for these sites.

From this an indication of building separation from future towers can be determined.

The separation from future tower envelopes across Thomas, Quay and Valentine Streets are all greater than 24m.







CSPS Identified Neighbouring Sites And Potential Future Envelopes

Future Potential Development on Block 153 North

The following is a high level study of the remaining capacity of 'Draft CSPS Appendix B Built form Capacity Study. Identified Site 153,' once 187 Thomas St site has been removed.

A massing has been developed under the following assumed constraints:

- Single site amalgamation for the remainder of Block 153 to the north of 187 Thomas St
- The podium and street wall heights vary to align with heritage buildings on George St, Ultimo Rd and Thomas St
- 8m street setbacks to Thomas St and Ultimo Rd, with an increased 20m setback to George St as proposed by this 187 Thomas St proposal
- No additional built form over the existing heritage buildings as per Draft CSPS controls, resulting in two tower zones
- The southern zone is assumed to be an unfeasible tower location due to constraints including irregular geometry, small floor plate size after setbacks, and ADG considerations to the north facing living spaces of Capitol Terrace.
- A tower is located in the northern zone conforming with setbacks, height constraints and tapering controls

The resulting massing yield estimate is as follows. These figures may vary based on further investigation into site constraints, potential variations of controls and use mix.

BLOCK 153 NORTH POTENTIAL FUTURE DEVELOPMENT

Site Area: 6,150m²

GFA: approx 80,000m²

FSR: 13:1



Block 153 North Study Plan

Block 153 North Study Axonometric

Appendix O FLOOR SPACE EFFICIENCY STUDY

Double-Deck Lifting Study

Indicative GFA/GBA Efficiency

51714sqm /70106sqm = 73.8%





Low Rise Commercial Floor Plan

GBA (Low Rise Commercial Per Floor)= 1502 sqm Core (Low Rise Commercial)= 269 sqm CORE/GBA= 269/1502 = **17.9%**

High Rise Commercial Floor Plan

GBA (High Rise Commercial Per Floor)= 1498 sqm Core (High Rise Commercial)= 235 sqm CORE/GBA= 235/1498 = **15.7%**



Valentine St

Conventional Lifting Study

Indicative GFA/GBA Efficiency

56849sqm /78095sqm= 72.7%





Core Area

Low Rise Commercial Floor Plan

GBA (Low Rise Commercial Per Floor)= 1502 sqm Core (Low Rise Commercial)= 346 sqm CORE/GBA= 346/1502 = **23.0%** = > 5% increase compared to stacked lifting

High Rise Commercial Floor Plan

GBA (High Rise Commercial Per Floor)= 1498 sqm Core (High Rise Commercial)= 244 sqm CORE/GBA= 346/1502 = **16.3%** => 1% increase compared to stacked lifting

Floor Efficiencies Benchmarks 200 George Street, Sydney



Office Building, Sydney, Australia, Completed 2016

Architects: Francis-Jones Morehen Thorp

- 37 storeys

- PCA premium grade

- 6-star Green Star Office Design

Indicative GFA/GBA Efficiency

43078sqm /63372sqm = 68%



Section

Floor Efficiencies Benchmarks 80 Collins Street, Melbourne





Typical floor plan

Indicative GFA/GBA Efficiency

1402 sqm / 1612 sqm = 86.9%



Typical floor plan

Floor Efficiencies Benchmarks 4-6 Bligh Street, Sydney



Office/Hotel Building, Sydney, Australia

Planning Proposal 2018, Reference Design by Architectus

- 55 storeys

- site area 1,217.8sqm

- FSR sought in planning proposal 22:1

Indicative GFA/GBA Efficiency

26792sqm /39153sqm = 68.4%





Roof Plant & LMR Roof Mezzanine (4m)

x 19 High Rise Levels (3.2m Floor to Floor)

Roof Terrace (4m Floor to Floor) unction (5m Floor to Floor) Club Lounge (4m Floor to Fl Riser Transfer (4m Floor to Floo -F&B -F&B

- 27m² Rooms (11 Rooms / level)

- 27m² Rooms (11 Rooms / level)

- Lift Head Room

- Lift Lobby - Retail / F & B - Loading - Carparks - EOT

- Gym

- Hotel Lift Lobby - F & B

Hotel Room

Hotel Lobby

Со

- Plant - Waste

Gym

Typical floor plan

Appendix P ARCHITECTURAL ARTICULATION & EFFICIENT BUILDING ENVELOPE DESIGN

Architectural Articulation

The reference design includes a heavily articulated envelope. Major building setbacks are at level 8, level 22 and level 48 with additional setback floors at levels 4 and 37. A large void spanning over 4 levels and vertical gardens to multiple facades provide further articulation.

Increased floor to floor heights at ground, level 2, 3 and sky lobby visually break up the facade and allow for additional flexibility in the envelope.



Architectural Articulation





Proposed DCP Envelope

Proposed DCP Envelope

Preferred Indicative Scheme (FSR 22: 1)

Preferred Indicative Scheme (FSR 22:1)

320849 m3



Occupancy Ratio

84.9%

15.1%

Closed Cavity Facade System

The 750mm benchmark dimension for facade zone assumes a naturally ventilated double skin façade (DSF) or similar. These systems typically comprise of a low-iron exterior pane of glass and an interior DGU skin with low-e glazing and thermally broken frames. The two skins are separated by an open air cavity (600mm) with blinds, naturally ventilated by air passing through a void at the bottom and top of each floor plate. Air passes through the cavity, cooling the temperature before being expelled through another void at the top of the ceiling slab.

A Closed Cavity Façade (CCF) on the other hand that has a sealed and pressurised cavity rather than a naturally ventilated one. It is designed to have a slight leakage so a small amount of dehumidified pressure can be pumped into the cavity to stop the ingress of dust.

The CCF allows a significantly reduced thickness of the façade zone - (150-200mm which effectively sits within the depth of a traditional commercial DGU façade system). It uses less material and is effectively cheaper, but also delivered the performance of the naturally ventilated double skin system.

As the typical floor plate for this reference scheme is relatively small a CCF is proposed in order to use the floor space in the most efficient way.



Appendix Q ENVELOPE EFFICIENCY & ALIGNMENT WITH DRAFT COUNCIL DCP ASSUMPTIONS

DRAFT CSPS 2020

Sydney DCP 2012 - Tower Cluster Areas and Design Excellence Procedure Amendment

3.3.2 Design excellence strategy

(1A) (d) provide an indicative FSR for each massing envelope where the envelopes and estimated FSRs assume: (i) - (x).

The chart demonstrates the compliance of the Preferred Indicative Scheme within the Proposed DCP Envelope with Draft Council DCP Assumptions.

		Compliant	Note	Reference
(1)	a 15 metre architectural roof feature zone for sites where the maximum height of the building is determined by Sun Access Planes, No Overshadowing Controls or Public View Protection Planes	4	- The top of building of the reference scheme is at RL 209.8m, which is lower than the Sun Access Plane of Prince Alfred Park above the site.	P.29 Tower Height (3.0 Key Urban
(ii)	a 30 metre architectural roof feature/construction zone where the maximum height of the building is determined by Sydney Airports Prescribed Airspace (excluding the Obstacle Limitation Surface)	¥	- The top of building of the reference scheme is at RL 209.8m including 9m roof feature. With considering a 15m construction crane zone, it is at RL 224.8m which is lower than the PANS-OPS at RL290.	 P.29 Tower Height (3.0 Key Urban Design Principles)
(iii)	5 metres clear floor to floor for ground and first floors and allowances for new pedestrian links and public domain improvements supported by urban design analysis	v	 Ground floor : 7.6m clear floor to floor height Level 1 : 5.2m clear floor to floor height New pedestrian links and public domain improvements are demonstrated in the design report 	 P.78 Section (Appendix B Preferred Indicative Scheme FSR 22:1)
(iv)	3.85 metres floor to floor for typical commercial floors and structural transfer zones at steps in the building massing		- 3.8m floor to floor height is proposed for typical commercial floors, which is suitable for relatively small 1,200 m2 GFA floor plate.	 P.72,73,78 Plan & Section (Apper Preferred Indicative Scheme FSI)
(v)	3.3 metres floor to floor for typical hotel floors and structural transfer zones at steps in the building massing		- 3.2m floor to floor height is proposed for typical hotel floors, which is able to achieve 2.9m ceiling height.	P.78 Section (Appendix B Prefer Indicative Scheme FSR 22:1)



		Compliant	Note	Reference
(vi)	A full floor plant level at least for every 20 occupied levels at minimum 6 metres floor to floor should be provided for plant and equipment with no floor space	4	- 3 full floor plant levels are designed at level 8, 22 and 48 over the 48 storey building.	 P.78 Section (Appendix B Prefer Indicative Scheme FSR 22:1)
(vii)	Minimum 15 per cent of the design envelope for architectural articulation (not occupied by floor space, structures, sun shading or the like)	v	- 15.1% of Proposed DCP Envelope is used for the architectural articulation.	• P.154 (Appendix P Architectural Ar
(viii)	Minimum 750mm facade depth for facade and external shading elements		- 200mm facade based on a closed cavity facade system achieving a higher solar performance and spatial efficiency.	P.155 (Appendix P Architectural Archite
(ix)	Minimum 16 per cent floor space exclusions allocated to building core and other internal non-floor space elements	¥	 Highly efficient floor plate is achieved by the double decker lifts scheme 17.9% core area in Low-rise commercial floor 15.7% core area in High-rise commercial floor 	P.150 (Appendix O Floor Space Ef
(x)	Vehicle access, servicing, services, balconies, voids or other areas are not counted as floor space and should be determined from demonstrated best practice or reference designs.	¥	 The high level strategy of Vehicle access, servicing and the services are described in the technical report. In the reference scheme, the floor to floor height is increased at Ground floor for retails and lobbies, Level 2 and 3 for the innovation and Level 37 for the hotel sky lobby, which activate the spaces and provide amenities. 	P.78 Section (Appendix B Preferred Indicative Scheme FSR 22:1)





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