8/25	LOT 8 SP22302		Eurella Packing and Assembly		No.	No.			
9/25	LOT 9 SP22302		Vacant	N/A	Yes	No			
10/25	LOT 10 SP22302		Ultimate Furniture Pty Ltd	Office & Business Furniture	No.	No.			

Appendix 2 - **MINUTES FROM CONSULTATION WORKSHOPS**

Minutes of Stakeholder Consultation Meetings

Concord West Industrial Precinct Social & Economic Study

Meeting 1: 27 March 2013 (4:00pm-5:30pm)

The Drummoyne Oval

Attendees

Sarah Hill	Hill PDA
Virginia Hill	Hill PDA
Karen James	City of Canada Bay
Paul Dewar	City of Canada Bay
Alex Harb	176-184 George Street
Sam Harb	176-184 George Street
Jim Mench	2 Rothwell Avenue
Richard Mench	2 Rothwell Avenue
Paul Rupero	7 Concord Avenue
Jenny Rudolph	7 Concord Avenue

Apologies

Joe D'Agostino	7 Concord Avenue
Mario Nicomede	7 Concord Avenue

Meeting 2: 9th April 2013 (10:30am-12:00pm)

Hill PDA Office, George Street

Attendees:

Sarah Hill	Hill PDA
Virginia Hill	Hill PDA
Karen James	City of Canada Bay
Paul Dewar	City of Canada Bay
David Civvardi	202-210 George Street
Percy Fernandes	6 Rothwell Avenue
Tony Ryan	1-7 King Street
Lino Caccavo	1-7 King Street

1. Welcome and Introductions

Welcome and introduction to meeting / background to Study by Karen James and Sarah Hill. Meeting attendees introduced themselves and explained the sites / businesses they represent.

2. Local Area Issues

Sarah Hill invited each stakeholder to explain the nature of their business, what attracted them to the Study Area and to identify key issues influencing the Study Area.

Key responses related to:

- **Attraction to the Location** - A number of landowners had purchased sites in the Study Area to operate their businesses as it was closer to their homes (less travel time) than other employment areas in Sydney. The duration of operation for businesses varied from 20+ years to a few years. Major employers such as Westpac had moved to the area on account of the suitability of the building and its attractive leasing arrangements;

- **Range of Businesses** – Stakeholders represented an array of industries including furniture manufacturing and distribution, pharmaceutical manufacturers, gift importers, banking data centres and air conditioning sales / maintenance services;
- **Vehicle Access** – Restricted road access in / out of the precinct. Streets are very narrow for large trucks and vehicles must travel through predominantly residential streets;
- **Transport Access** – Access by rail is a benefit however most employees (i.e. for Westpac) travelled to the Study Area by car;
- **Loading and Car Parking** – most sites had good off-street loading / unloading facilities and car parking however access from the street onto sites was constrained in some locations and created potential conflicts with residential uses;
- **Leasing of Properties** – landowners are finding it difficult to let the premises to industrial tenants due to the age / condition of existing buildings, the larger size of buildings and unsuitable location for industry that relies on good road access for larger vehicles;
- **Development Applications** – Some challenges had been experienced when seeking approval for a new type of business in the Study Area owing to objections by residents with respect to potential noise disturbances;
- **Surveillance** – Safety and security is a growing concern with the increasing number of vacant properties in the Study Area. An increasing number of people are dumping rubbish or vandalising sites and vacant buildings are being used for shelter by homeless people;
- **Residential Uses** – Prospective tenants are more attracted to employment areas such as Silverwater or Western Sydney owing to less potential conflict with surrounding residential uses, better quality buildings and better road access for servicing vehicles;
- **Growing Conflicts** – the rezoning and redevelopment of one site for residential adjacent to an existing operating industrial business / site has the potential to hinder the operation of the existing business. Accordingly the timing of change and any possible rezoning will be critical to protecting businesses.

3. Implications of the Proposed School

Sarah Hill invited Stakeholders to identify any implications of the proposed primary school within the Study Area to the operation of their sites. In this regard it was identified that:

- The school was a sign that the area was changing;
- The school would have potential to create conflict with vehicles servicing sites by way of traffic as well as additional pedestrian / safety challenges; and
- The school would enhance the appeal and suitability of the area for residential development..

4. Potential Implications of Rezoning

Sarah Hill invited all landowners and tenants to discuss any implications rezoning may have on their sites.

- **Landowners** generally agreed that a rezoning to facilitate residential uses would not have a negative impact on the area but rather best utilise its attractive features;
- **Redevelopment Potential** – A number of landowners had purchased their sites with the intention of redeveloping in time as they:
- Recognised the value and amenity of the area for future residential uses (i.e. close to train, park etc.);
- Relocated their businesses to alternative, better suited locations. In some cases stakeholders aimed to operate on the site for another 3-5 years and would thereafter relocate their business and redevelop their sites for alternative uses;
- Retired and closed or sold their businesses.
- Mixed use development (i.e. retail and commercial uses) in the Study Area could have an adverse impact to Concord West Centre. Caution was also raised with respect to the requirement for a mix of uses as there were existing vacant retail and commercial units along George Street;
- The area was not considered suitable for high tech industrial uses or a business park owing to its poor level of visibility and connectivity as well as its competition with larger more established employment precincts in Rhodes and Sydney Olympic Park;
- Contamination would be a key consideration and cost if the sites were rezoned and redeveloped to residential;
- Larger retailers (supermarkets etc.) would not be suitable for the Study Area owing to road access constraints which would limit trade areas. There may however be a role for a small component of convenience retail to support the needs of the local community and to activate areas between the rail station and Study Area; and
- It was recommended by some Stakeholder that any rezoning of the Study Area to alternative uses form part of a broader Masterplan that considered the integration of design, traffic and transport matters.

5. Next Steps

- Hill PDA to present the draft findings and recommendations of the Study to the Stakeholders in early May 2013.

Appendix 3 - **EMPLOYMENT YIELDS**

Industry Category	Yield
Mining	35
Food Product Manufacturing	80
Beverage and Tobacco Product Manufacturing	80
Textile, Leather, Clothing and Footwear Manufacturing	80
Wood Product Manufacturing	80
Pulp Paper and Converted Paper Product Manufacturing	80
Printing, including the Reproduction of Recorded Media	80
Petroleum and Coal Product Manufacturing	80
Basic Chemical and Chemical Product Manufacturing	80
Polymer Product and Rubber Product Manufacturing	80
Non-Metallic Mineral Product Manufacturing	80
Primary Metal and Metal Product Manufacturing	80
Fabricated Metal Product Manufacturing	80
Transport Equipment Manufacturing	80
Machinery and Equipment Manufacturing	80
Furniture and Other Manufacturing	80
Electricity, Gas, Water and Waste Services	80
Construction	80
Wholesale Trade	80
Transport, Postal and Warehousing	200
Information Media and Telecommunications	65
Financial and Insurance Services	20
Rental, Hiring and Real Estate Services	20
Professional, Scientific and Technical Services	22
Administrative and Support Services	22
Unclassified	40

Source: Various Industry Sources including SGS Housing and Employment Study for City of Canada Bay 2008

Appendix 4 - **FEASIBILITY MODELLING ASSUMPTIONS**

Option One: 'As Is' -Redevelopment into Industrial Uses

Project Timeframe

- Project commencement in May 2013.
- Construction spans 18 months.

Purchase Price

$4.7m

End Sale Values

Due to the high-level nature of this assessment and in the absence of detailed plans, Hill PDA has adopted $/sqm in the order of -$ 1,700/sqm of New Industrial Warehouse Space.

Additional sales assumptions include:

- Sales escalations at 2.5 % per annum.
- GST is excluded on non-residential sales.
- Selling costs are assumed at 1.5% of non-residential sales.
- Legal costs 0.20% of gross sales

Capital Works, Construction and Land Costs

Constructions costs have been sourced from Rawlinson's Construction Handbook 2013 and are as follows:

- Demolition and site preparation at $300,000
- Industrial Warehouse/ Office Units
- $855/sqm for main building construction;
- At Grade Parking assume the existing 80 car space.

Additional cost assumptions include:

- Professional fees have been assumed at 5% of building construction costs (3% expensed prior to construction of each stage and 2% pro-rated with the costs of development during construction).
- Construction contingency of 5% of construction costs.

Statutory costs:

- DA and, Section 94A contributions and Construction Certificate fees assumed Councils estimates

Landholding costs estimated based on prevailing statutory rates and assumed to diminish with sales.

1. **Performance Criteria**

Hill PDA has adopted a project discount rate of 16% per annum nominal on the cash flow of the project which includes financing costs but excludes interest.

Additionally, a developers target development margin of 16% on total development costs (including selling costs) has been assumed both reflecting the size of the development and the associated risk.

Option Two and Three: Residential Development.

Project Timeframe

- Project commencement in May 2013.
- Construction spans 18 months.
- Residential pre-sales of approximately 50% prior to construction with settlement on completion of construction.

Purchase Price

$9.65m

End Sale Values

Due to the high-level nature of this assessment and in the absence of detailed plans, Hill PDA has adopted $/sqm in the order of:

- Residential Pre Sales - $8,000/sqm of net internal unit floor area.
- Residential Sales -$8,200/sqm of net internal unit floor area.
- Additional sales assumptions include:
- Sales escalations at 2.5% per annum.
- GST is included on residential sales but excluded on non-residential sales.
- Selling costs are assumed at 2.2% of residential sales.
- Legal costs 0.20% of gross sales.

Capital Works, Construction and Land Costs

Constructions costs have been sourced from Rawlinson's Construction Handbook 2013 and are as follows:

Demolition and site preparation at $80/sqm

Asbestos Allowance - $100,000

Residential construction:

- $2,250/sqm for main building construction;

- $650/sqm for balconies;
- Basement car parking at $45,000 per car space.
- Site and Landscaping at 1% of the total construction costs.

Additional cost assumptions include:

- Professional fees have been assumed at 10% of building construction costs (6% expensed prior to construction of each stage and 4% pro-rated with the costs of development during construction).
- Construction contingency of 5% of construction costs.

Statutory costs:

- DA and, Section 94A contributions and Construction Certificate fees assumed Councils estimates

Landholding costs estimated based on prevailing statutory rates and assumed to diminish with sales.

Performance Criteria

Hill PDA has adopted a project discount rate of 18% per annum nominal on the cash flow of the project which includes financing costs but excludes interest.

Additionally, a developers target development margin of 18% on total development costs (including selling costs) has been assumed both reflecting the size of the development and the associated risk.

Appendix 5 - **FEASIBILITY MODELLING SUMMARY SHEETS**

Consolidation of Stages

ESTATEMASTER Development Feasibility	1	2	3	4	5	6	7	8	TOTAL
Summary of Stages and Consolidated Project	Option 1 - Industrial Units	2 - Residential 1:1 Code Parking	Residential 1:1 Reduced Parking						
	Industrial	Residential FSR 1:1 1 $ Council code for parking	Residential FSR 1:1 1 $ Parking 1 .5 per unit						
Concord West Study	1 Units 6,292.8 GFA 7,866 SqM	102.3 Units 10,225.8 GFA 7,866 SqM	102.3 Units 10,225.8 GFA 7,866 SqM						
	Miscellaneous Under Reyes	Miscellaneous Under Reyes	Miscellaneous Under Reyes						
REVENUE									
Total Sales Revenue	11,786,274	73,369,533	73,369,533						158,525,339
Less Selling Costs	(259,296)	(2,494,564)	(2,494,564)						(5,248,426)
Less Purchasers Costs									-
NET SALE PROCEEDS	11,526,976	70,874,969	70,874,969						153,276,913
TOTAL REVENUE (before GST paid)	11,526,976	70,874,969	70,874,969						153,276,913
Less GST paid on all Revenue	-	(6,669,958)	(6,669,958)						(13,339,915)
TOTAL REVENUE (after GST paid)	11,526,976	64,205,011	64,205,011						139,936,998
COSTS									
Land Purchase Cost	4,700,000	10,615,000	10,615,000						25,930,000
Land Transaction Costs	292,990	731,790	731,790						1,756,570
Construction (inc. Construct. Contingency)	6,637,997	41,800,654	38,913,356						87,352,006
Professional Fees	301,727	3,800,059	3,537,578						7,639,364
Statutory Fees	60,558	592,931	557,569						1,211,059
Land Holding Costs	397,259	650,478	650,478						1,698,215
Finance Charges (inc. Line Fees)	100,000	360,000	360,000						820,000
Interest Expense	584,493	2,591,816	2,489,391						5,665,699
TOTAL COSTS (before GST reclaimed)	13,075,024	61,876,423	58,568,857						133,540,304
Less GST reclaimed	(603,454)	(4,765,059)	(4,502,578)						(9,871,091)
TOTAL COSTS (after GST reclaimed)	12,471,570	57,111,363	54,066,279						123,669,213
PERFORMANCE INDICATORS									
[1] Gross Development Profit	(544,594)	7,093,648	10,118,732						16,267,785
[2] Net Developers Profit after Profit Share	(944,594)	7,093,648	10,118,732						16,267,785
[3] Development Margin (Profit Risk Margin)	(7.57%)	12.42%	18.71%						13.15%
Target Development Margin	16.00%	16.00%	16.00%						
[4] Residual Land Value (Target Margin)	2,505,594	7,403,061	9,916,794						19,825,449
[5] Breakeven Date for Cumulative Cash Flow	N A	Feb-2016	Jan-2016						Feb-2016
Discount Rate (Target IRR)	16.00%	16.00%	16.00%						
[6] Net Present Value @ Start of Stage	(1,739,980)	(1,427,933)	772,629						
Date of Commencement	May-13	May-13	May-13						
Holding Discount Rate 10.00%									
[7] NPV at Start of Consolidated Cash Flow	(1,739,980)	(1,427,933)	772,629						(2,395,284)
[8] Benefit Cost Ratio	0.841	0.967	1.019						
[9] Project Internal Rate of Return (IRR)	(3.16%)	14.83%	19.75%						15.45%
[10] Residual Land Value (NPV) @ Start of Stage	3,026,114	8,280,413	10,391,059						21,697,586
Peak Debt Exposure	9,421,067	43,146,170	40,883,913						84,030,083
Date of Peak Debt Exposure	Sep-2014	Oct-2015	Oct-2015						Dec-2015
[11] Breakeven Date for Project Overdraft	Oct-2014	Dec-2015	Dec-2015						
Total Equity Contribution	2,971,769	13,629,887	12,899,222						29,500,878
Peak Equity Exposure	2,971,769	13,629,887	12,899,222						29,500,878
Date of Peak Equity Exposure	Aug-2013	Apr-2014	Mar-2014						Jul-2016
[12] IRR on Equity	(12.76%)	19.29%	27.37%						20.01%
Weighted Average Cost of Capital (WACC)	6.37%	11.38%	11.37%						

YIELD ANALYSIS	Qty	Area	Qty	Area	Qty	Area					Qty	Area
SALES		SqM		SqM		SqM						
Residential Apartments	0	0	102	8,679	102	8,679					205	
Commercial Office	1	0	0	0	0	0					1	
Storage & Warehousing	6,293	6,293	0	0	0	0					6,293	
TOTAL	6,294	6,293	102	8,679	102	8,679					6,498	
TENANCIES		SqM		SqM		SqM						SqM
Commercial Office		100		0		0						100
TOTAL		100		0		0						100

Footnotes (based on current Preferences):

1 Development Profit is total revenue less total cost including interest paid and received
2 Developer's Net Profit after distribution of profit share
3 Development Margin is profit divided by total development costs (net of selling and leasing costs)
4 Residual Land Value is the maximum purchase price for the land whilst achieving the target development margin
5 Breakeven date for Cumulative Cash Flow is the last date when total debt and equity is repaid (ie when profit is realised)
6 Net Present Value is the project's cash flow stream discounted to present value
It includes financing costs but excludes interest and corp tax
7 Net Present Value of each stage at commencement of the consolidated cash flow using the Holding Discount Rate
8 Benefit Cost Ratio is the ratio of discounted incomes to discounted costs and includes financing costs but excludes interest and corp tax
9 Internal Rate of Return is the discount rate where the NPV above equals Zero
10 Residual Land Value (based on NPV) is the purchase price for the land to achieve a zero NPV
11 Payback date for the equity/debt facility is the last date when total equity/debt is repaid
12 IRR on Funds Invested is the IRR of the equity cash flow including the return of equity and realisation of project profits

Attachment B

Concord West Precinct Master Plan

Urban Design Study

JBA GTAconsultants

Prepared for
Canada Bay Council

27 May 2014 ■ 14045

DRAFT

JBA GTAconsultants

Prepared for
Canada Bay Council

Version No:	Date:	Version Details:	Approved By:	File name:
2	27 May 2014	Draft Master Plan Report	BG	Concord West Master Plan

Table of Contents

Introduction

About this Study

This master plan has been prepared by JBA on behalf on Canada Bay Council (Council). It relates to land on the western side of the Northern Rail Line at Concord West. While the master plan only investigates the subject sites and considers these sites in the context of the study area, it is focused on land currently zoned IN1, General Industrial, which has been identified for redevelopment to residential uses by the City of Canada Bay Council. The Study Area is shown in Figure 1.

The aim of the study is to create new planning controls to guide the future development of sites zoned for industrial use within the study area. The objectives of the study are to:

- deliver high quality urban design and appropriate built form controls that are considerate of surrounding built form;
- mitigate impacts in relation to the use of private motor vehicles and promote the use of public transport, walking and cycling;
- identify opportunities for public domain improvements and connections;
- balance city-wide and regional goals with the existing community and its context;
- provide a coordinated planning approach to the redevelopment of the area;
- provide a sound methodology and a thorough, evidence based justification for planning, urban design and traffic recommendations provided; and
- undertake the study with Council, community and stakeholder engagement.

Study Area

The Study Area is bound by Liberty Grove to the north, Pomeroy Street to the south, the main Northern Railway Line to the east and Powell's Creek Reserve to the west. The area is characterised by a variety of built form and uses, including a mix of dwelling houses, town houses, apartment buildings and industrial uses. A new primary school is currently being built at 64-66 Victoria Avenue. The Precinct is effectively self-contained, with George Street forming the only vehicular access point to the surrounding road network at the southern end of the study area.

East of the Northern Railway Line is the Concord West centre, which contains a small range of retail and commercial uses. To the south of the precinct is the Bakehouse Quarter, which is the main centre for the local area. West of the precinct are Powell's Creek Reserve, Homebush Bay Drive and Bicentennial Park.

The Project Team

- **JBA**: Urban Design, Planning & Community Engagement
- **GTA Consultants**: Traffic & Transport

FIGURE 1 - Study Area Location Plan

Planning Context

Draft West Central Subregional Strategy

The former Metropolitan Plan for Sydney included the Study Area in the Inner West Subregion of Sydney. The Government prepared the draft Inner West Subregional Strategy to manage population growth in this subregion, and set a target of 30,000 additional dwellings to 2031. Of this, 10,000 are to be provided in Canada Bay LGA.

While these targets will be reviewed as part of the preparation of new Subregional Strategies informed by the draft Metropolitan Strategy, in the interim these figures provide a useful reference for planning. To accommodate this growth, the strategy sets the following key directions for housing:

- focus housing in and around existing strategic and local centres;
- improve housing affordability; and
- achieve a mix of zones and dwelling forms.

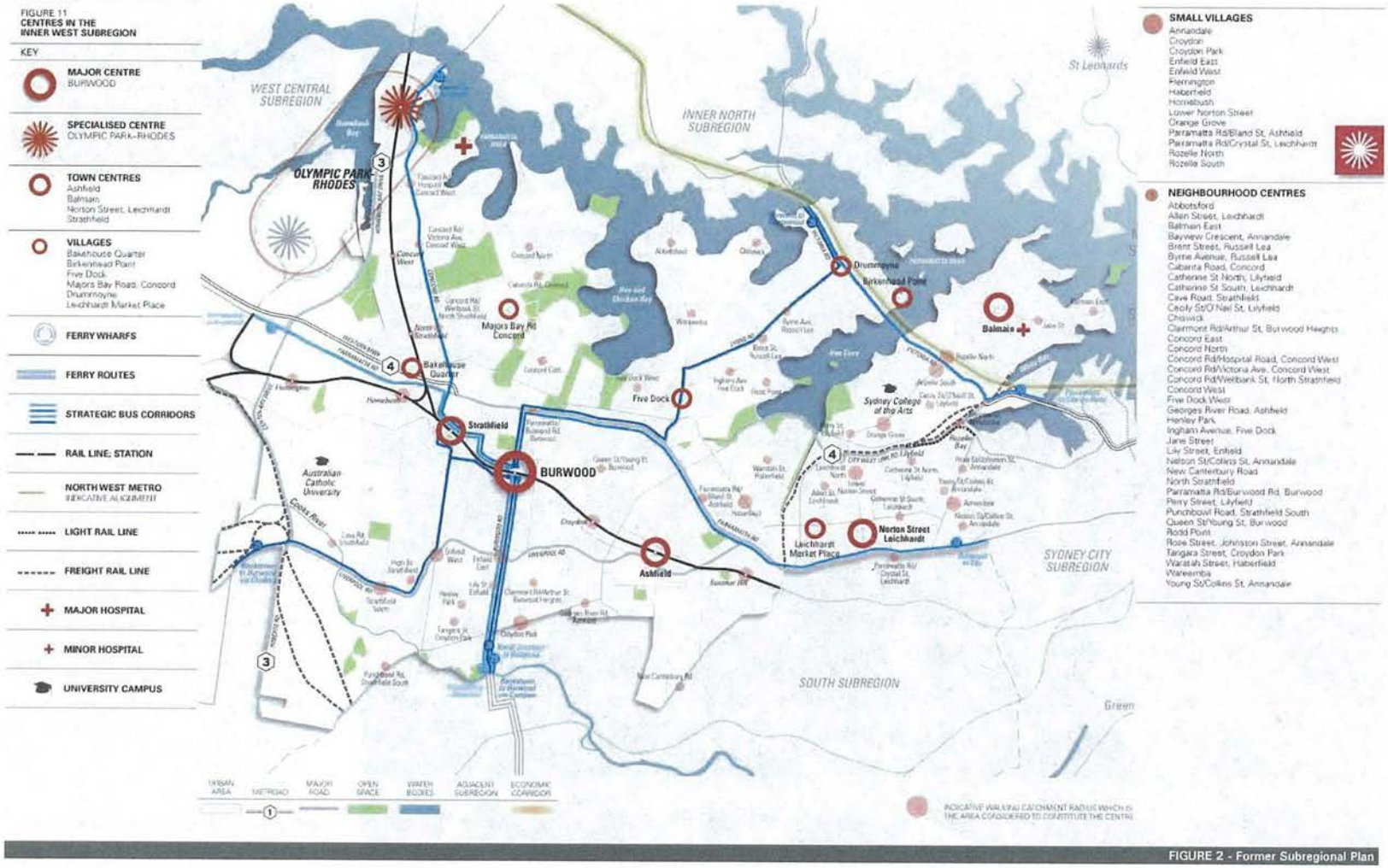


FIGURE 2 - Former Subregional Plan

Subject Sites

Industrial Sites

The focus of this study are the industrial sites identified in Figure 2. The sites are currently 2-3 storeys in height. Some sites are vacant or under utilised.

The sites are being considered by Council for rezoning from IN1 - General Industrial to R3 - Medium Density Residential with the exception of Site 4 (Westpac) to be rezoned to B7 - Business Park, recommendations based on the outcome of the Socio Economic Impact Study undertaken by Hill PDA in June 2013.

Site 5 176 - 184 George Street

Site 6 2 - 10 Rothwell Avenue

Site 7 25 George Street

FIGURE 3 - Industrial Sites Plan

Site 1 7 Concord Avenue

Site 2 202 - 210 George Street

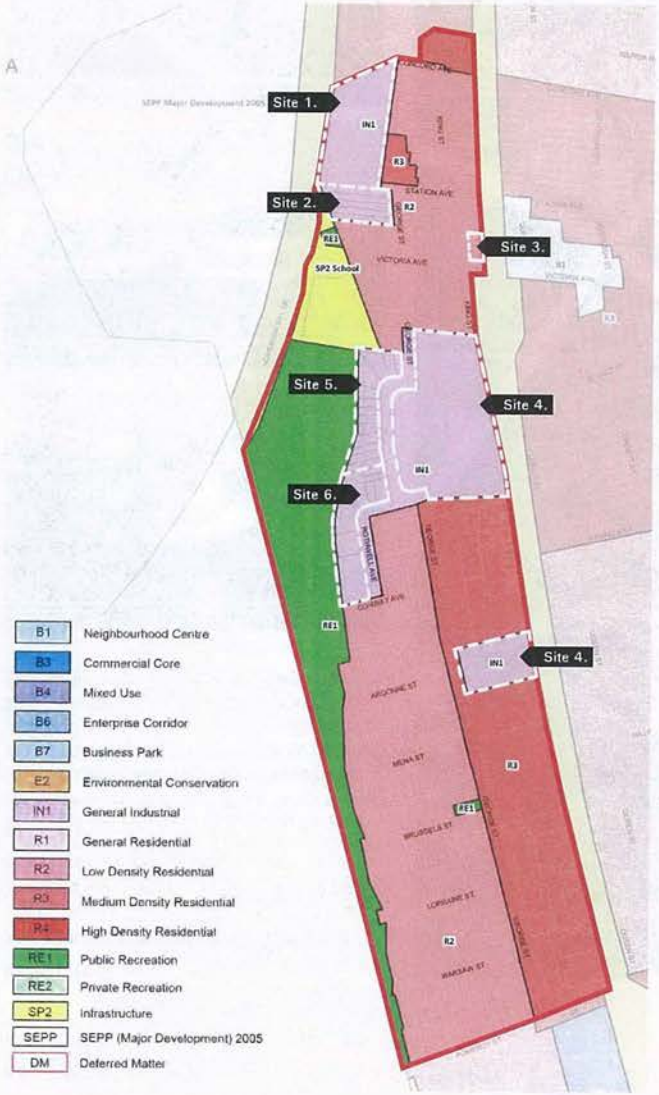
Site 3 3 King Street

Site 4 1 King Street (Westpac)

LEP Planning Controls - existing

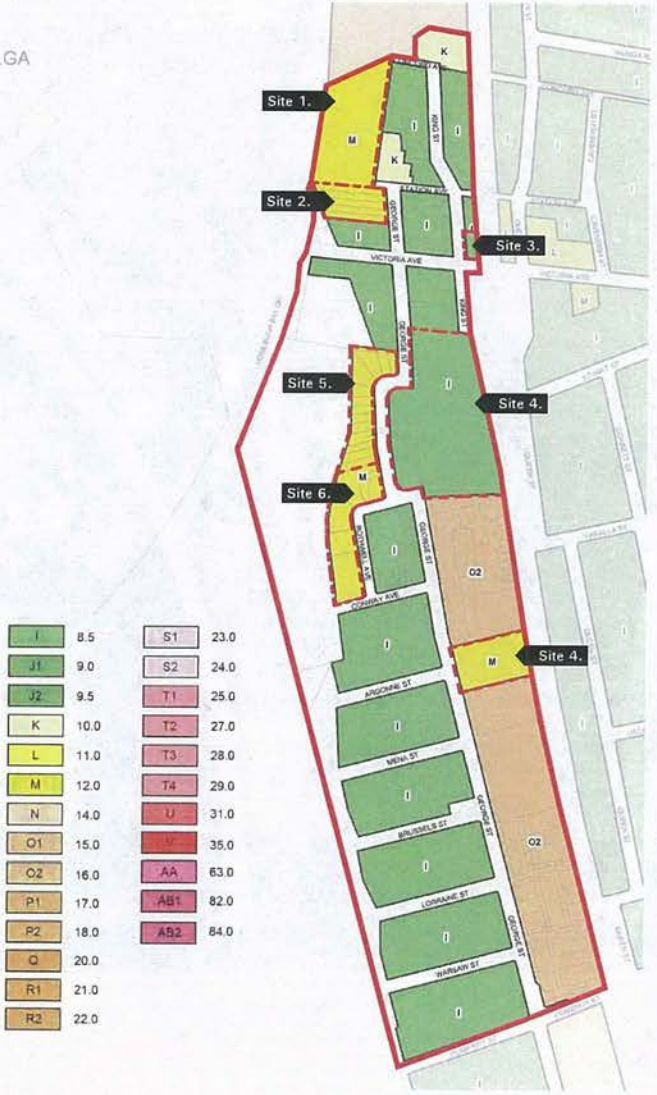
Zoning

The study sites are zoned IN1 (General Industrial) with the exception of Site 3 (5 King Street) which is zoned R2 (Low Density Residential).



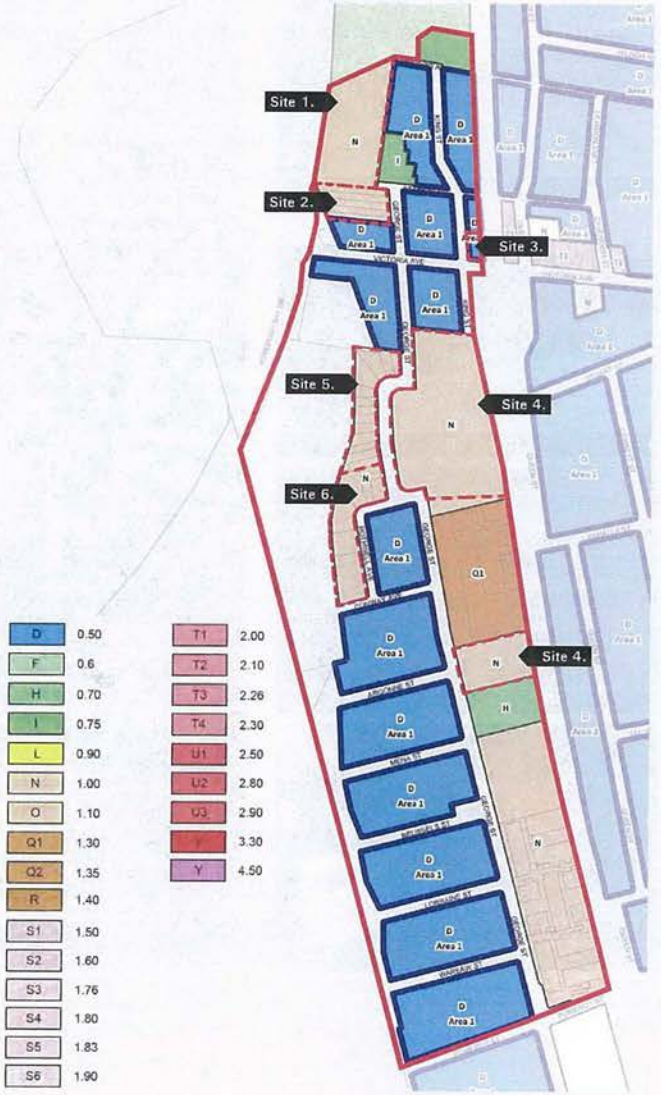
Height of Buildings

The study sites have a height control of 12m with the exception of Site 3 (5 King Street) which has a height control of 8.5m.



Floor Space Ratio (FSR)

The study sites have a 1:1 FSR with the exception of Site 3 (5 King Street) which has an FSR of 0.5:1.



Site Context

Key Observations:

- The land use split within the study area is approximately 25% medium density residential, 50% low density residential and 25% industrial
- The portion of the study area from Conway Avenue north seems more suitable for higher density due to smaller blocks of existing low scale residential, the mix of industrial sites and the proximity to the rail station
- The odd road geometry edging the Westpac Data Centre offer logical points for new street connections into the site if developed
- The physical area and geometry of the industrial sites pose challenges to the redevelopment of the sites

LEGEND

- Study Area Boundary
- Key Sites
- Open Space
- Waterway
- Primary Vehicular Connections
- Train Station
- Railway Line
- Bus Routes
- Cycleway
- Pedestrian Connections
- Primary Intersections to site
- High Density Residentia
- Medium Density Residential
- Low Density Residential
- Commercial
- Local Retail
- Electricity Substation
- Schools

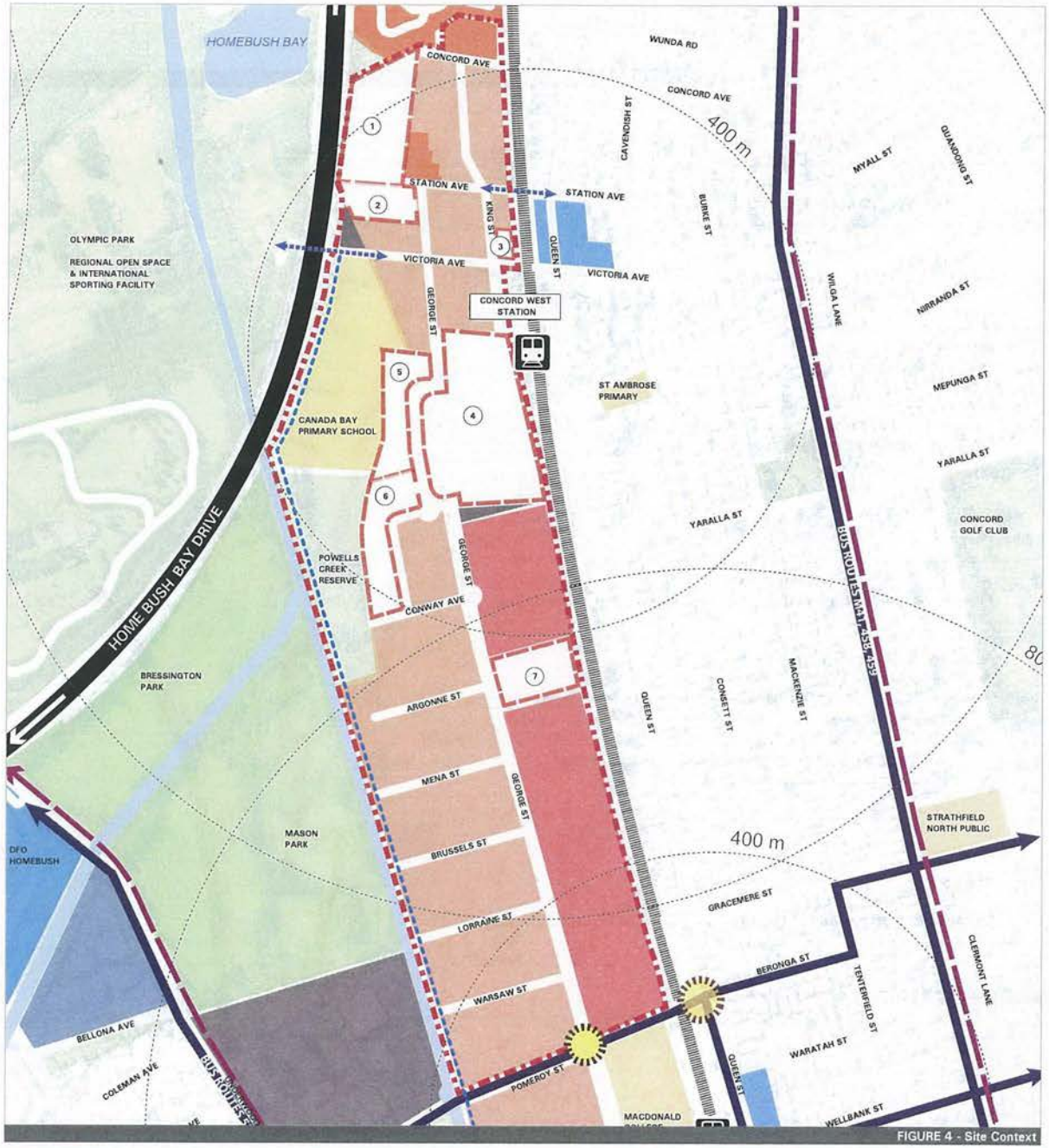
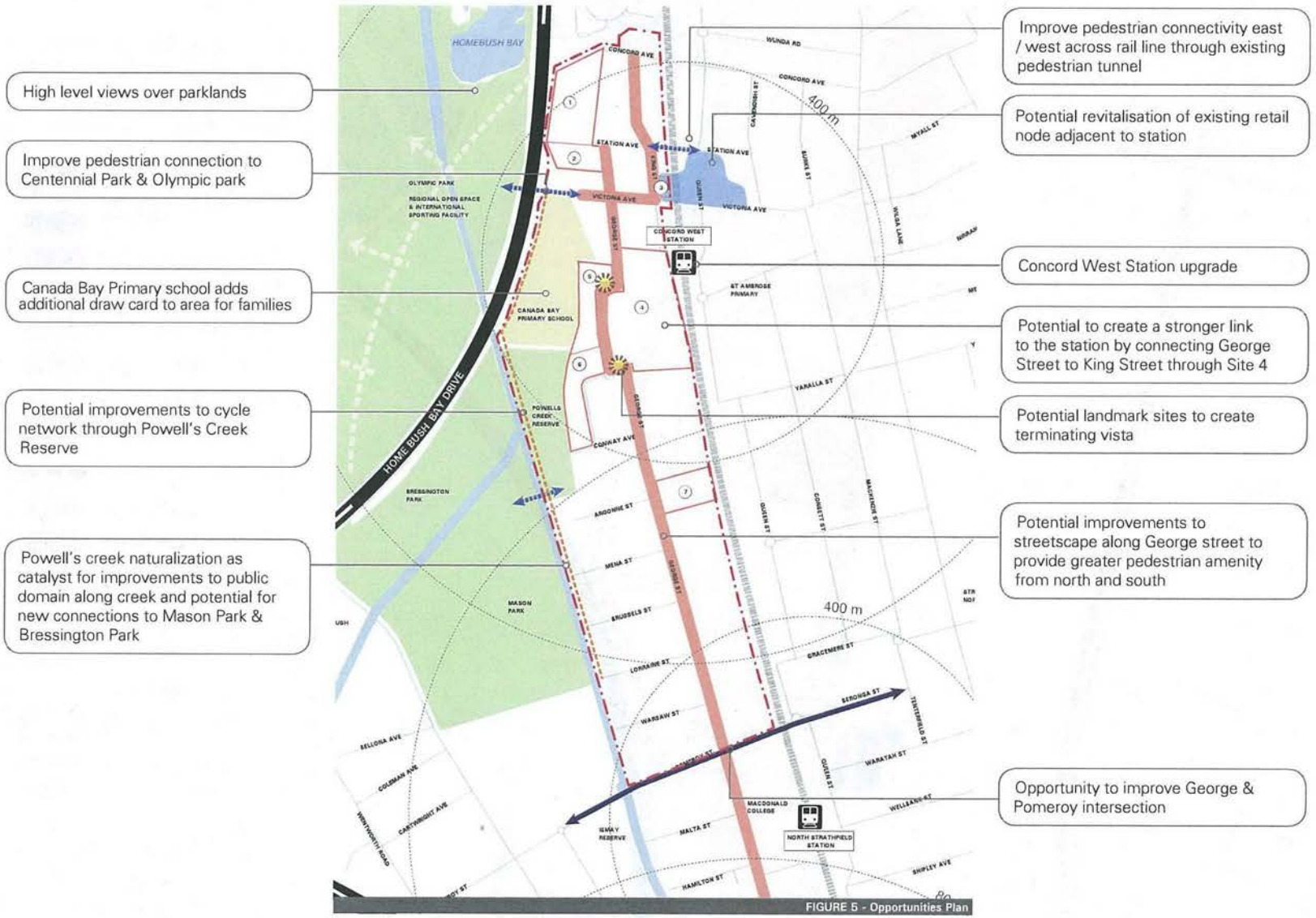


FIGURE 4 - Site Context

Opportunities

Key Opportunities:

- **Proximity to Mass Transportation –** They study area is well serviced by the Concord West and North Strathfield train stations.
- **Recreation & Open Space –** The study area is adjacent to nationally significant parks, open space and recreational opportunities. Powell's Creek Reserve within the study area offers both passive and active recreational opportunities including playing fields and tennis facilities.
- **Shopping & Entertainment –** The village of Concord West, shops on Concord Road, Rhodes shopping centre and the entertainment precinct of the Bakehouse Quarter offer a wide variety of shopping and entertainment opportunities.
- **Ownership –** The industrial sites are generally under single ownerships or partnerships. This will facilitate new development in a more efficient way.



Constraints

Key Constraints:

- **Disconnected Street Network** – The study area is disconnected from the surrounding street network funnelling all vehicular traffic through one intersection at George and Pomeroy Streets and reducing walkability.
- **No Change / Residential Interface** – The master plan is to assume the existing detached residential within the study area will not up zone in the future. The industrial sites are intermixed with existing 1-2 storey low scale residential dwellings creating difficult interface issues between low density and medium density building forms, especially in regards to solar access and privacy.
- **Poor connectivity & surveillance of existing open space** – The existing open space within the study area is not address by built form and have few pedestrian links which isolates Powell's Creek Reserve from the neighbourhood and creates a safety issue.
- **Self Containment** – The study area lacks significant viable retail and commercial uses increasing car dependence and reducing walkability.
- **Flooding / Overland Flow Risk** – Areas of the study area are considered to be at risk of flooding and require investigation through the preparation of an area wide flood study.

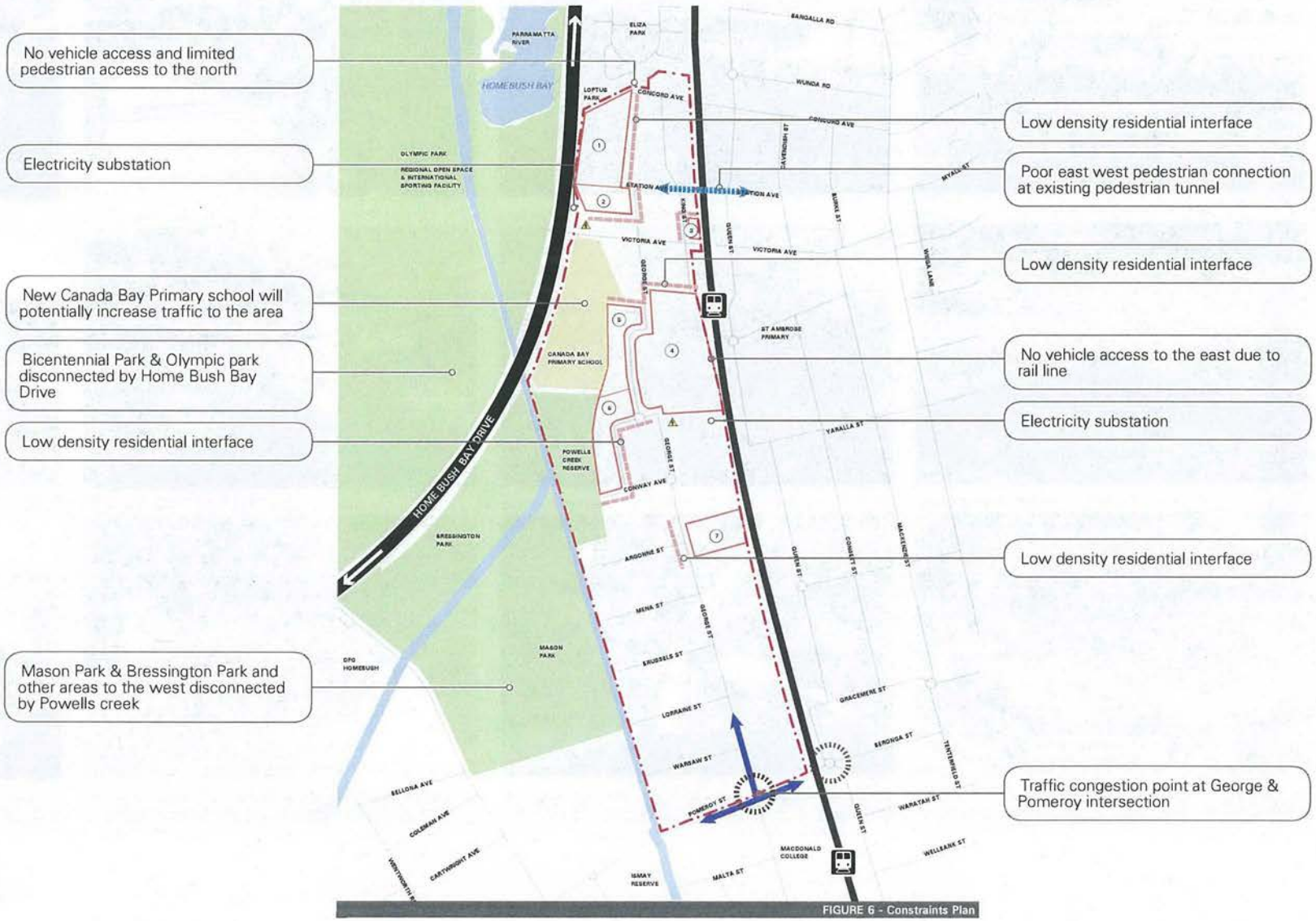


FIGURE 6 - Constraints Plan

Study Area Character

Land Use Types

Typical residential house

Strathview apartments on George street

Industrial uses mixed into the neighbourhood

Retail & Commercial

Ground floor convenience retail along George street

Concord West Village - Retail along Queen street

Bakehouse Quarter

Traffic & Transport

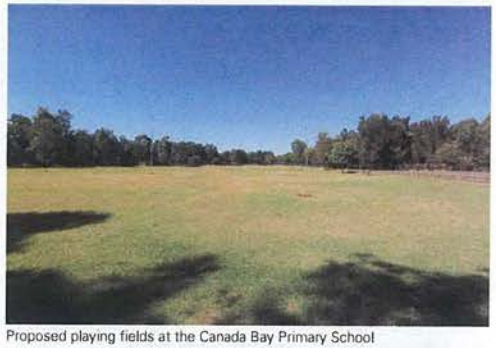
Concord West Station

Pomeroy & George Street intersection

George Street

Recreation & Public Open Space

Bicentennial & Olympic Park



Proposed playing fields at the Canada Bay Primary School

Powell's Creek Reserve tennis courts

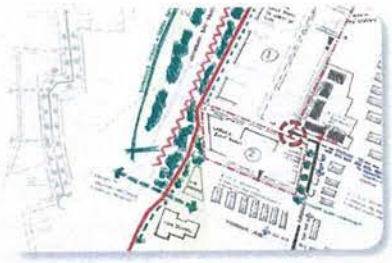
Urban Design Study Methodology

The development of the master plan was conducted in an open and transparent way involving the local community, landowners and Council. The design process included inputs from the community and stakeholders as well as a detailed traffic analysis of the study area to develop sound development principles to manage the potential impacts on the local community and to determine the development capacity of each site.

The design process...

Site Analysis

Site by site investigation and analysis to determine the potential impacts to neighbouring properties & how each site could contribute in reconnecting the neighbourhood.



Engagement (Round 1)

Informed the local community and stakeholders of the project objectives and documented their issues and concerns to feed into the built form testing.

Built Form Testing

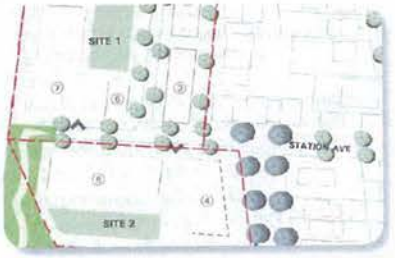
Development of the master plan principles, proposed new connections, tested 3D building envelopes and investigated solar access & privacy issues.

Engagement (Round 2)

Presented the draft master plan to the community and stakeholders. Feedback from both groups were used to refine the master plan and ensure concerns were addressed.

Master Plan

Revised the master plan based on the community and stakeholder feedback. The final plan, yield and controls were then developed to deliver the vision for the study area industrial sites.



Engagement Strategy

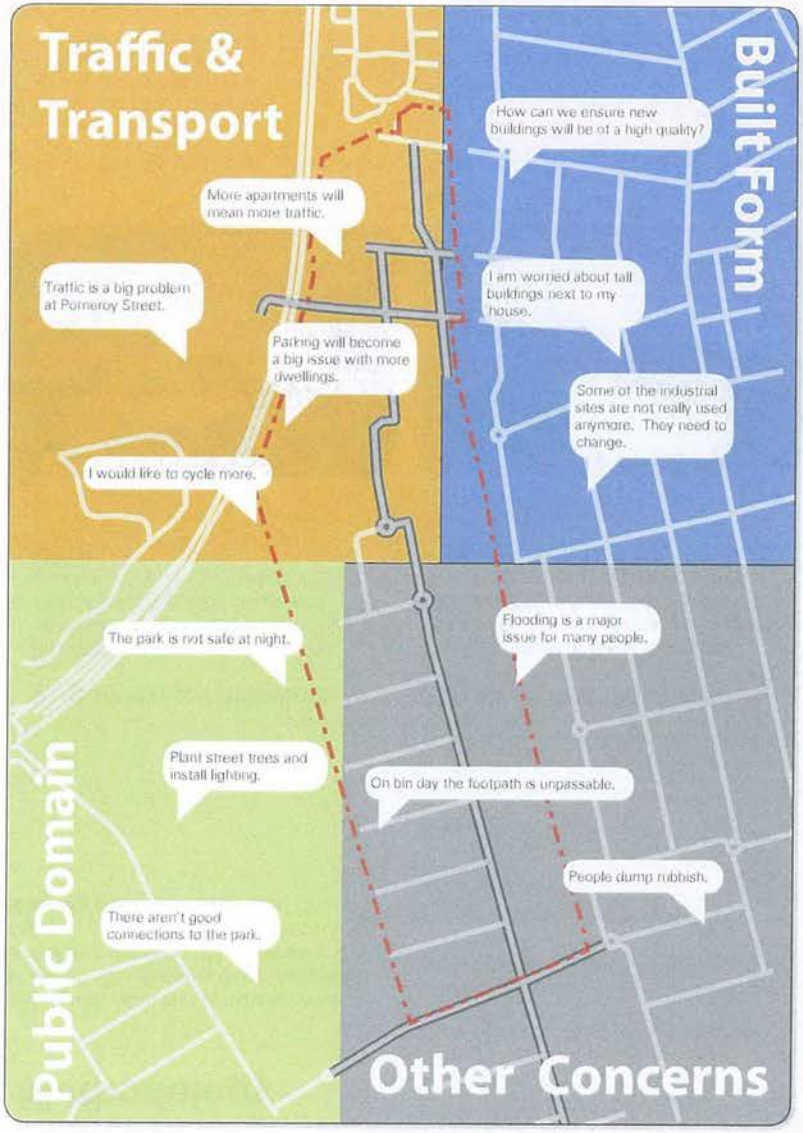
Throughout the master planning process local community and stakeholders' views, ideas and concerns about the future of the area have been woven into Concord West master plan and its outcomes. The engagement task set out to inform and consult with neighbours, stakeholders, local businesses, workers and other groups through workshops and online discussions as well as provide updates on the master plan as it evolved.

Methodology

The engagement strategy was designed with the following principles in mind:

- Ensure there is broad awareness of the project so that the community and stakeholders know that the Plan is being prepared and how to provide informed feedback.
- Motivate community and stakeholders engage.
- Use local and social media to achieve this and to keep the community informed of progress.
- Build broad community and stakeholder support for the project outcomes.
- Keep all information as concise and in plain English as possible without compromising integrity.
- Provide communication formats and channels suitable to the widest range of people.
- Make information available in a timely manner.
- Ensure feedback from stakeholders flows through to the master plan during development and future implementation.

Overall, we reached out to approximately 9860 community members and received 177 individual pieces of feedback



Identifying the Community

The following groups were targeted for involvement in the master planning process:

- Local residents within the study area including property owners and tenants, schools, local business owners and operators as well as the wider community.
- Landowners of the seven industrial sites in Concord West.
- City of Canada Bay Councillors.

Getting the Word Out

Work to reach out to the community started in November 2013 and continued until April 2014 as the plan developed. Messaging to spark and then continue conversations over the six month period included the following activities:

- Post card delivery to 1600 homes in the study area.
- Post card sharing with 400 passengers at Concord West railway station.
- Social media notices across Council's Facebook, Twitter and e-news channels.
- Two stakeholder workshops with landowners to gather feedback for the master plan.
- Two initial community workshops to gather feedback in three topic areas: built form, open space, traffic and transport.
- Follow up community workshop to present the final draft master plan for further feedback.
- Develop a microsite with information on the study area, team contact details, relevant web links, video of a community workshop and an online discussion space. The site received over 3500 views between Nov 2013 and April 2014.
- Articles within the Inner West Courier Mayoral column in Nov 2013, Jan 2014 and March 2014.

Concerns Addressed in the Master Plan

The master plan evolved with consideration of the concerns and ideas raised around four main categories being Built Form, Traffic and Transport, Public Domain and Other Concerns. As a result of the engagement work the master plan outlines the following possible solutions:

- Green connections through sites to open spaces and public transport.
- A mix of building heights stepped back from neighbouring homes.
- Controls to ensure future buildings respond to the local area context.
- Initiatives to promote walking, cycling and public transport use and discourage car use.
- Public domain initiatives and improvements including street trees, lighting and footpaths.
- Other concerns for Council to investigate further such as a resident parking scheme.

Traffic & Transport - Analysis

Background

From a transport perspective, the study area represents a relatively unique situation, with the neighbourhood area bordered by the railway line to the east, Homebush Bay Drive to the west and the Liberty Grove development to the north. As a result, all vehicle access to the study area is provided via George Street to the south. This "funnel" effect results in periods of congestion (including increased delays and queuing) at the George Street/ Pomeroy Street intersection.

The study area has good public transport accessibility with the Concord West Railway Station located within a short walking distance of the majority of the study area. The frequent rail services are complemented by bus services that operate along Concord Road to the east of the site. In addition the study area is well positioned in relation to the regional bicycle network.

Recently, the Department of Planning and Infrastructure approved the construction of a new primary school facility within the study area. The new school will generate additional traffic onto the surrounding road network and further increase congestion at the George Street/ Pomeroy Street intersection. In order to mitigate the impact of the additional traffic generated by the school, a new left turn slip lane is to be constructed at the George Street/ Pomeroy Street intersection. These works will increase the overall capacity at the intersection.

Assessment

A sensitivity assessment was undertaken by GTA Consultants using SIDRA INTERSECTION modelling software to determine the level of additional traffic from the study area that could be accommodated at the intersection without compromising its operation. The intersection capacity assessment was based on a number of traffic and road network assumptions agreed with the City of Canada Bay Council prior to the assessment and detailed within the GTA transport report.

Assumptions

In order to undertake this sensitivity assessment, residential traffic generation rates were sourced from relevant RMS guidance (i.e. 0.29 peak hour movements per dwelling). Application of this traffic generation rate indicated that the George Street/ Pomeroy Street intersection was capable of accommodating the additional traffic generated by some 785 dwellings within the rezoned lands. Should the Westpac Data Centre also be developed (noting that it does not form part of the study area for this site), the peak hour traffic associated with some 1,430 additional dwellings (i.e. 645 further dwellings) could be accommodated within the rezoned lands. Table E1 provides an overview of the anticipated future traffic volumes on George Street following the rezoning of the industrial lands.

Results

The table indicates that ultimate traffic volumes on George Street are anticipated to increase by approximately 630 and 280 vehicles during the AM and PM peak periods. During the AM peak hour the additional traffic generated by the rezoned lands represents 43% of the additional George Street traffic volumes, with the primary school accounting for 57% of the additional traffic. The primary school is not anticipated to generate any significant additional traffic during the road network PM peak hour.

The modelling indicates that, following full development, the intersection is anticipated to operate at a comparable level of service to its current operation, with typically manageable queues and delays on all approaches.

An overall development yield higher that indicated above would likely require additional mitigating works at the George Street/ Pomeroy Street intersection. Any such works would require land acquisition and significant associated property impacts. The provision of additional vehicle access points into and out of the study area was considered as part of the assessment, however, it was concluded that the cost associated with any potential future access points would be prohibitive.

Broader road network considerations are discussed further within the GTA report.

TABLE E1 - Future George Street Traffic Volumes (North of Pomeroy)

Traffic Source	Vehicles Per Hour	
	AM Peak Hour	PM Peak Hour
Existing Traffic Volumes	730	780
Primary School	+356	[1]
Rezoned Lands (ex Westpac Site)	+228	+228
Total	**1314**	**1008**

[1] The afternoon peak will occur outside the road network peak hour

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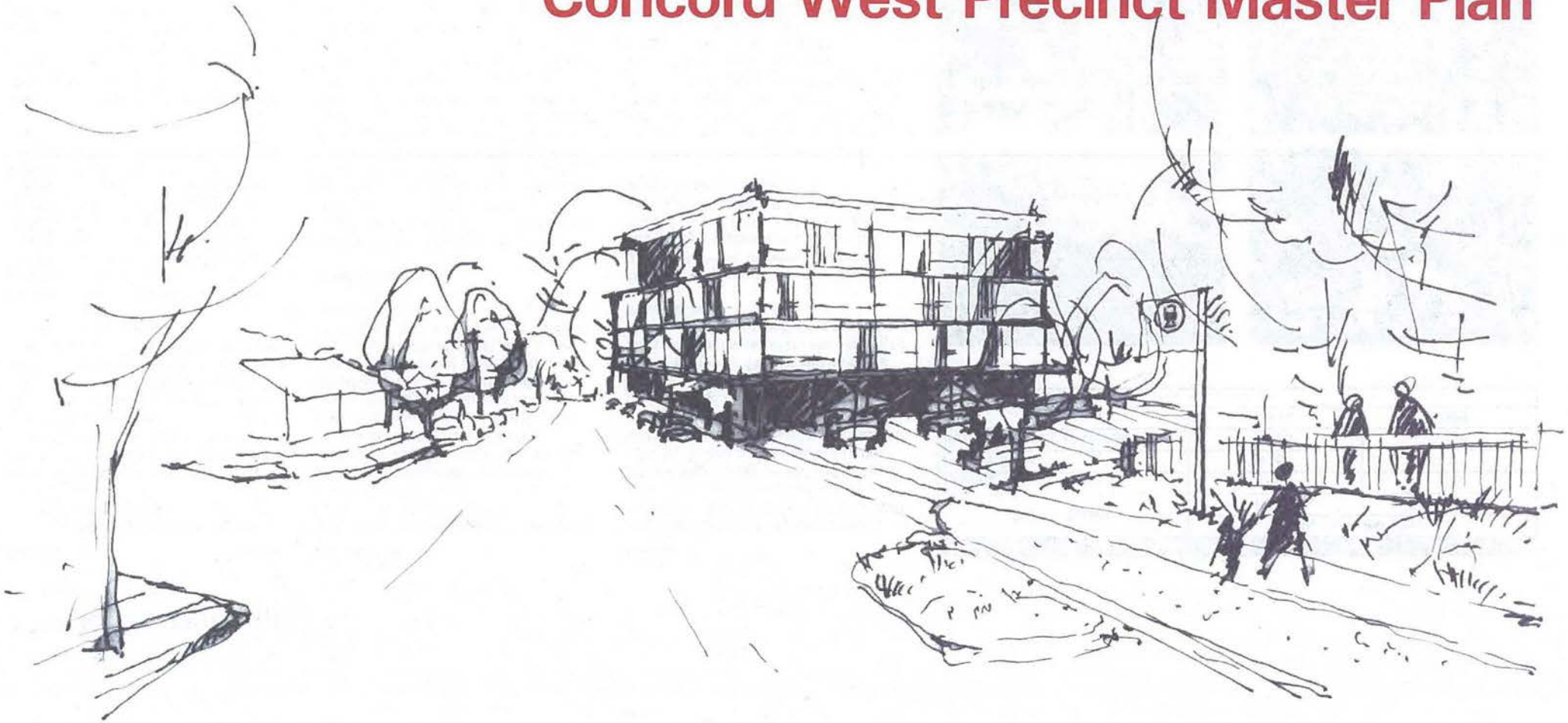
Concord West Precinct Master Plan



Concord West Master Plan

A Balanced Approach

The primary purpose of this master plan is to develop a coordinated planning approach to the seven industrial sites. The objective is to integrate new medium density apartment forms within a neighbourhood that is predominantly 1-2 storey residential in scale. To achieve a well-mannered integration of new development compromises must be accepted to develop a balanced approach that both addresses the needs of the local community as well as the objectives of the individual site owners.

In order to achieve a balanced development approach, the master plan acknowledges the competing forces that provide a basis for both greater density as well as reasoning to keep new development lower scale. These forces fall into three broad categories and provide the conceptual basis to which the master plan principles address in greater detail.

- **Regional Opportunities / Local Constraints** – The close proximity to two rail stations and high quality recreational open space provide a strong justification to maximise the development potential of the industrial sites and for increased heights. The study area, however, is also highly constrained by a disconnected street network that funnels all vehicular traffic through one entry / exit point at the intersection of George and Pomeroy Streets.

  The vehicular capacity of this intersection is a major constraint to development within the study area. Also the lack of nearby, walkable retail and commercial opportunities to service the day to day needs of the local community limits the ability to reduce car dependency regardless of proximity to mass transport.

- **New Development / Existing Community** – Redevelopment of the industrial sites must be economically feasible or no change will occur. As the existing industrial uses are becoming less viable in this location (as well as in other inner west suburbs) and moving to more suitable locations medium density residential is a clear alternative. The industrial sites are scattered throughout the study area which is predominantly 1-2 storey detached residential in character. Thus, the interface between new and established development must be carefully managed and the principles consistently applied.

- **Development Site / Development Site** – The overall constraints of the study area, especially traffic generation, limit the development potential of the industrial sites. The distribution of the development capacity of the study area must be applied consistently through built form principles that address the concerns of the existing community while not arbitrary giving advantage to one site over another. This ensures that no one site can over develop at the expense of the other sites and preserves this potential regardless of the timing of redevelopment.

  Any variation of height and FSR controls that is evident between individual sites is reflective of the consistent application of the master plan principles. It is not reflective of what could be achieved based on a hypothetical maximum calculated through the application of generalised best practice planning and urban design controls on a site by site basis.

Master Plan Layout

The master plan is divided into three precincts to illustrate each area in greater detail. These detailed precincts follow full site area plans and controls so as to view the concepts in both a holistic way as well as in detail. The sites are divided into the following precincts:

North Precinct - page 18

Site 1	7 Concord Avenue
Site 2	202-210 George Street
Site 3	3 King Street

Central Precinct - page 23

Site 4	1 King Street (Westpac)
Site 5	176 - 184 George Street

South Precinct - page 26

Site 6	2 -10 Rothwell Avenue
Site 7	25 George Street

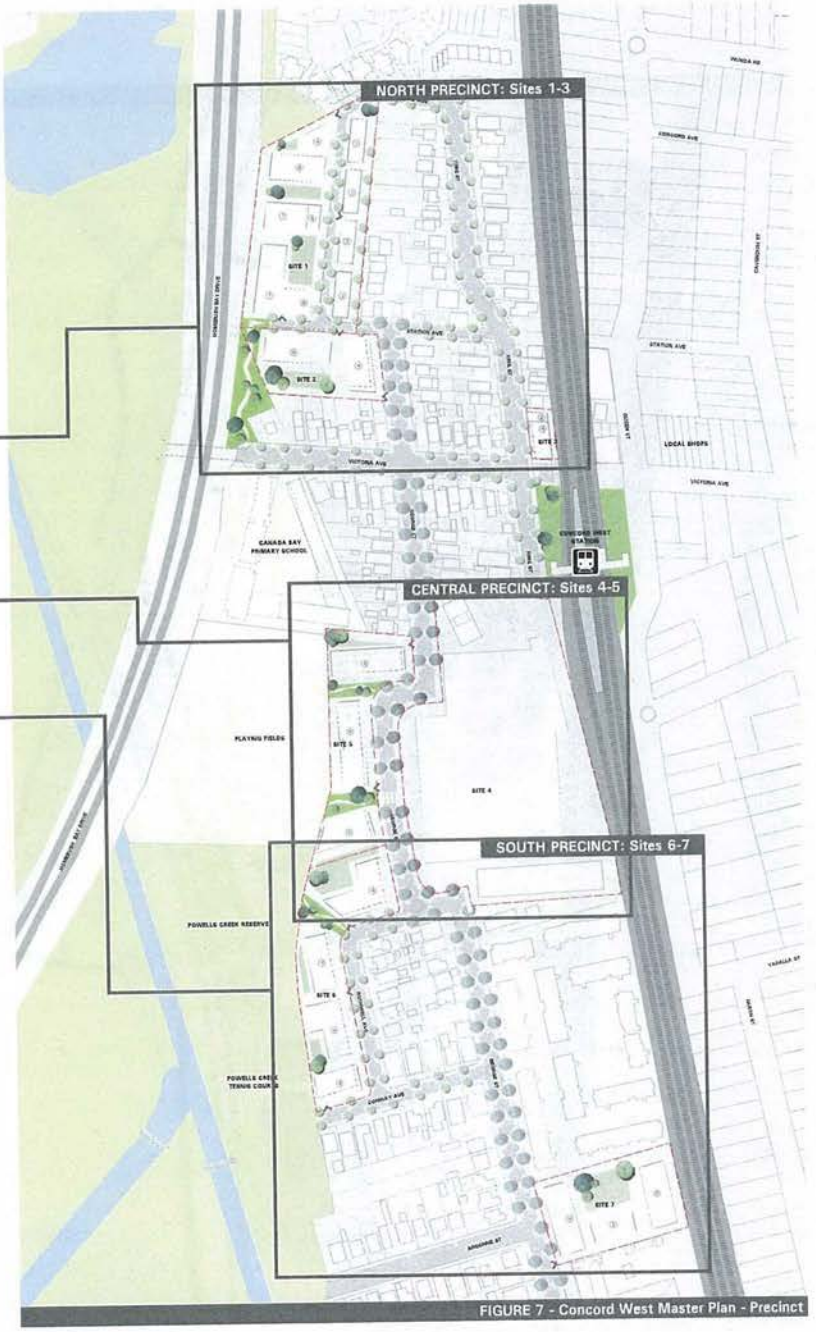


FIGURE 7 - Concord West Master Plan - Precinct

Development Principles

To achieve a quality built form outcome that addresses the concerns of the local community, meets the needs of the landowners, creates a cohesive & unified place and establishes a consistent & balanced development approach, the following principles have been applied across the study area.

Primary Built Form Principles

- **Height** – the tallest buildings are to be located in areas where there will be no significant impacts (especially in regards to solar access and privacy) to existing low scale residential dwellings with a gradual transition in building height to step down to the boundary to existing properties.
- **Interface** – where new buildings are adjacent to or across from existing low scale residential dwellings a maximum height of 4 storeys will be applied. In certain specific circumstances the interface height may be less than 4 storeys to address a localised constraint or condition. Access points to underground car parking can also be utilised to provide further building separation between existing and new.
- **Front Setbacks** – In order to achieve a unified street character throughout the study area a 6m front setback to public streets has been applied to reflect existing residential setbacks. It is intended that the front setback will be used to promote individual ground level entries to apartments, gardens and additional landscaping and tree planting to soften the scale of the buildings. The exception is Site 3, 3 King Street, which ground floor retail is desirable.
- **Connections** – where indicated new through site pedestrian links are proposed to provide greater pedestrian connectivity to open space and the new Canada Bay Public School. New share ways and streets are proposed to provide vehicular & pedestrian links through sites to better connect the neighbourhood as a whole.

General Principles (not illustrated)

- **Passive Surveillance** – buildings must address all streets, share ways, footpaths, pedestrian links, parks and any other publicly accessible areas. This can be achieved through directly accessible building entries, the more numerous the better, balconies, ground level gardens, widows and a close physical relationship to the public areas.
- **Building Articulation** – where indicated upper level setbacks are applied to reduce the visual bulk of a building. Buildings should also not be excessively long without a modulated facade that visually breaks down the scale of the building.
- **State & Local Environmental Planning Policies** – in addition to the master plan new buildings will need to consider SEPP65 and the Canada Bay DCP for Residential Flat Buildings.

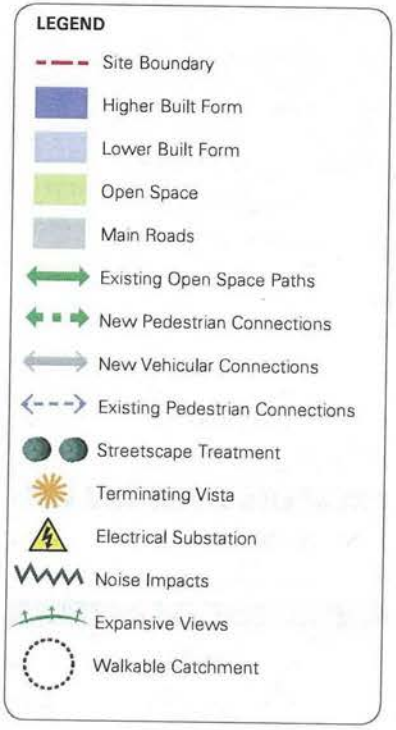


FIGURE 8 - Development Principles Plan

Built Form Controls

Height

The height controls establish the transition in scale from low to high. There are three height categories:

- **Interface Heights** - are located in areas adjacent to or across from existing 1-2 storey detached residential.
- **Transition Heights** - providing a logical progression in scale and building bulk.
- **Internal Heights** - are located in areas within larger sites in places and in orientations that will ensure minimal impacts to existing residential.

LEGEND

- Interface Heights (2 - 4 storeys)
- Transition Heights (5 - 6 storeys)
- Internal Heights (7 - 8 storeys)

Setbacks

The setback controls help to deliver the streetscape character, establish the through site pedestrian links and illustrate building separation between sites.

LEGEND

- 3m Setback
- 4m Rail Line Setback
- 4m or consistent with 27 George St.
- 6m Setback
- 8m Setback
- 9m Setback
- 15m Setback
- 2m Upper Floor Setback
- 10m wide Pedestrian Link Zone

FIGURE 9 - Building Heights Principles Plan

FIGURE 10 - Setback Plan

Public Domain

It is the public domain that holds and connects a place together. Parks, streets, footpaths, bike paths and pedestrian connections all play a role in stitching together the urban fabric that give a place an identity, provide places for recreation, interaction and promote a sense of community.

Strengthening the existing connections to parks and open space will create a stronger neighbourhood identity and will create a more cohesive feel for the study area as a whole.

The proposed public domain improvements fall into two categories:

1. **Site by Site Improvements** – are public domain improvements that can be implemented on a site by site basis as part of the redevelopment of each industrial site.
2. **Study Area Improvements** – are broader public domain improvements that will need to be implemented by Council in consultation with the local community and delivered through a range of funding methods including developer contributions.

The public domain plan illustrates the broad study area vision, concepts and specific site by site interventions. The plan identifies the primary origin / destination points to and from the study area. Also identified are special places within the study area: Station Square / Station Entry, Canada Bay Primary School and Powell's Creek Reserve and tennis courts. The improvements listed below in conjunction with site by site improvements will link and strengthen the connections to and between these places. The following is a list of study area recommendations (only) to be investigated in greater detail by Council:

- **Station Square** – located at the eastern end of Victoria street. Station Square is envisioned as a small urban plaza that provides a meeting place and focal point for the neighbourhood near the station entry. The square will be activated through the redevelopment of 3 King Street (Site 3) into a mixed use building with a ground floor cafe or restaurant that can utilise the square for outdoor seating and dining. The square will offer a quite and shady environment where one can wait for the train, or to pick up / drop off friends and family on their way to / from work, school or the city.
- **George & King Street Spine** – these streets represent the primary north / south spine that connects the residents of Liberty Grove to the station and the study area to Pomeroy Street in the south. To achieve a cohesive feel and to promote walking and cycling these streets could be reconfigured to better accommodate pedestrians and be improved visually to enhance the character of the neighbourhood. This can be accomplished by:
  - Strengthen the street tree planting from Pomeroy Street to Liberty Grove to visually unify the neighbourhood.
  - Implement kerb build outs at intersections and other key pedestrian crossings to narrow the width of the street, slow traffic, define on-street parking and provide opportunities for rain gardens and low level landscaping.
  - Encourage cycling through the implementation of defined bike lanes
  - Ensure all footpaths are level and well constructed
- **Concord & Station Avenue Shareways** – these 'avenues' currently function primarily as laneways and are already low speed traffic environments. Through the use of landscape and paving material these streets can help stitch the northern portion of the study area together through the integration of Site 1.
- **King Street Extension** – if in the future the Westpac data centre should redevelop King Street should be extended south to join George Street at the Rothwell Avenue intersection. This connection will greatly improve the walkable catchment and permeability of the study area and provided greater access to the station as the existing site acts as a barrier to pedestrian and vehicular movements.

LEGEND

- Streetscape Upgrade
- Public Square
- Shareway
- New Footpath
- New Pedestrian connection
- Existing Landscape connection
- New Local connection
- Possible Cycle Path
- Entry Point
- Places (New & Existing)
- George / King St Spine

FIGURE 11 - Public Domain Plan

Traffic & Transport - Recommendations

Recommendations

Traffic generation is closely linked to available car parking. As such, in order to minimise traffic generation into and out of the study area, it is recommended that on-site resident car parking be minimised. In this regard it is recommended that maximum resident car parking rates be imposed on future residential development on the rezoned lands, with a focus on encouraging the use of public transport. This approach to car parking policy would be consistent with the current Rhodes West Development Control Plan which specifies an average maximum of 1 car parking space per dwelling.

In conjunction with the reduced car parking provisions, it is recommended that car parking controls (time and/or permit parking restrictions) are introduced to the existing on-street car parking supply. Any resident parking scheme introduced would be for existing eligible residents within the study area. The provision of a car share service within the study area would cater for the needs of smaller dwelling types that may not be provided with a dedicated on-site car parking space.

The introduction of time restricted car parking within the study area would also reduce the level of non-residential trips to the study area, generated by commuter car parking associated with the Concord West Railway Station.

In conjunction with the lower on-site car parking provisions, it is recommended that appropriate minimum residential bicycle parking requirements (greater than the LGA-wide requirement) are included in the relevant planning controls.

Other Improvements

As part of the urban renewal of the industrial zoned lands, there is an opportunity to improve the amenity of the existing pedestrian and cycling environments, particularly along George Street where dedicated on-road or separated bicycle lanes could be provided. Additional bicycle links could also be provided from the site to the existing regional bicycle network that services the broader precinct. Additional pedestrian through-site links increases the permeability of the area and has the potential to reduce walking distances.

The transport assessment prepared by GTA provides further details regarding the above arrangements and has been provided as an attachment to this report.

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North Precinct (Sites 1-3) - Detailed Master Plan

Key Features:

1. Integration of Site 1 into the existing neighbourhood fabric through a new north / south shareway connecting Concord Avenue to Station Avenue. This shareway to be publicly accessible inviting pedestrians and cyclists to move through the site to connect to the broader pedestrian network.
2. Station Avenue Extension to provide access to new pedestrian connection and vehicular access to adjacent buildings.
3. Establishment of a new north / south pedestrian and bicycle connection that will link the extended Station Avenue to Victoria Avenue.
4. Station Square - a new urban square terminating the eastern end of Victoria Avenue. The square will provide a focal point for the neighbourhood and the station by providing a space to meet.

LEGEND

- Indicative Building Footprint
- Upper Level Set Back
- Public Open Space
- Communal Open Space
- (5) Number of Storeys
- Vehicle Access

FIGURE 12 - North Precinct Master Plan

North Precinct (Sites 1-3) - Development Principles

Lower Scale Buildings - to be located to the east of the site to interface with existing residential and have minimal impact on neighbouring lots.

Larger Scale Buildings - to be located to the west of the site and incorporate noise mitigation measures

Internal Circulation - connect Station Ave to Concord Avenue with a publicly accessible street or share way. Also provide access to Site 2.

Flood Risk - will need to be assessed across the study area to consider potential impacts on new and existing development

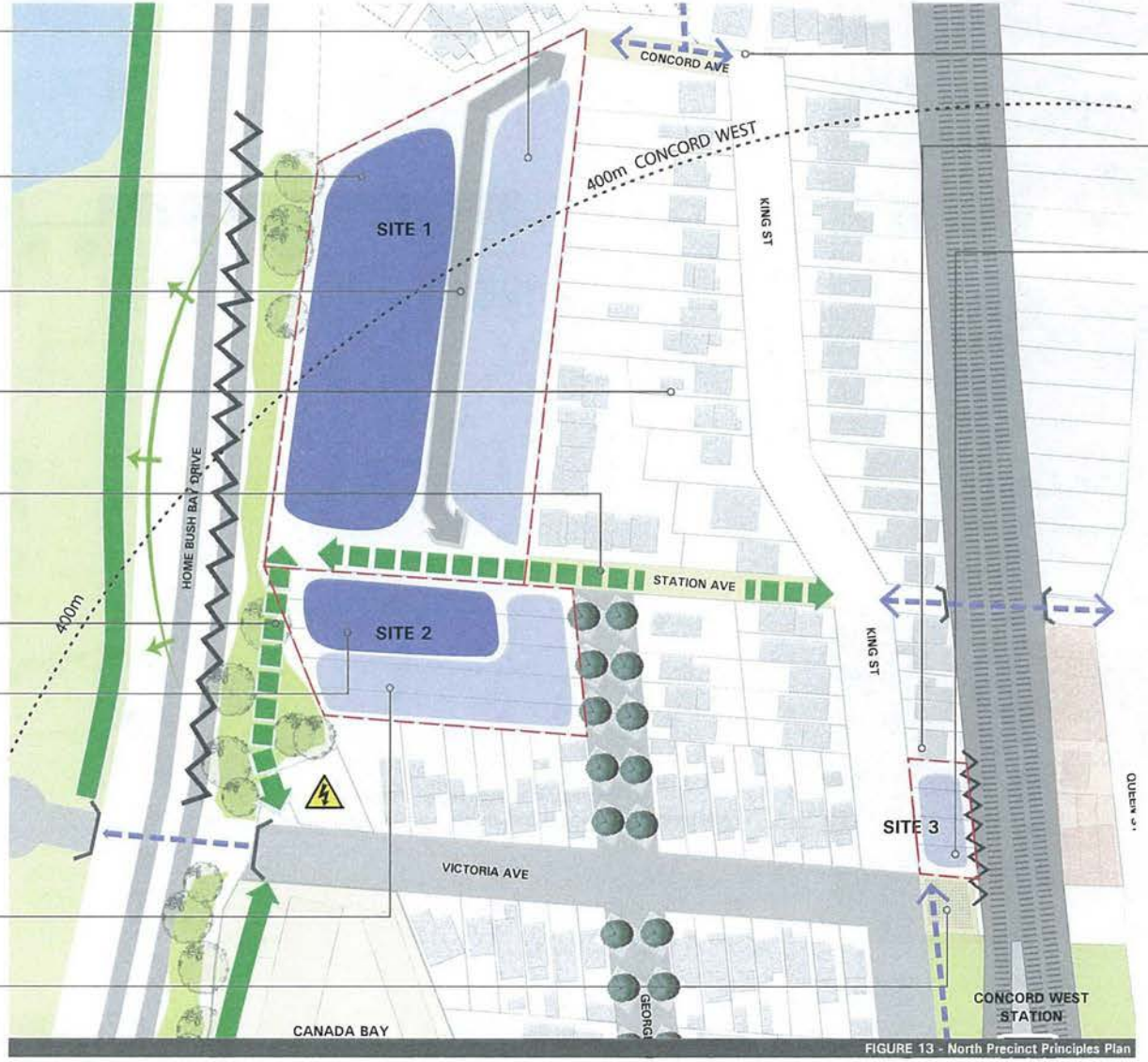
Station Avenue - Upgrade street as seamless continuation of the internal circulation of Site 1 through to King Street.

Pedestrian Connection - landscaped path connecting the extended Station Avenue to Victoria Avenue.

Larger Scale Buildings - to be orientated east / west utilising the depth of the site and located to the northern boundary to minimise overshadowing to the south.

Lower Scale Buildings - to address George Street and interface with existing residential to the south. Ensure adequate solar access is maintained to residential properties to the south.

Station Square - revitalise eastern end of Victoria Avenue as a new public space.



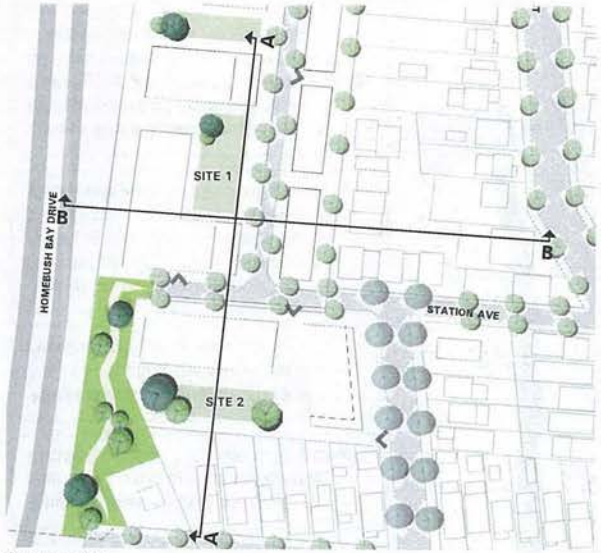
Concord Avenue - Upgrade street as seamless continuation of the internal circulation of Site 1 through to King Street.

Residential Interface - building to step down to interface with existing residential to the north.

Mixed Use - new or refurbished development with ground level mixed use to activate Station Square.

FIGURE 13 - North Precinct Principles Plan

Site 1 - 3D Views & Sections

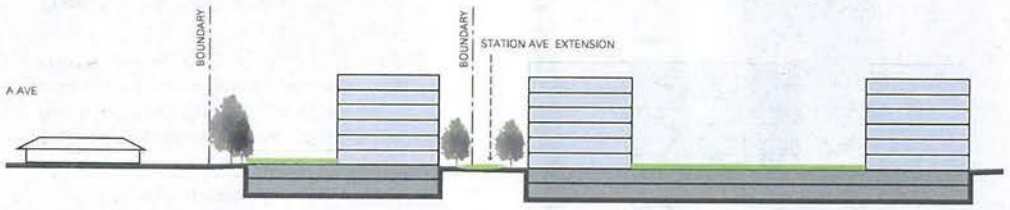


Section Key

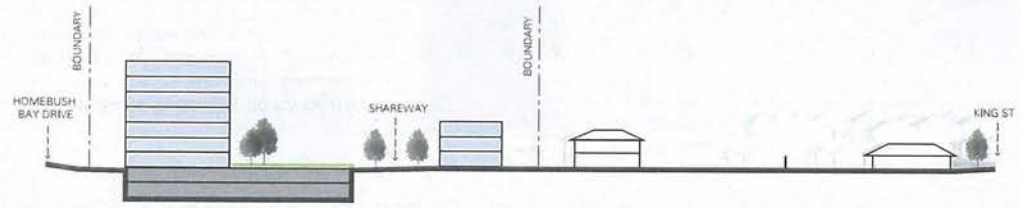
Sections

AA - Allow unobstructed views and access down Station Avenue from the pedestrian tunnel under the rail line to Homebush Bay Drive.

BB - Illustrates transition in building height from Homebush Bay Drive to the rear gardens of King Street properties.



Section AA Scale 1:1000



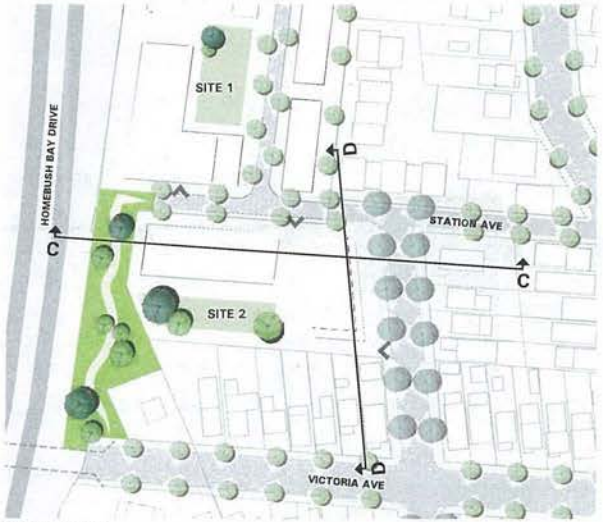
Section BB Scale 1:1000

Winter 9 am

Winter 12 noon

Winter 3 pm

Site 2 - 3D Views & Sections

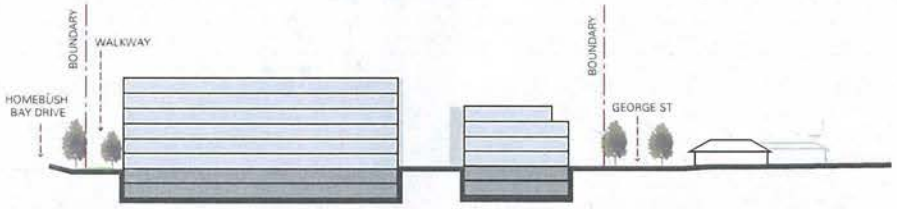


Section Key

Sections

CC - Illustrates height transition and upper level setback to George Street.

DD - Depicts the principle of 4 storey build form to adjacent low scale residential properties.



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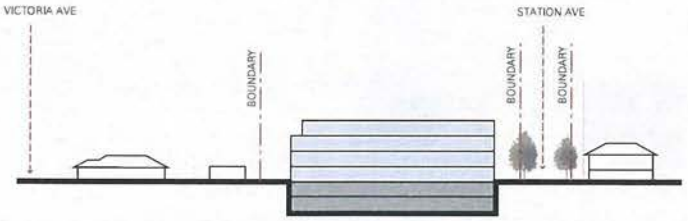
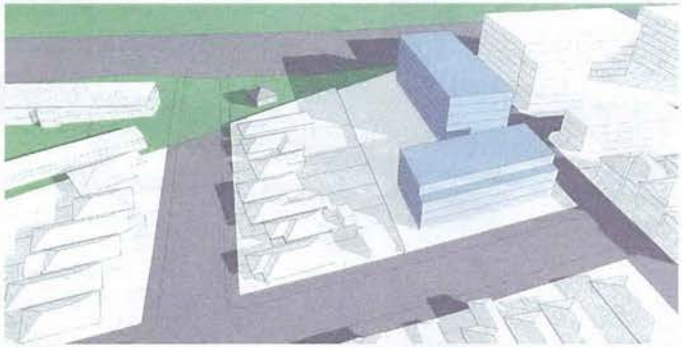
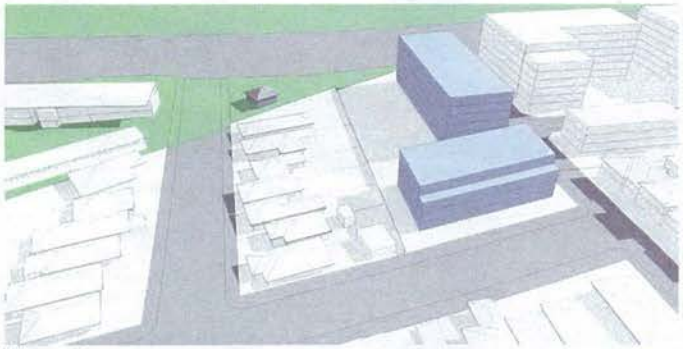


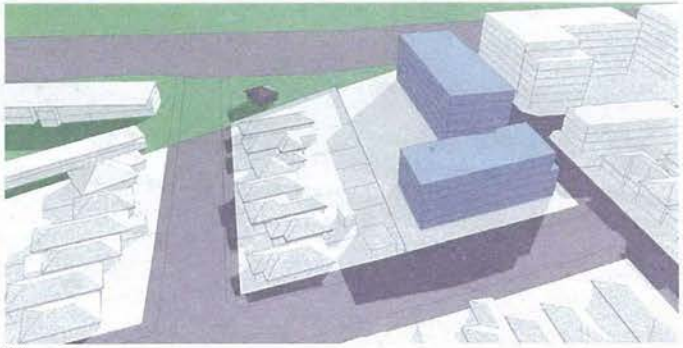
Section DD Scale 1:1000



Winter 9 am

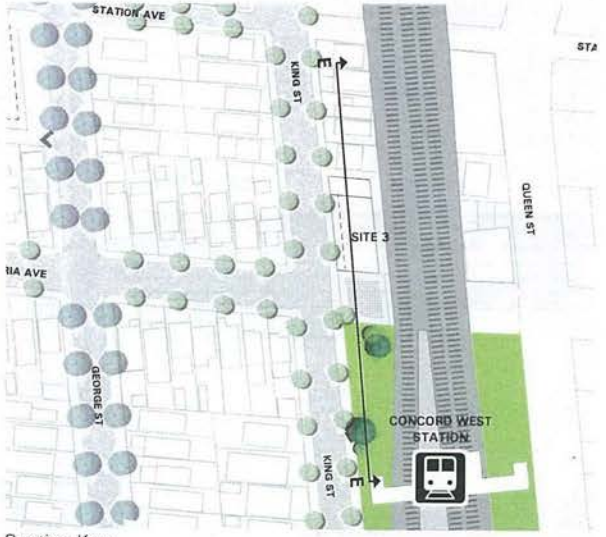


Winter 12 noon



Winter 3 pm

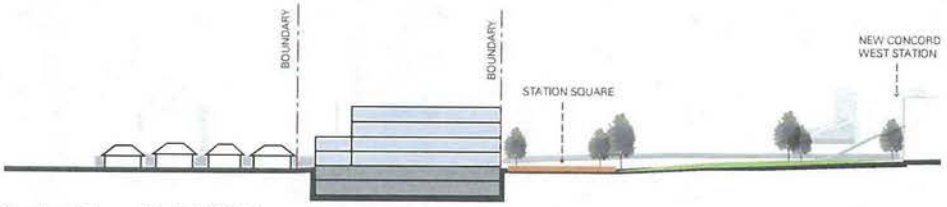
Site 3 - 3D Views & Sections



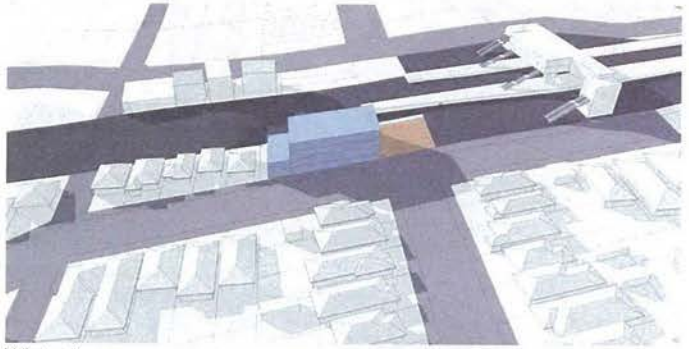
Section Key

Section

EE - Illustrates the building mass of Site 3 stepping down to properties to the north. Given the reduced setback at the northern boundary a two storey interface is required



Section EE Scale 1:1000



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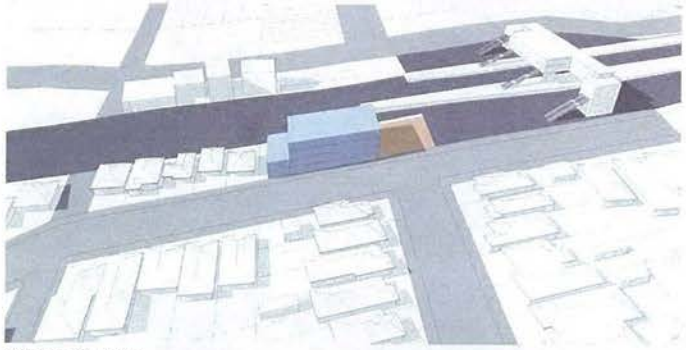
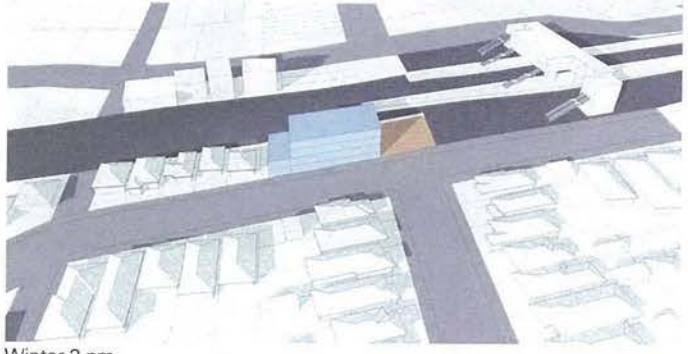


Winter 12 noon



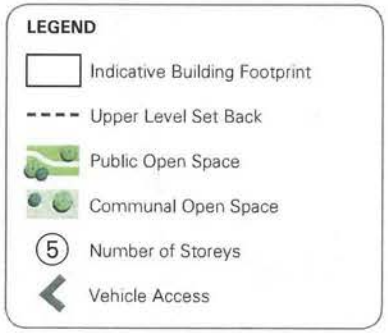
Winter 3 pm

Central Precinct (Sites 4-5) - Detailed Master Plan

George Street pedestrian connection to Powell's Creek Reserve

Key Features:

1. Pedestrian links connecting George Street through to Powell's Creek Reserve and Canada Bay Primary School
2. New buildings to address George Street, the park and the pedestrian links
3. Retention of the Westpac Data Centre for business use. Apply the same development principles as other sites to illustrate how the site could integrate and redevelop at a future date.



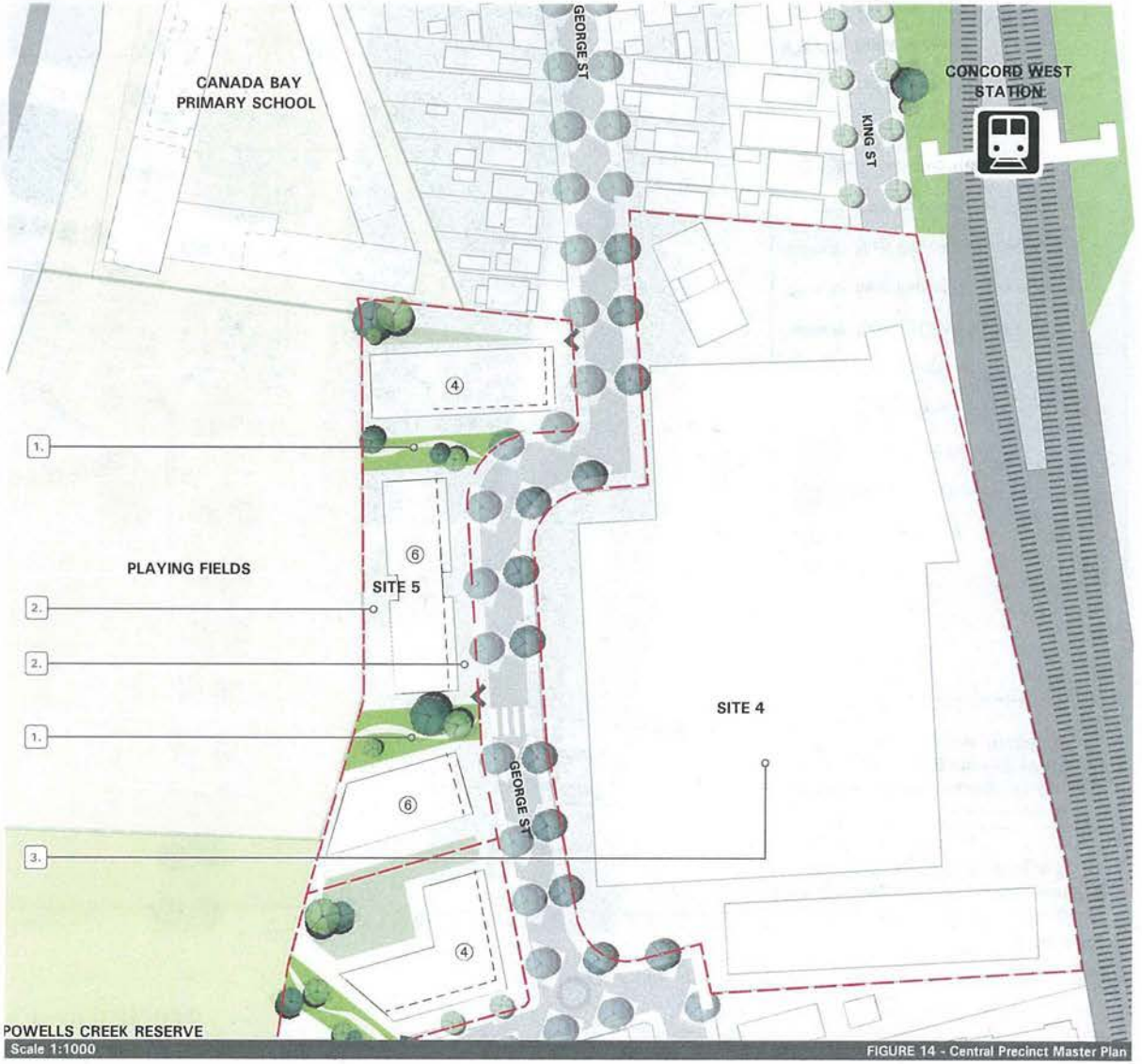


FIGURE 14 - Central Precinct Master Plan

Central Precinct (Sites 4-5) - Development Principles

Gradation of heights - Built form to intensify towards the centre and rear of Site 4 where larger scale forms have less impact on existing low scale residential.

Privacy - lower scale built form to be sensitive to existing residential to the north to minimise privacy & overlooking issues.

Pedestrian Connections - Site 5 to provide multiple direct pedestrian connections to Powell's Creek Reserve and playing fields

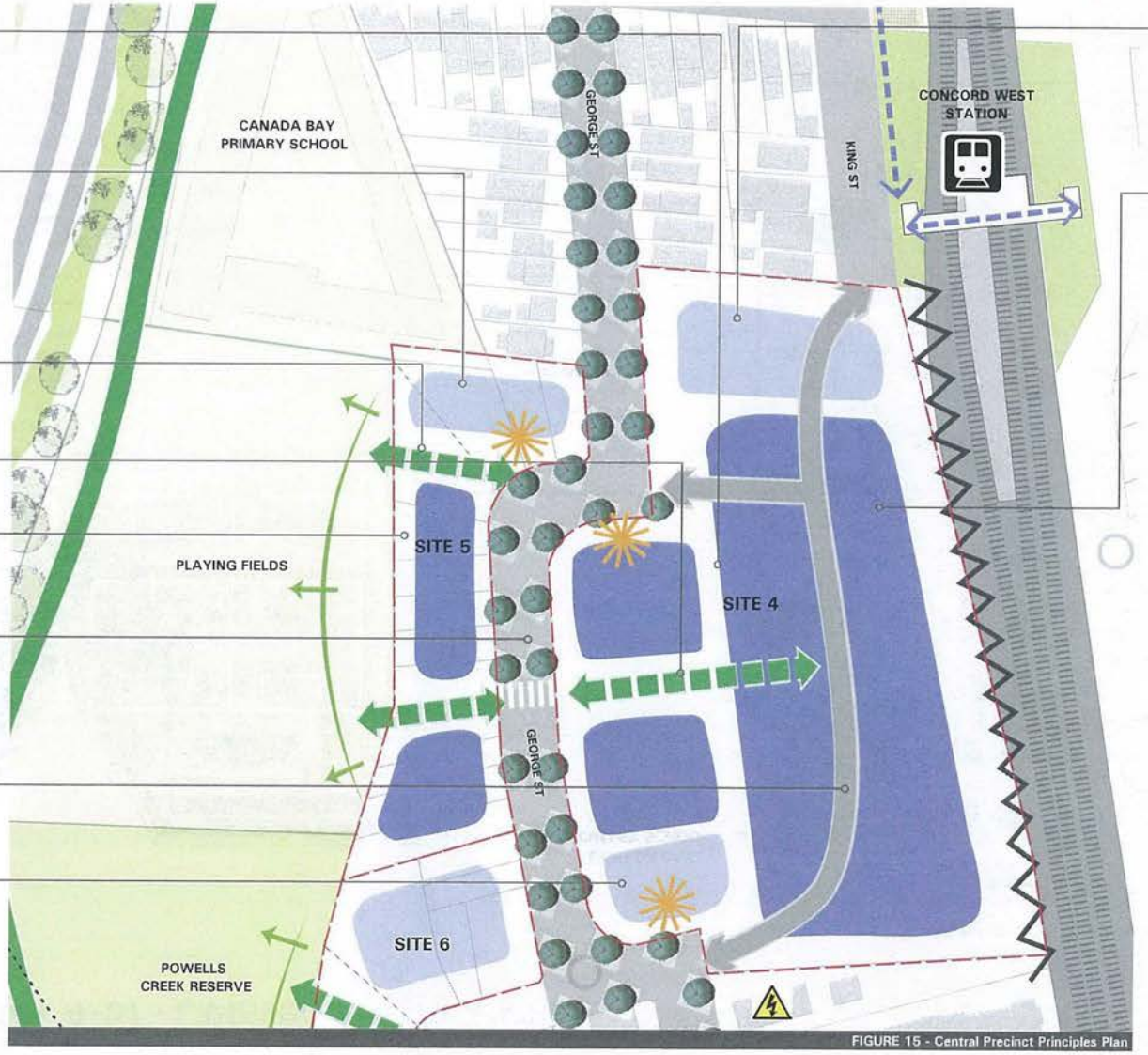
Green Link - create an east / west linear park connecting Site 4 to Powell's Creek Reserve.

Park Interface - built form to address open space and provide passive surveillance.

George St Character - Streetscape improvements to reinforce character & feel of George Street as the central spine of the neighbourhood.

King Street Extension - to provide new connections between George St & New Concord West station.

Lower Scale Buildings - to address George Street and interface with existing residential to the south.



Privacy - lower scale built form to be sensitive to existing residential to the north to minimise privacy & overlooking issues.

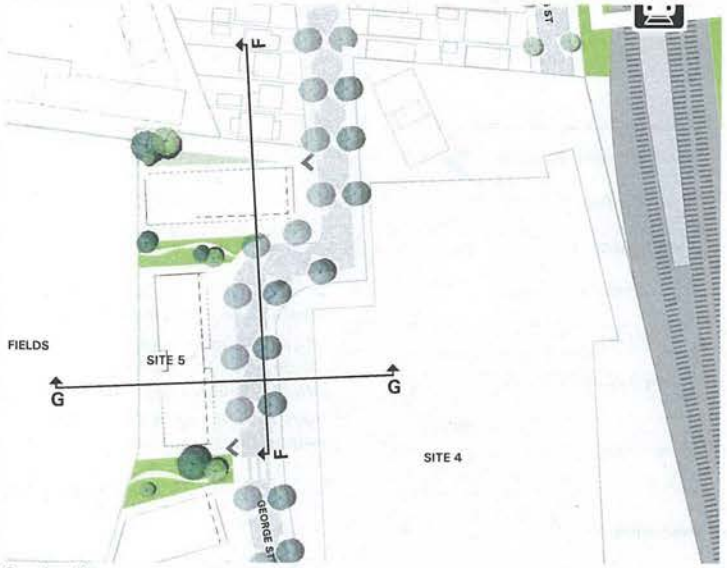
Railway interface - Larger built form to be located along the east of Site 4 and incorporate noise mitigation measures.

LEGEND

- Site Boundary
- Higher Built Form
- Lower Built Form
- Open Space
- Main Roads
- Existing Open Space Paths
- New Pedestrian Connections
- New Vehicular Connections
- Existing Pedestrian Connections
- Streetscape Treatment
- Terminating Vista
- Electrical Substation
- Noise Impacts
- Expansive Views
- Walkable Catchment

FIGURE 15 - Central Precinct Principles Plan

Site 5 - 3D Views & Sections

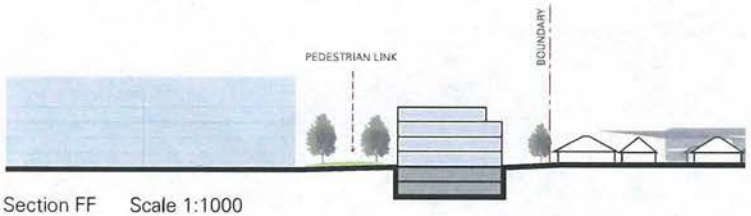


Section Key

Sections

FF - Illustrates heights stepping down from 6st to 4st at the northern interface to low scale residential

GG - Depicts built form to George Street and upper level setbacks



Section FF Scale 1:1000

Section GG Scale 1:1000

Winter 9 am

Winter 12 noon

Winter 3 pm

South Precinct (Sites 6-7) - Detailed Master Plan

George Street street scape

Key Features:

1. Pedestrian link connecting Rothwell Avenue to Powell's Creek Reserve.
2. New buildings to address Rothwell Avenue, Conway Avenue, George Street, the park and the pedestrian link.
3. Four storey built form to complete George Street.

LEGEND

- Indicative Building Footprint
- Upper Level Set Back
- Public Open Space
- Communal Open Space
- (5) Number of Storeys
- Vehicle Access

FIGURE 16 - South Precinct Master Plan

South Precinct (Sites 6-7) - Development Principles

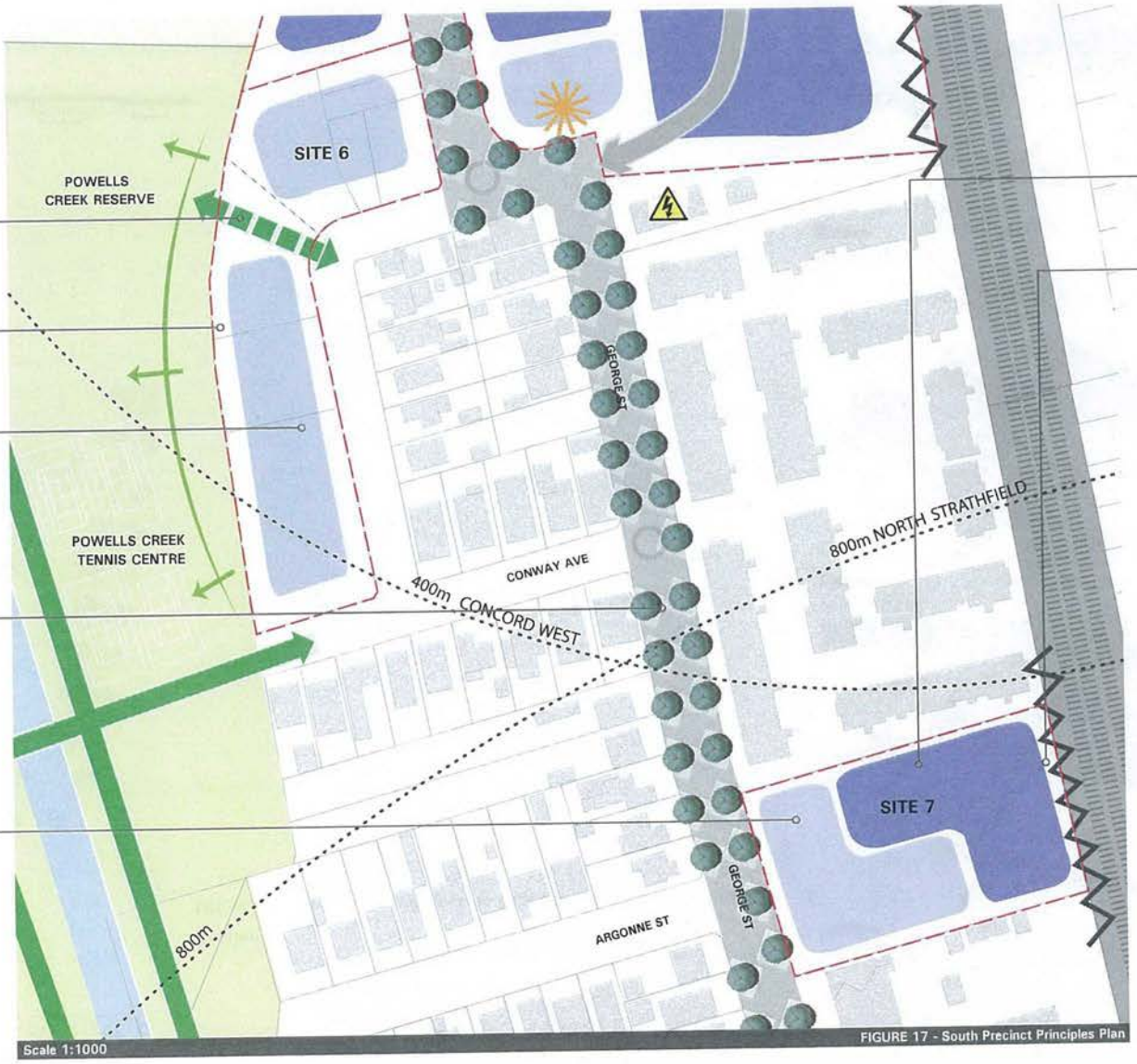
Pedestrian Connection - Site 6 to provide a direct pedestrian connection to Powell's Creek Reserve.

Park Interface - built form to address open space and provide passive surveillance.

Lower Scale Buildings - across site 6 to interface with existing residential to the east & south. Ensure adequate solar access is maintained.

George St Character - Streetscape improvements to reinforce character & feel of George street as main access.

Lower Scale Buildings - to continue existing street wall height to George Street and interface with existing residential to the south and west. Ensure adequate solar access is maintained to residential to the south.



Privacy - built form to be sensitive to existing residential to the north to minimise privacy & overlooking issues.

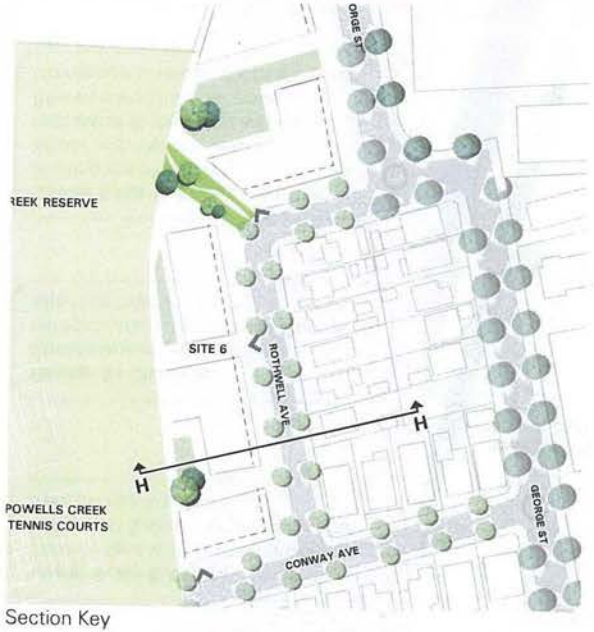
Railway interface - Larger built form to be located along the east of Site 7 and incorporate noise mitigation measures.

LEGEND

- Site Boundary
- Higher Built Form
- Lower Built Form
- Open Space
- Main Roads
- Existing Open Space Paths
- New Pedestrian Connections
- New Vehicular Connections
- Existing Pedestrian Connections
- Streetscape Treatment
- Terminating Vista
- Electrical Substation
- Noise Impacts
- Expansive Views
- Walkable Catchment

FIGURE 17 - South Precinct Principles Plan

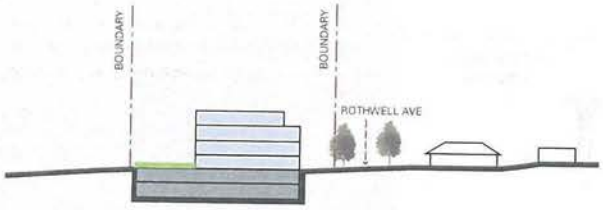
Site 6 - 3D Views & Sections



Section Key

Section

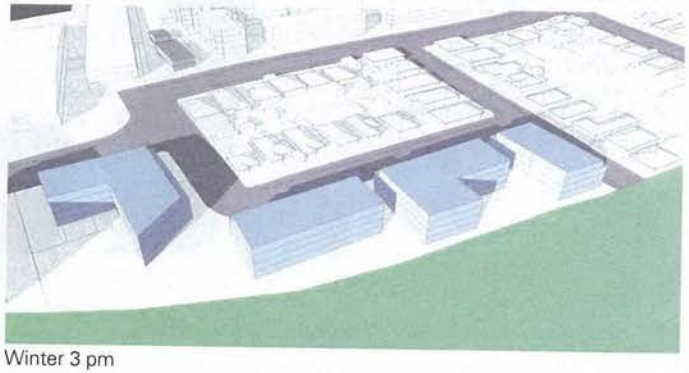
HH - Illustrates 4 storey built form to adjacent low scale residential



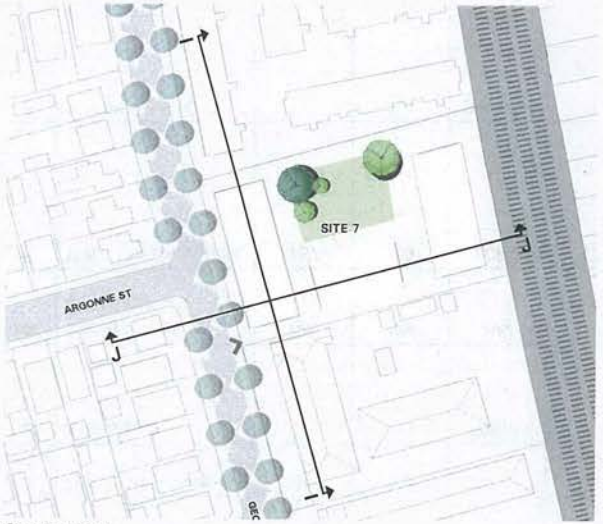
Section HH Scale 1:1000


Winter 9 am


Winter 12 noon


Winter 3 pm

Site 7 - 3D Views & Sections

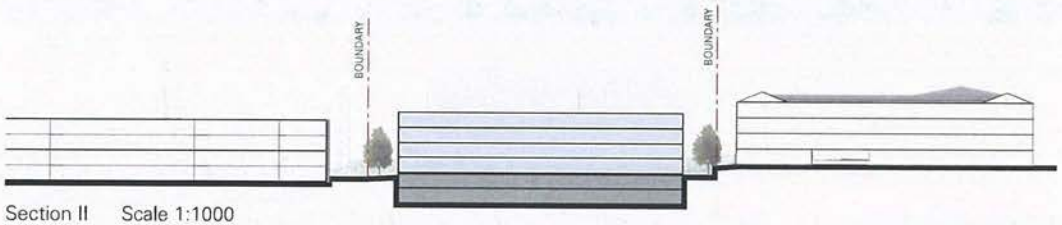


Section Key

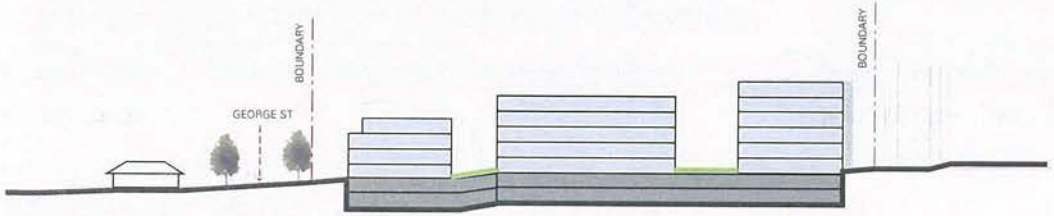
Sections

II - Illustrates a 4 storey building height to George Street maintaining the existing street wall character of the neighbouring properties

JJ - Shows the transition in height from George Street to the rear of the site and in conjunction with neighbouring properties to the north and south



Section II Scale 1:1000



Section JJ Scale 1:1000

Winter 9 am

Winter 12 noon

Winter 3 pm

Indicative Yield Plan

Key Conclusions:

- The total study area yield of **785** units is consistent with the upper limit of the maximum yield as determined by the traffic study.
- The built form principles when applied to the indicative building envelopes deliver a balanced development approach across the industrial sites.
- Where one site receives a greater percentage of the overall dwelling yield to site area it is directly related to the application of the built form principles and the relative constraints between each of the sites.
- The 'advantage' or 'disadvantage' gained or lost is minimal and should not adversly impact the development feasibility of the site.

Development Assumptions:

The development yield was determined using the following calculations:

- Building Envelope to GFA: 85%
- GFA to NSA 85%
- Average Gross Unit Size (m²) 80m²

TABLE 1 - Development Summary Balance

Site	Address	Dwelling Yield	FSR : 1	Site Area	% Industrial Area	% Dwelling Yield	% Yield - % Area	Notes
1	7 Concord Ave.	255	1.6	14968m²	33.0%	32.5%	- 0.5%	neutral
2	204 - 210 George St.	86	1.6	5028m²	11.0%	11.0%	0%	neutral
3	3 King St.	20	2.3	809m²	1.8%	2.5%	+ 0.72%	Lower constraints due to reduced setbacks that are based on the existing building footprint & mixed use.
4	1 King Street (Westpac)	n/a	n/a	n/a	n/a	n/a	n/a	Zoned B7 - No residential
5	176 - 184 George St.	157	1.9	7806m²	17.2%	20.0%	+ 2.8%	Site 5 is the least constrained site due to minimal proximity to existing low scale residential and thus achieves a slightly higher dwelling yield.
6	2 - 10 Rothwell St.	141	1.4	9404m²	20.7%	18.0%	- 2.7%	Site 6 is the most constrained site due to proximity to existing low scale residential and thus achieved a slightly lower dwelling yield.
7	25 George St.	126	1.6	7402m²	16.3%	16.0%	- 0.3%	neutral
TOTAL		785 units		45417m²	100%	100%	0%	Excludes Westpac site

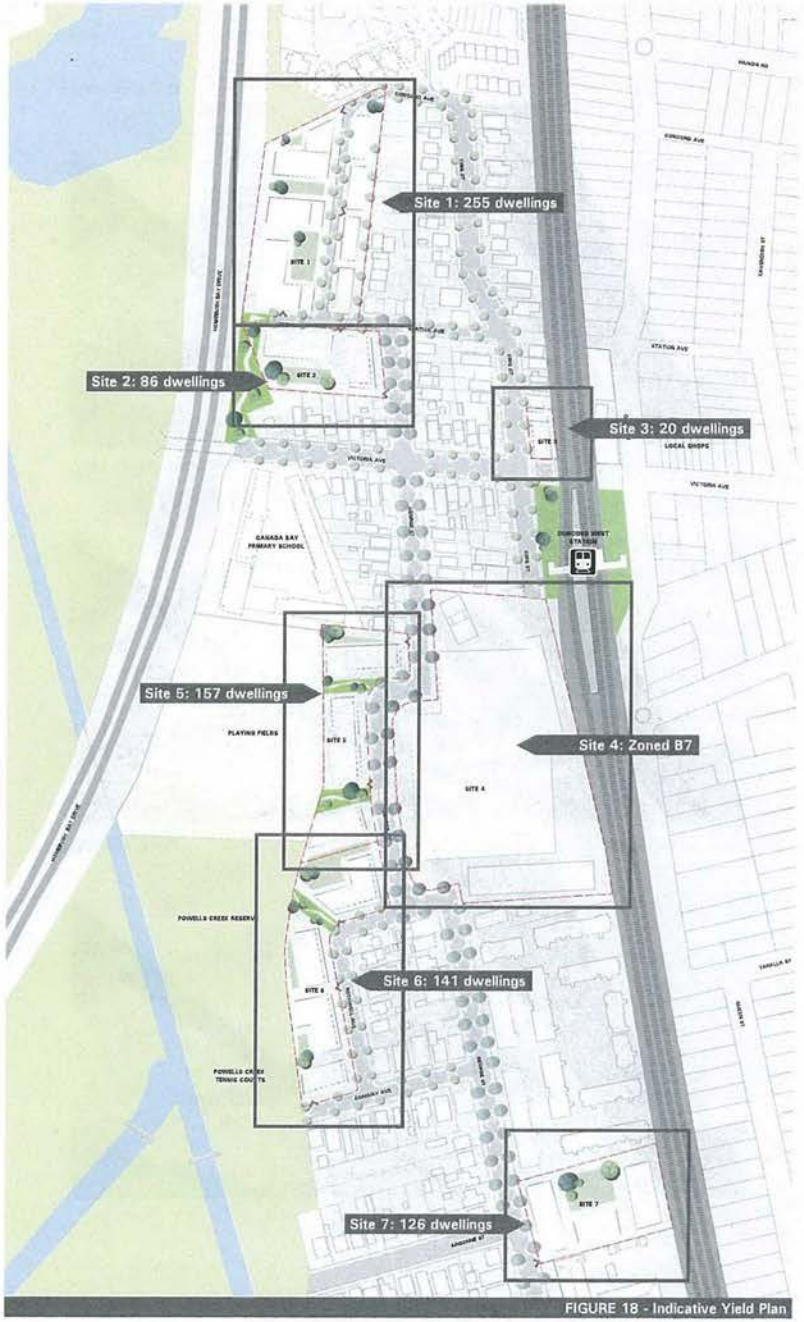


FIGURE 18 - Indicative Yield Plan

LEP Planning Controls - proposed

Height of Buildings

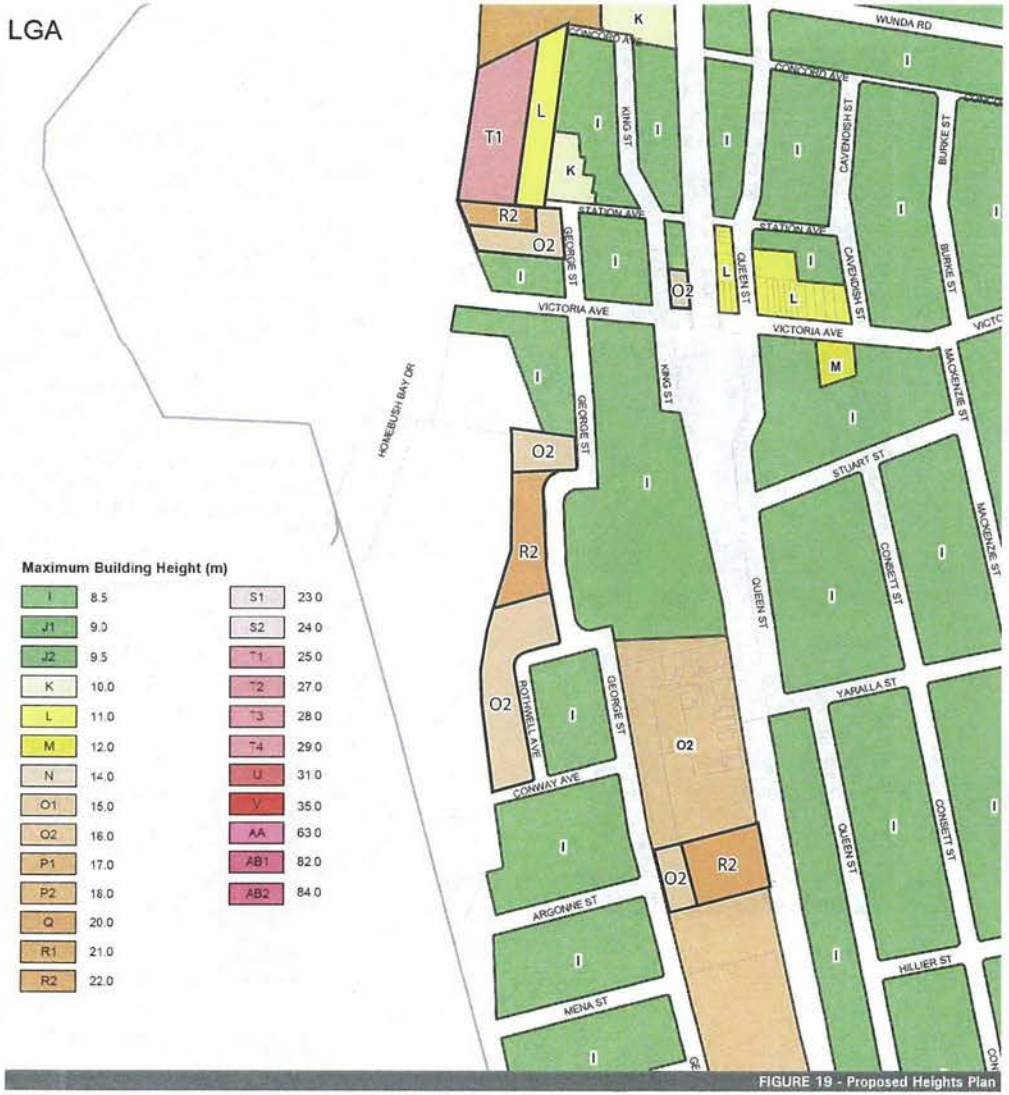


FIGURE 19 - Proposed Heights Plan

Floor Space Ratio

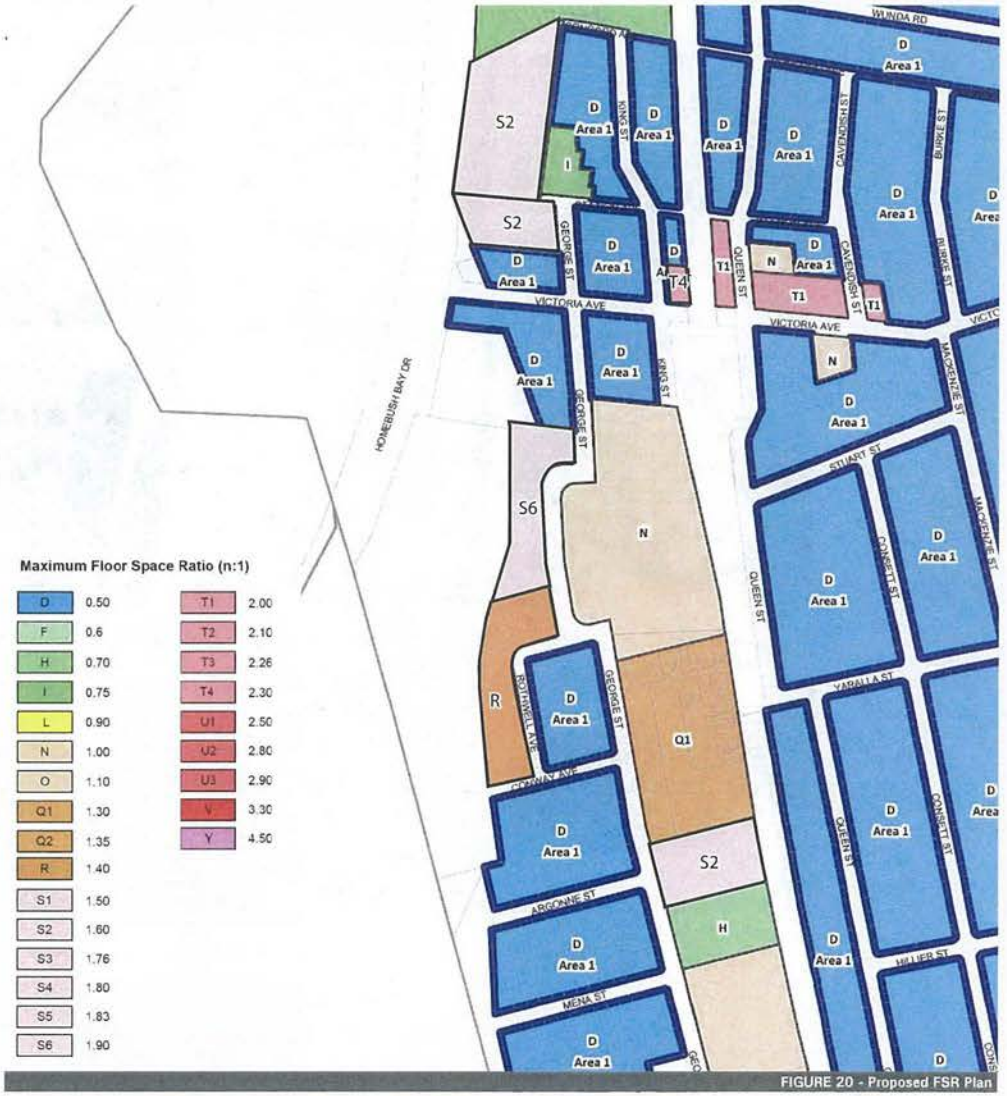


FIGURE 20 - Proposed FSR Plan

Conclusions

The culmination of the master plan process has led to a vision for the industrial sites that have achieved the stated aims and objectives to:

- deliver high quality urban design and appropriate **built form controls** that are considerate of surrounding built form;
- **mitigate impacts** in relation to the use of private motor vehicles and promote the use of public transport, walking and cycling;
- identify opportunities for **public domain improvements** and connections;
- **balance** city-wide and regional goals with the existing community and its context;
- provide a **coordinated planning approach** to the redevelopment of the area;
- provide a **sound methodology** and a thorough, evidence based justification for recommendations provided; and
- undertake the study with Council community and stakeholder **engagement**.

The process involved all stakeholders in an open, transparent and inclusive process which has led to a robust outcome.

The master plan has acknowledged the competing regional and local issues and provides sound development principles that illustrates a coordinated planning approach and a balanced development outcome for the industrial sites.

JBA

Concord West Precinct Master Plan

Urban Design Study

27 May 2014 ■ 13484

Attachment C

JACOBS

Concord West Precinct Master Plan Flood Study

CITY OF CANADA BAY

Flood Assessment for Concord West Precinct Master Plan

Final Draft | 03

7 August 2015

PU003368

City of Canada Bay

Concord West Precinct Master Plan Flood Study

Project no:	IA046600/EN04513
Document title:	Flood Assessment for Concord West Precinct Master Plan
Document no:	Final Draft
Revision:	03
Date:	7 August 2015
Client name:	City of Canada Bay
Client no:	PU003368
Project manager:	Akhter Hossain
Author:	Lih Chong, Akhter Hossain
File name:	I:\ENVR\Projects\EN04513\Deliverables\Reports\Final Draft Report\Concord West Precinct Master Plan Flood Study_FinalDraft_v03.docx

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Document history and status

Revision	Date	Description	By	Review	Approved
DRAFT v01	7 May 2015	Draft Report	L Chong, A Hossain	A Hossain	A Hossain
DRAFT V02	17 July 2015	Final Draft	Lih Chong	A Hossain	A Hossain
DRAFT v03	7 Aug 2015	Final Draft	LC/AH	A Hossain	A Hossain

Distribution of copies

Revision	Issue approved	Date issued	Issued to	Comments
DRAFT v01		8 May 2015	City of Canada Bay	
DRAFT v02		19 July 2015	City of Canada Bay	Electronic copy
DRAFT v03		7 Aug 2015	City of Canada Bay	Electronic copy

Contents

Appendices

Executive Summary

Several areas within the Concord West Precinct have been developed recently (including Victoria Avenue Public School and road and drainage works in Victoria Avenue) or are proposed for redevelopment, such as Powells Creek Channel Naturalisation and Bank Renewal project (Powells Creek Bank Renewal Project) by Sydney Water and proposed rezoning of several industrial lots for which a Master Plan was prepared by JBA and GTA Consultants in May 2014. The Master Plan involves rezoning of seven sites to Medium Density Residential (R3) and Business Park (B7). Jacobs was engaged by Council to undertake a Flood Study and to prepare a concept design for the flood mitigation measures for the Master Plan.

Jacobs undertook detailed hydrologic and hydraulic modelling using the available data and additional data collected as part of this study to define flooding behaviour for the study area. The hydraulic model, developed using TUFLOW, was calibrated and verified against observed flood levels. The model was utilised to define flood behaviour for the full range of flood events between 50% annual exceedance probability (AEP) and the Probable Maximum Flood (PMF) events for the baseline conditions.

The flooding assessment for the baseline conditions shows that some parts of the precinct are significantly affected by flooding during frequent storm events, most notably the trapped low-lying area located to the north of Victoria Avenue. There is also a trapped sag point on George Street which is subject to more than 1m depth of flooding in the 50% AEP event. It is to be noted that George Street is the only vehicular access route to properties to the north of Rothwell Avenue and inundation of this sag point means that vehicular access to these properties is cut off during minor storm events.

A climate change sensitivity analysis was undertaken for the baseline conditions both for increased rainfall intensities of 10%, 20% and 30% for the 1% AEP event and sea level rise scenarios for the year 2050 and the year 2100 for the 5% AEP, 1% AEP and PMF events. Increased rainfall intensities with climate change for the 1% AEP event resulted in up to 0.36m flood level rise with 30% increase in rainfall intensity. Flood levels within the study area for the modelled flood events were not impacted with the year 2050 sea level rise scenario and the maximum increase in flood level within the study area was 0.2m with the year 2100 sea level rise scenario. However, the low lying areas within the precinct would be subject to tidal flooding with potential sea level rise. The 1% tide levels are estimated at 1.9 m AHD and 2.4mAHD with the year 2050 and 2100 sea level rise scenarios respectively.

A Flood Planning Area (FPA) map prepared for the precinct indicates that approximately 25% of the area of the precinct is located at or below the adopted Flood Planning Level (FPL) for residential development. A 0.5m freeboard was added to the 1% AEP flood levels for areas impacted by flooding in Powells Creek and a 0.3m freeboard was added to the 1% AEP flood levels resulting from overland flooding. Sites 1, 2, 4 (proposed Business Park), 5 and 6 defined in the Master Plan are located within the FPA. Several multi-storey buildings are included in the Master Plan for all sites (1-7) which would result in substantial increase in resident population within the precinct.

The flooding assessment for the proposed scenarios included Sydney Water's Powells Creek Bank Renewal project, the Master Plan for Concord West Precinct (with no flood mitigation measures) and the Master Plan with flood mitigation measures. Whilst there are some improvements in flood levels as a result of the Powells Creek Bank Renewal project particularly on properties adjacent to the creek and immediately downstream of Pomeroy Street, the Master Plan results in flood level increases of up to 0.06m in the 5% and 1% AEP events, which impacts on a number of existing residential properties on King Street. Hence flood mitigation works were considered to mitigate flood impacts and to maintain access to properties located north of the George Street sag point in the 1% AEP event.

A number of flood mitigation options were identified and assessed to mitigate flood impacts with the Master Plan. Feasible options for mitigating flood impacts with the Master Plan, which involved on-site works for Site 1 & 2 and re-grading of George Street sag point, were evaluated. Several iterations were undertaken to develop

a concept design for the flood mitigation strategy for Site 1 & 2 by balancing cut and fill volumes and loss of floodplain storage due to the proposed buildings. Similarly, several iterations were also required to develop a concept design for the re-grading of the George Street sag point.

The Site 1 & 2 mitigation strategy maintains existing flooding conditions by balancing cut (lands located below 1% AEP flood event) and fill volumes due to the proposed buildings, but does not provide improvements to existing flooding issues. The flooding assessment with the flood mitigation strategy for Site 1 & 2 was undertaken for the existing climate and assumed that all proposed flood storage areas and the floodway were empty prior to start of a storm event. The low-lying nature of the site and flat grades may result in extended duration of ponding within the proposed flood storage areas and the floodway with climate change. In combination with high groundwater and king high tides, the duration of ponding may be extended further and consequently the proposed flood storage areas and the floodway may not be completely empty prior to the start of a storm event. The effectiveness of the mitigation strategy would be diminished if the proposed flood storage areas and the floodway were full with water prior to start of a storm event. Further investigations and design would be required to ensure that the proposed flood storage areas and the floodway would be empty after occurrence of significant storm events.

The focus of this study has been on flood impact mitigation and hence issues relating to groundwater and drainage have not been considered in detail. Further investigations are required to determine if the high groundwater and poor drainage can be managed or if the proposed mitigation strategy design can be refined to minimise their impacts. Additionally, if sub-soil drainage is installed, an assessment needs to be undertaken on whether it increases the risk of site contamination leaching into the site runoff as both Site 1 and 2 are affected by acid sulphate soils and other industrial contamination.

Areas proposed for flood storages and the floodway would be subject to greater than 0.5m depth of flooding during frequent storm events. Hence, these areas are not considered safe for children and need to be fenced off with porous fencing. Ponding in these areas may also pose other amenity, health and safety issues.

Access to Site 1 & 2 is cut off when the George Street sag point is subject to flooding. The mitigation strategy for George Street sag point is potentially critical for Site 1 & 2. The mitigation strategy includes raising of the sag point by 1m, regrading of Site 5 to drain surface water from the sag point and construction of a floodway through the playing fields to drain flows to Powells Creek. With the mitigation strategy in place, George Street is trafficable in the 1% AEP event and untrafficable in the PMF event.

In relation to Site 1 and 2, the following recommendations are made:

- Further design development and investigations are recommended to ensure the long-term viability of the mitigation options and strategies as assessed in this study, particularly in relation to potential loss of flood detention capacity from ponded water due to potential rising groundwater levels, and sea level rise, and acid sulphate soils and soil contamination.
- Stakeholders (including Sydney Olympic Park Authority, Sydney Water and NSW Office of Environment and Heritage) are to be consulted on the mitigation option involving an overland flow path from Victoria Avenue sag point through Sydney Olympic Park land to Powells Creek;
- The proposed development (buildings) on Site 1 & 2 could be consolidated further to minimise flood impacts without requiring excavation of low-lying lands; and
- In order to facilitate emergency evacuation during floods, alternative vehicular access route to Site 1 & 2, such as off Homebush Bay Drive, is to be investigated if George Street sag point is not trafficable in the PMF event.

The mitigation strategy for George Street sag point reduces depths of flooding in the gutter from over 0.5m in the baseline case to 0.15m in the concept design case, for the 1% AEP event. Analysis of the flow conditions indicates that the sag point is safe for vehicle traffic in up to the 1% AEP flood and the sag point would be

subject to up to 0.7m depth of flooding in the PMF event. The new bypass floodway would discharge into Powells Creek. Stakeholders, who may include NSW Office of Environment and Heritage (OEH) and Sydney Water, should be consulted, and approval may be required prior to construction of the proposed bypass floodway. The following recommendations are made for the proposed mitigation works for the George Street sag point:

- Further design development of George Street sag modifications for road design and traffic aspects. The final design will affect the flood hazard, flood accessibility and trafficability. Investigate if road is passable in the PMF event and enhancements to proposed drainage infrastructure to improve flood accessibility.
- The proposed works are to be refined further to avoid demolition of the existing amenities block and the irrigation tank by installing culverts under the corner of the oval to short-cut the floodway corner near the amenities block. This would avoid the floodway encroaching on the amenities block and the light or transmitter pole adjacent, and would negate the need for a footbridge.
- Stakeholders (Sydney Water, OEH) are to be consulted about the proposed works and discharge into Powells Creek.
- It should be noted that approval will be required from the City of Canada Bay for the proposed floodway on public land to the west of site 5, and that consultation would also likely be required with the Department of Education and Communities in terms of the option for culverts under the school oval.

Whilst the 2013 LEP and 2013 DCP addresses Council's responsibility for the management of flood prone land policy to some extent, additional planning controls are required for the Concord West Precinct to comply with the requirements of Government's Flood Prone Land Policy. In addition, the Master Plan would result in a substantial increase in resident population within the precinct. The following recommendations are made for consideration by Council:

- Council should amend its LEP to apply the model local provisions clause 7.3 (flood planning) to all lands located within the flood planning area defined in this study.
- Council should adopt the recommended freeboards for defining flood planning levels for residential development for the precinct and the minimum freeboard recommended for basement car park.
- A new DCP is to be prepared to address the flood risk for the Concord West Precinct identified in this study including the following:
  - Access to all proposed buildings to facilitate emergency (eg. fire and medical needs) evacuation needs during floods rarer than the 1% AEP;
  - Flood compatible materials for building components to be used for new development/redevelopment;
  - Safety of people and damages to vehicles in the basement car park;
  - Safety of people living near constructed flood storage areas and floodways;
  - Requirement for porous fencing on flood liable land;
  - Improved flood education and preparedness;
  - The consequent cumulative impact on flood behaviour due to filling and/or new buildings; and
  - Impacts of climate change and sea level rise.
- Council communicates flood risk for the study area in a responsible manner to allow the community to make informed decisions where discretion exists and to complement emergency management education and preparedness programs;
- Council considers the provision of Section 149 notifications relating to flooding for the study area; and
- A revised planning strategy is to be formulated for Site 1 & 2 based on the findings of this study.

Important note about this report

The sole purpose of this report and the associated services performed by Jacobs is to document the flood assessment undertaken for the Concord West Precinct Master Plan in accordance with the scope of services set out in the contract between Jacobs and the Client. That scope of services, as described in this report, was developed with the Client.

In preparing this report, Jacobs has relied upon, and presumed accurate, any information (or confirmation of the absence thereof) provided by the Client and/or from other sources. Except as otherwise stated in the report, Jacobs has not attempted to verify the accuracy or completeness of any such information. If the information is subsequently determined to be false, inaccurate or incomplete then it is possible that our observations and conclusions as expressed in this report may change.

Jacobs derived the data in this report from information sourced from the Client (if any) and/or available in the public domain at the time or times outlined in this report. The passage of time, manifestation of latent conditions or impacts of future events may require further examination of the project and subsequent data analysis, and re-evaluation of the data, findings, observations and conclusions expressed in this report. Jacobs has prepared this report in accordance with the usual care and thoroughness of the consulting profession, for the sole purpose described above and by reference to applicable standards, guidelines, procedures and practices at the date of issue of this report. For the reasons outlined above, however, no other warranty or guarantee, whether expressed or implied, is made as to the data, observations and findings expressed in this report, to the extent permitted by law.

This report should be read in full and no excerpts are to be taken as representative of the findings. No responsibility is accepted by Jacobs for use of any part of this report in any other context.

This report has been prepared on behalf of, and for the exclusive use of, Jacobs's Client, and is subject to, and issued in accordance with, the provisions of the contract between Jacobs and the Client. Jacobs accepts no liability or responsibility whatsoever for, or in respect of, any use of, or reliance upon, this report by any third party.

1. Introduction

1.1 Background

The Council for the City of Canada Bay ("Council") is responsible for local planning and land management in the Concord West Precinct area, located on the eastern bank of Powells Creek (refer to **Figure 1-1** for location). Several areas within the Concord West Precinct have been developed recently (including Victoria Avenue Public School and road and drainage works in Victoria Avenue) or are proposed for redevelopment, such as Powells Creek Bank Renewal project by Sydney Water and proposed rezoning of several industrial lots for which a Master Plan was prepared by JBA and GTA Consultants in May 2014.

Council has engaged Jacobs Engineering Group ("Jacobs") to provide flood related technical services including a Flood Study generally in accordance with the floodplain risk management process outlined in State Government's *Floodplain Development Manual, April 2005*. This *Flood Study and Concept Design* project will inform the *Concord West Precinct Master Plan* and will be the first undertaken by Council based on the guidelines in the Manual.

1.2 Objectives

Key objectives of the flood study are:

- To define existing mainstream and overland flood levels along the eastern bank of Powells Creek and the local catchments to the east of the creek, within the City of Canada Bay, as well as under the proposed development conditions. The Flood Study will also need to consider the impact of upgrades and drainage modifications associated with the nearby North Strathfield Railway Underpass (NSRU) project to the south of the study area, which is currently under construction.
- To consider the potential impact of climate change on flooding for the study area, to assist Council with future planning decisions.
- To consider the flood impact of the proposed Master Plan on the existing conditions and determine whether development proposed is acceptable.
- To identify options for mitigating flood impacts and prepare concept design and cost estimates for the preferred options.

This flood study presents an early opportunity for Council to ensure that the potential flood impacts of these developments can be ascertained, and/or flooding controls to be defined to minimise flooding impacts to, and resulting from, the proposed rezoning and Master Plan. Council also must understand the future drainage infrastructure requirements in this developing area, and associated infrastructure costs. This will help Council plan capital investment to address the flood risk and mechanisms for funding. Therefore, the study will also include the provision of a concept design and costing of proposed new and upgraded public drainage within the study area for affected Master Plan redevelopment sites.

Legend

- Study Area
- Railway
- Roads
- Watercourse

A3

SHEET 1 of 1

GDA 1994 MGA Zone 56

JACOBS

TITLE Study Area

PROJECT Concord West Precinct Masterplan Flood Study

CLIENT City of Canda Bay

DRAWN LC | PROJECT # IA046900 | MAP # FIGURE 1-1 | REV 1 | VER 1

CHECK LC | DATE 17/12/2014

1.3 Structure of the Report

This report describes the outcomes from this study. This report has been divided into the following sections:

Section 1: introduces the study

Section 2: provides details on the initial investigations undertaken for the study including review of the available data, community consultation and collection of additional topographic data

Section 3: details hydrologic assessment undertaken for this study

Section 4: details formulation of a hydraulic model for the study area

Section 5: discusses calibration and verification of the hydrologic and hydraulic models

Section 6: details flood assessment for baseline condition

Section 7: details flood assessment for proposed conditions including the Master Plan

Section 8: details concept design of flood mitigation works for the Master Plan

Section 9: provides an overview on floodplain risk management for the study area

Section 10: provides conclusions and recommendations on the study

Section 11: provides details on references citied in this report

Appendix A: provides details on rainfall for February 1990 storm events

Appendix B: provides details on local sub-catchment hydrology validation

Appendix C: contains flood maps for the baseline conditions including impacts of climate change

Appendix D: contains flood maps for the developed conditions

Appendix E: contains flood maps with the Master Plan

Appendix F: contains flood maps for the Master Plan with concept design for the proposed flood mitigation works

Appendix G: provides cost estimates for the concept design