

Aerial Photo Flown: 2009 Printed Date: ? Scale: 1:?



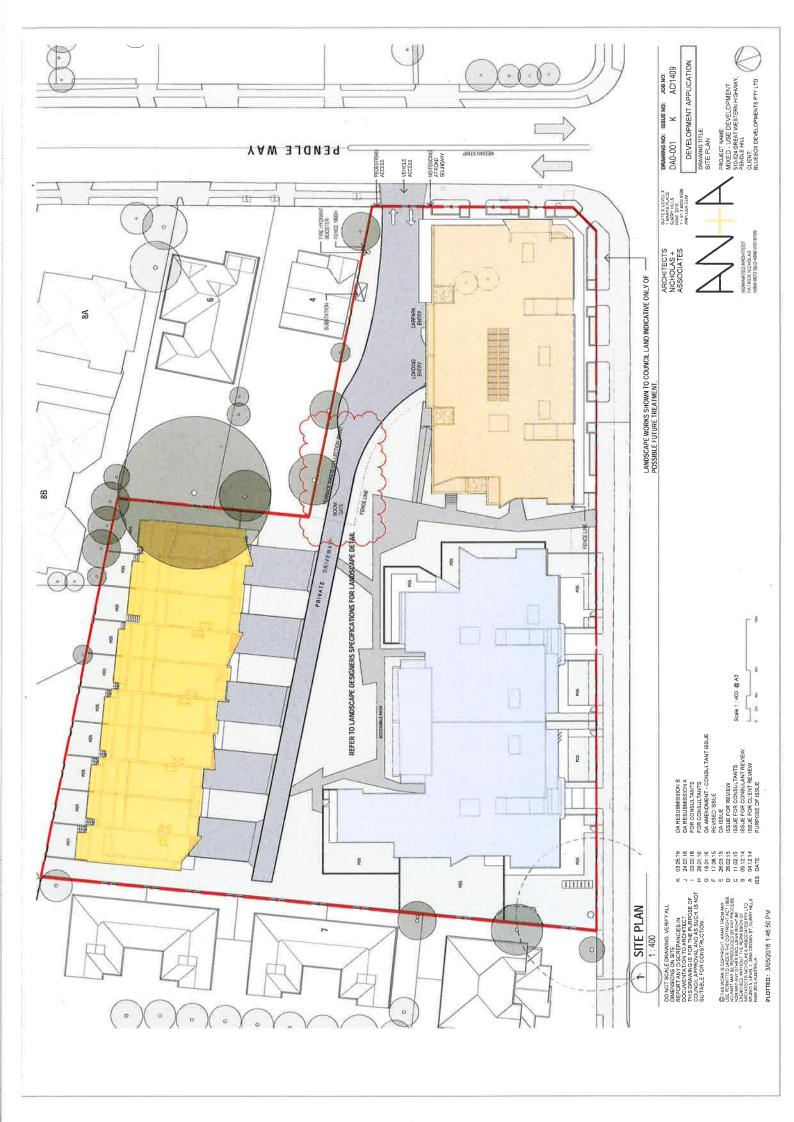
Copyright LPMA Cadastral information. Location and size of any structure, Council's or private stormwater drainage infrarstructure is approximate only and need to be confirmed by you on Site.

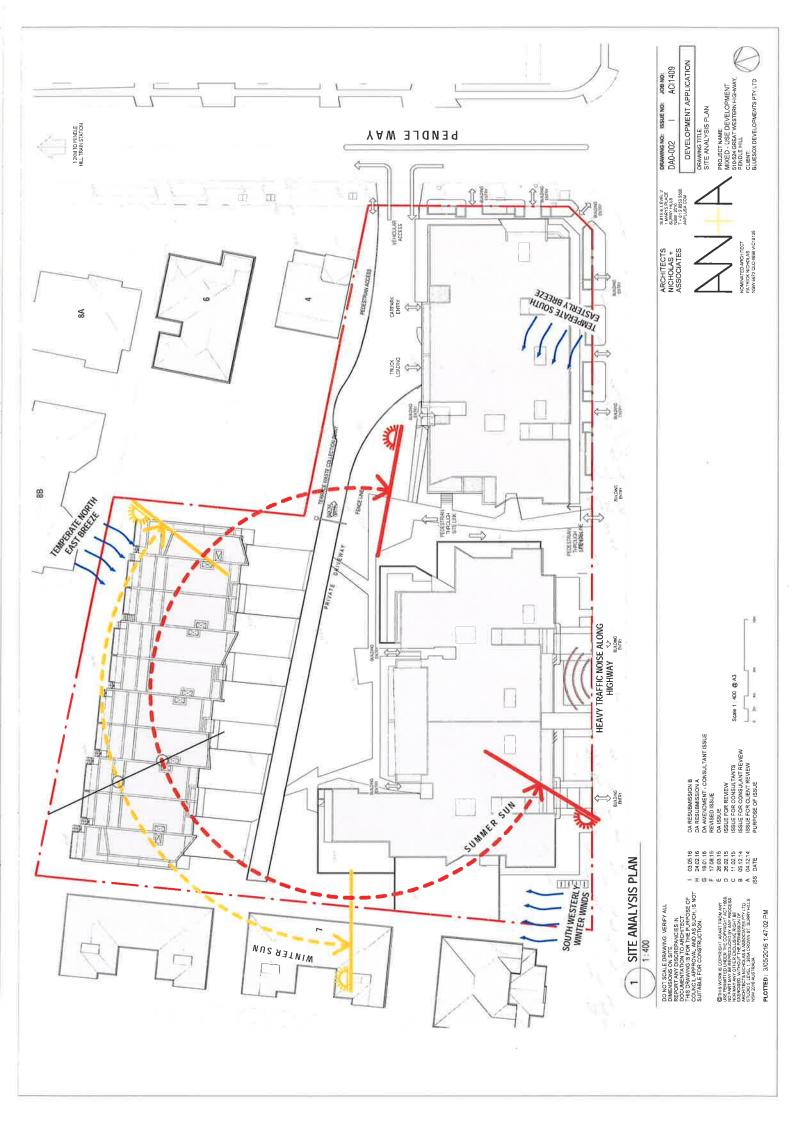


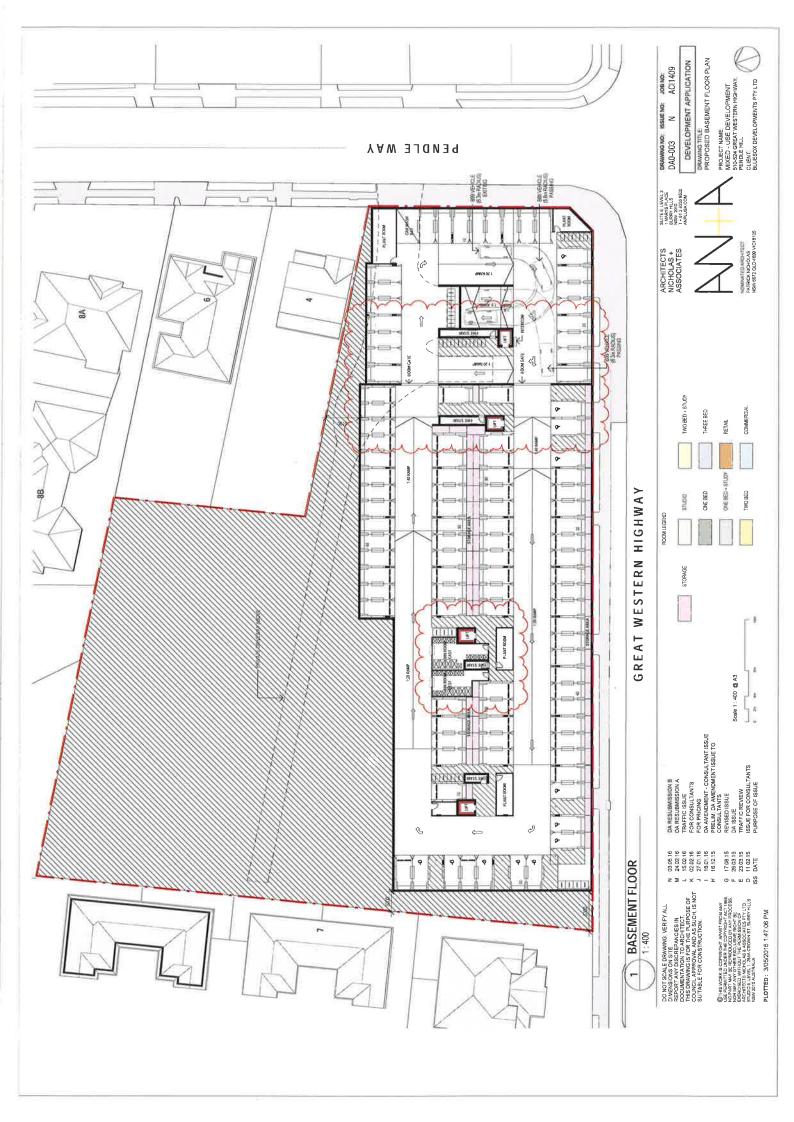


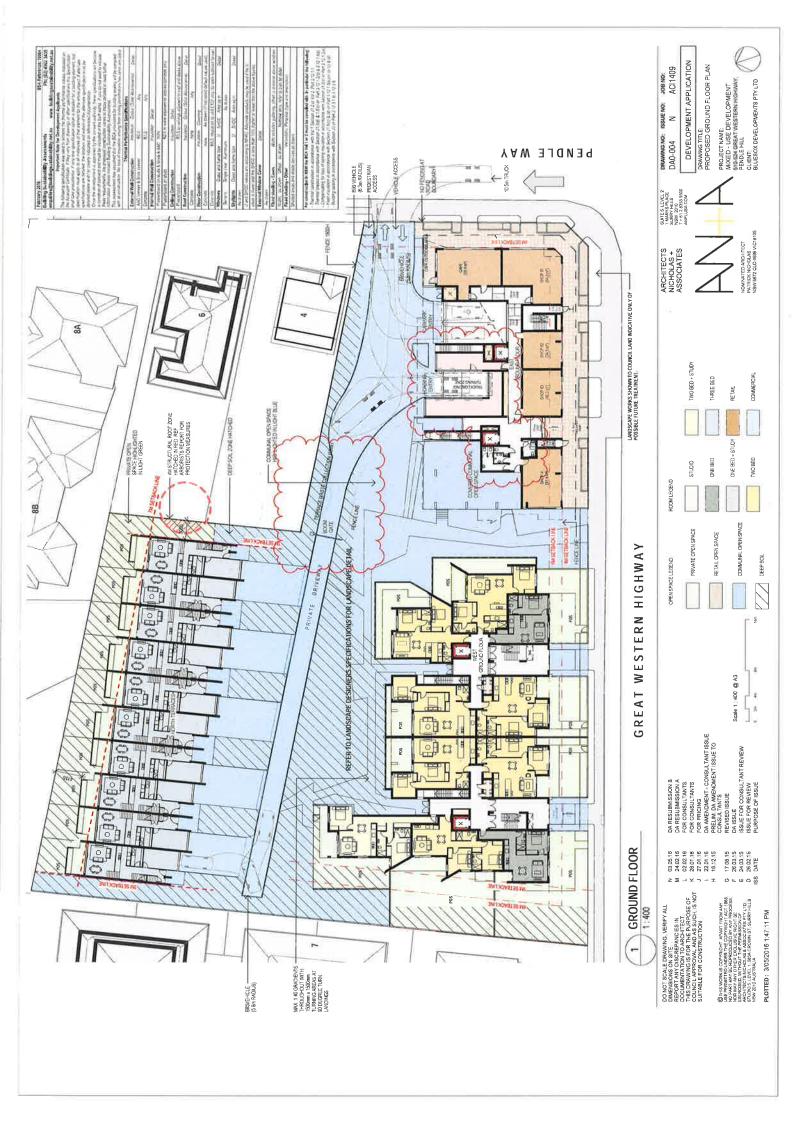
DEVELOPMENT APPLICATION DA0-000 F ACI1409

Scale 1 400 @ A3











1 BED ADAPTABLE UNITS - (EAST SHOP TOP HOUSING)

1 - EU17 & EU18 2 - EU27 & EU28 3 - EU37 & EU38

2 BED ADAPTABLE UNITS

- (WEST RESIDENTIAL FLAT BUILDING)

1 - WU14 & WU15 2 - WU24 & WU25

ARCHITECTS NICHOLAS + ASSOCIATES

DEVELOPMENT APPLICATION DA0-008 G ACI1409

DRAWING TITLE: ADAPTABLE UNITS

PROJECT NAME
MIXED. USE DEVELOPMENT
SID-224 GREAT WESTERN HIGHWAY,
CLIENT
GLIENT
BLUESOX DEVELOPMENTS PTY LTD

Scale 1:100 @ A3

DA ISSUE ISSUE FOR CONSULTANT REVIEW ISSUED TO ACCESS CONSULTANT ISSUED TO ACCESS CONSULTANT PURPOSE OF ISSUE

D 260315 C 191214 B 171214 A 151214 ISS DATE

DA RESUBMISSION A ISSUE TO PLANNERS PREUM, DA AMENDMENT ISSUE TO CONSULTANTS

PLOTTED: 29/02/2016 4:48 27 PM



60% OF RESIDENTIAL UNITS SHOULD BE NATURALLY CROSS VENTILATED NATURAL CROSS VENTILATION REQUIREMENT

TOTAL OF 64 UNITS: (64X0.6) 38 SHOULD BE NATURALLY CROSS VENTILATED

NATURAL CROSS VENTILATION PROVIDED EAST WING: 16 UNITS ARE NATURALLY CROSS VENTILATED WEST WING: 24 UNITS ARE NATURALLY CROSS VENTILATED

TOTAL OF 40 RESIDENTIAL UNITS ARE NATURALLY CROSS VENTILATED 62.5% OF RESIDENTIAL UNITS ARE NATURALLY CROSS VENTILATED

ARCHITECTS NICHOLAS + ASSOCIATES

DEVELOPMENT APPLICATION DA0-010 G ACIT40

ACI1409

DRAWING TITLE CROSS VENTILATION PLANS

PROJECT NAME MIXED - USE DEVELOPMENT 510-224 GREAT WESTERN HIGHWAY, PENDLE HILL

PLOTTED: 29/02/2016 4:48:32 PM

G 240216 F 030216 E 180116 D 170815 C 260315 A 120215 ISS DATE

ISSUE FOR CONSULTANT PURPOSE OF ISSUE

DA RESUBMISSION A
SSALE TO PLANNERS
DA AMENIOMENT. CONSULTANT ISSUE
REVISED ISSUE
DA SISSUE

Scale 1:400 @ A3

CLIENT: BLUESOX DEVELOPMENTS PTY LTD

SOLAR ACCESS REQUIREMENT

LIVING ROOMS AND PRIVATE OPEN SPACES OF AT LEAST 70% OF APARTMENTS IN A BUILDING RECEIVE A MINIMUM OF 2 HOURS DIRECT SUNLIGHT BETWEEN 9 AM AND 3 PM AT MID WINTER.

A MAXIMUM OF 15% OF APARTMENTS IN A BUILDING RECEIVE NO DIRECT SUNLIGHT BETWEEN 9 AM AND 3 PM AT MID WINTER

TOTAL OF 64 RESIDENTIAL FLAT BUILDING APARTMENTS (64X0,7) 45 SHOULD RECEIVE A MINIMUM OF 2 HOURS DIRECT SUNLIGHT BETWEEN 9AM AND 3PM MID WINTER

SOLAR ACCESS PROVIDED

EAST WING: 18 UNITS RECEIVE 2 HRS MIN, SOLAR ACCESS WEST WING: 30 UNITS RECEIVE 2 HRS MIN, SOLAR ACCESS

TOTAL OF 48 RESIDENTIAL UNITS RECEIVE 2 HRS MIN, SOLAR ACCESS

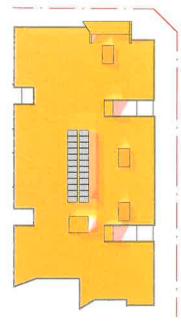


EAST SECOND FLOOR SOLAR ACCESS 2



11AM 9AM

1 EAST FIRST FLOOR SOLAR ACCESS



4 EAST ROOF SOLAR ACCESS



3 EAST THIRD FLOOR SOLAR ACCESS

ARCHITECTS NICHOLAS + ASSOCIATES

DAC-011A B ACI1409

DEVELOPMENT APPLICATION DRAWING TITLE: EAST SOLAR ACCESS PLANS

PROJECT NAME: MIXED - USE DEVELOPMENT 510-524 GREAT WESTERN HIGHWAY, PENDLE HILL CLIENT: BLUESOX DEVELOPMENTS PTY LTD

9 240216 A 030216 ISS DATE The WORK CORNIGHT AND TROUBLE OF THE WAY USE RESURCED THE CONTRIBUTION OF THE WORK OF THE WORK OF THE WORK WAY OTHER POLICISME RIGHT BE EXCESSED WHEN WE WAS THE WORK WAY WAY OTHER POLICISME SIGN OF FACH TELS IN WHICH WE ASSOCIATE BY THE TOTO S. LEPTAL TASK GROWN ST. SLRRY HILLS NAWY DOI A MSTRALIA.

DO NOT SCALE DRAWING. VERIFY ALL
MIGHSIGNOR ON SITE
REPORT ANY DISCREPANCIES IN
OCCUMENTATION TO ARCHITECT.
THIS DRAWING IS FOR THE BURFORS OF
SCHOOL LARROYAL AND AS BUCH, IS NOT
SUITABLE FOR CONSTRUCTION

PLOTTED: 29/02/2016 4:48:36 PM

DA RESUBMISSION A ISSUE TO PLANNERS PURPOSE OF ISSUE

Scale 1:400 @ A3



DO NOT SCALE DRAWING VERFY ALL DIMENSIONS ON SITE DOCUMENTAIN ON SOFFINGES IN THIS DRAWING IS FOR THE PURPOSE OF COUNCIL HAT PORONAL AND AS SUCH, IS NOT SUTMALE FOR CONSTRUCTION

TTAM BAM

B 24 02 16 A 03 02 16 ISS DATE PLOTTED: 29/02/2016 4:48:41 PM

DA RESUBMISSION A ISSUE TO PLANNERS PURPOSE OF ISSUE

Scale 1:100 @ A3

SUITE 6 LEVEL 2 1 MARYS PLACE SURRY HILLS NSW 2010 T+612 8353 9500 ANPLUSA COM

DA0-011B B ACI1409

ARCHITECTS NICHOLAS + ASSOCIATES

DEVELOPMENT APPLICATION

DRAWING TITLE: WEST SOLAR ACCESS PLANS

PROJECT NAME:
MIXED - LOSE DEVELOPMENT
S10.523 GREAT WESTERN HIGHWAY,
PENDLE HILL
GLIENT;
BLUCESOX DEVELOPMENTS PTY LTD



REFER TO SCHEDULE FOR TOTAL GFA CALCULATIONS

DEVELOPMENT APPLICATION DRAWING TITLE EAST & WEST WING GFA DIAGRAMS

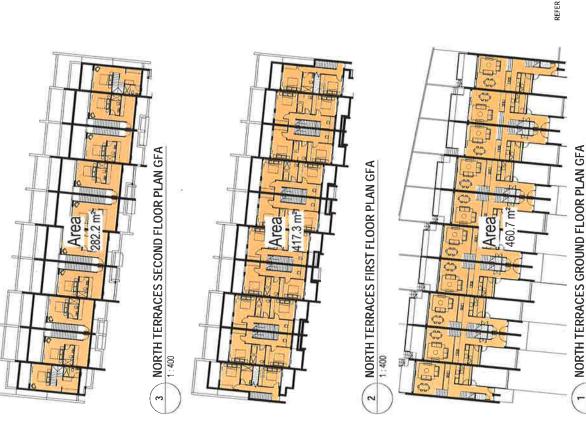
PROJECT NAME
MIXED - USE DEVELOPMENT
510-524 GREAT WESTERN HIGHWAY,
PENDLE HILL

CLIENT: BLUESOX DEVELOPMENTS PTY LTD

PLOTTED: 3/05/2016 1.47 15 PM

Scale 1 400 @ A3

ISSUE FOR REVIEW
ISSUE TO PLANNERS
PURPOSE OF ISSUE



REFER TO SCHEDULE FOR TOTAL GFA CALCULATIONS

ARCHITECTS NICHOLAS + ASSOCIATES

DRAWING TITLE: TERRACE GFA DIAGRAMS

DEVELOPMENT APPLICATION DRAWING NO: ISSUE NO: JOB NO: DA0-013 F ACI1409

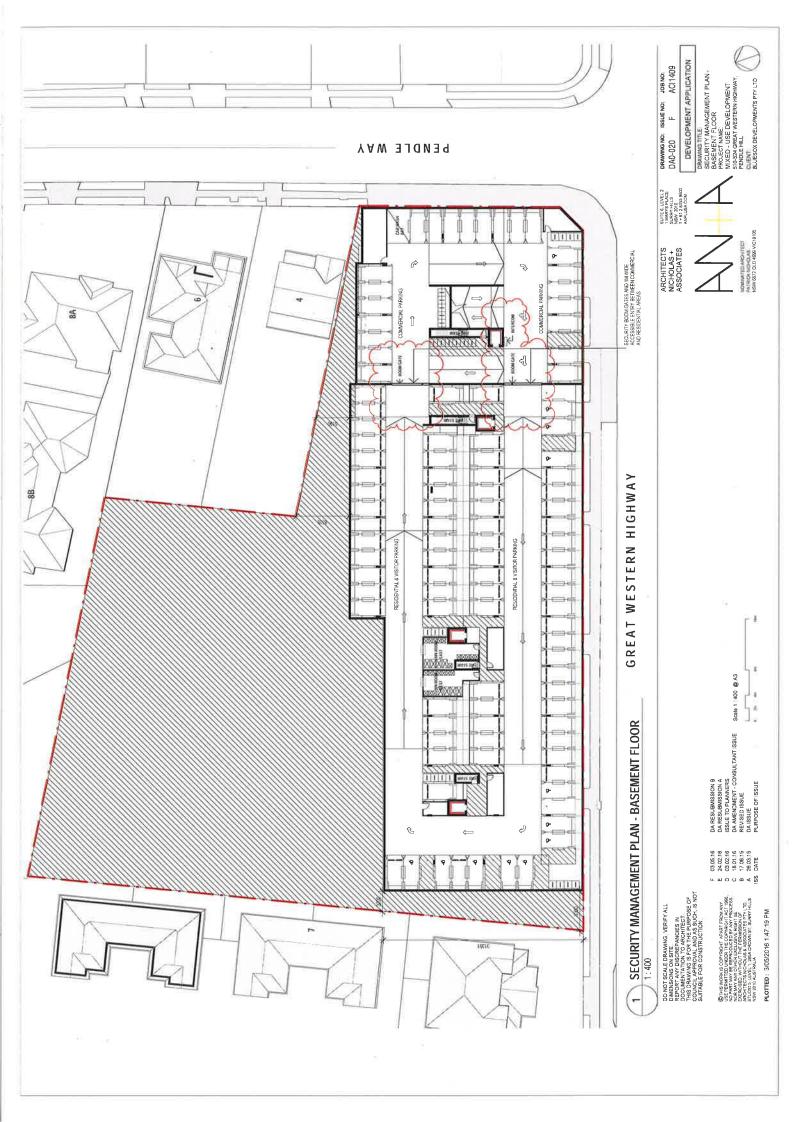
CLIENT: BLUESOX DEVELOPMENTS PTY LTD PROJECT NAME MIXED - USE DEVELOPMENT 510-524 GREAT WESTERN HIGHWAY, PENDLE HILL

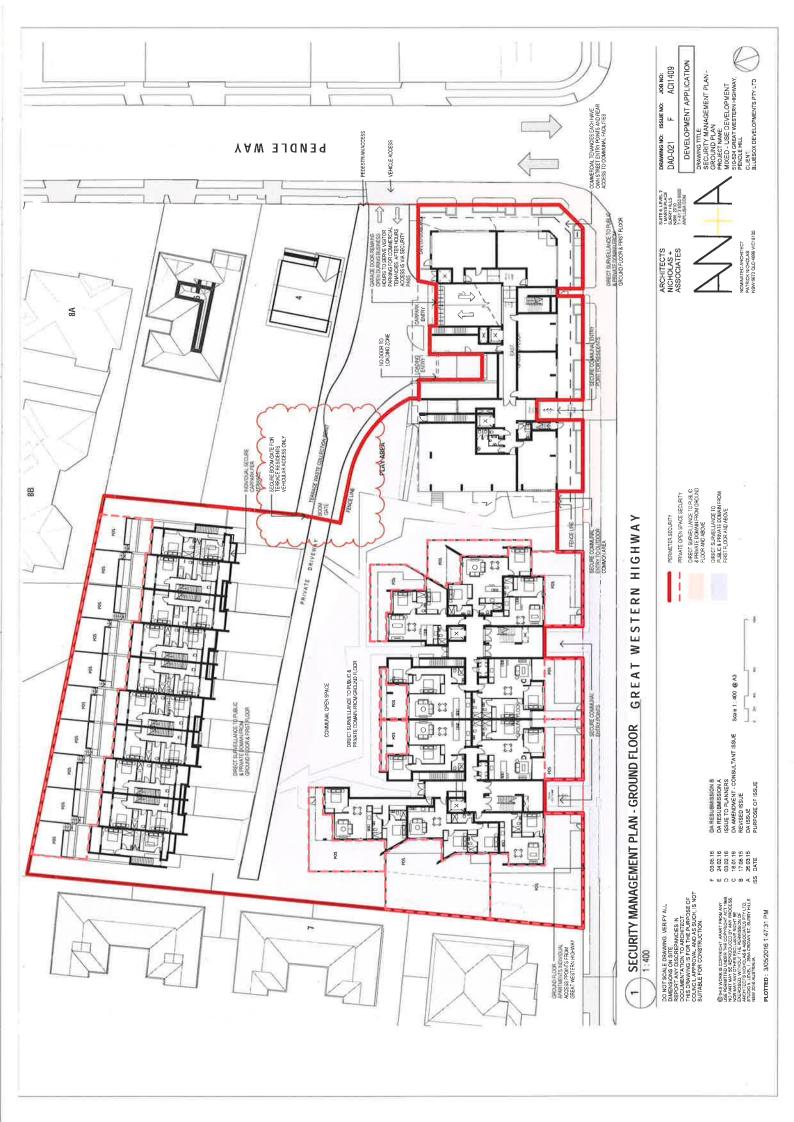
Scale 1 400 @ A3

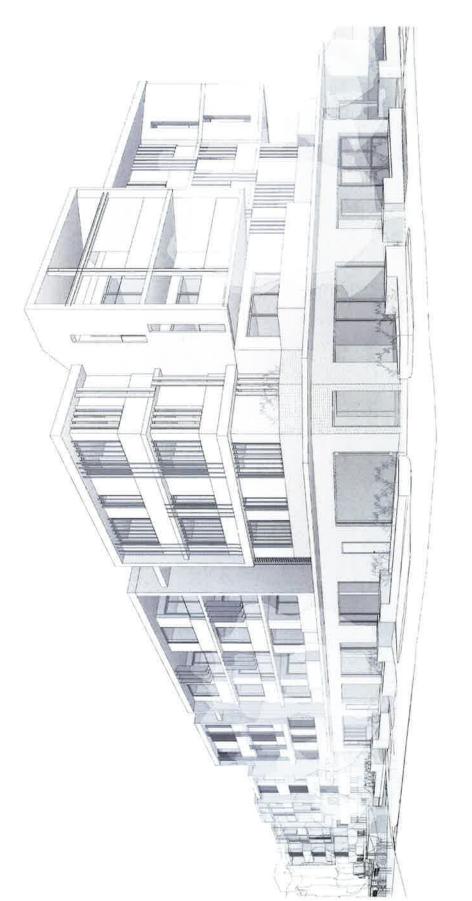
DA RESUBMISSION A ISSUE TO PALNINERS CANSULTANTS REVISED ISSUE ISSUE TO PLANIERS PURPOSE OF ISSUE ISSUE TO PLANIERS

DO NOT SCALE DRAWING VERFY ALL
DIMENSIONS ON SITE
DOCUMENTATION TO ACREPANCES IN
DOCUMENTATION TO ACREPANCE
THIS DRAWING IS FOR THE DURPOSE OF
COUNCIL MAPROVIAL AND AS SUCH, IS NOT
SUTHABLE FOR CONSTRUCTION.

PLOTTED: 29/02/2016 4:48:49 PM







PERSPECTIVE FROM CORNER OF GREAT WESTERN HIGHWAY AND PENDLE WAY TOWARDS NORTH WEST

ARCHITECTS NICHOLAS + ASSOCIATES

SUITE 6, LEVEL 2 1 MARYS PLACE SURRY HILLS NSW 2010 T+61 2 8353 9500 ANPLUSA COM

DEVELOPMENT APPLICATION DA0-100 I ACI1409

DRAWING TITLE: SITE PERSPECTIVE 1

PROJECT NAME:
MIXED - USE DEVELOPMENT
\$10524 GREAT WESTERN HIGHWAY,
PENDLE HILL
GLIENT
BLUESOX DEVELOPMENTS FTY LTD

PATRICK NICHOLAS

PLOTTED: 29/02/2016 4:49:41 PM

© THE WORK IS CADETRICH! APART FROM ANY USET WITH CHERROLICEDIA ANY PROCESS NOR MAY ANY OTHER ECCLISING RIGHT BE RECISED WITHOUT THE RESISSON OF ARCHITECTS INCIDUSE ASSOCIATES PT (TD STOOS & IRENT 1334 GROWN ST SLIRRY HILLS NORW 2010 ALBTRALLA

On RESURANSSION A FOR CONSULTANTS FOR PRICING DA MARCHANIENT CONSULTANT ISSUE ISSUE FOR REVIEW ISSUE FOR CONSULTANTS ISSUE FOR CONSULTANTS ISSUE FOR COURT REVIEW ISSUE FOR COLENT REVIEW

1 24.0216 H 02.0216 G 27.0116 E 28.0315 D 28.0215 C 10.0215 A 04.1214 ISS DATE

DO NOT SCALE DRAWING, VERIEY ALL
DIMENSIONS ON SITE
REPORT AND DISCREPANCIES IN
DOCUMENTATION TO ACCHETICAT.
THIS DRAWING IS FOR THE PURPOSE OF
COUNCIL HAS SUCH, IS NOT
SUTHABLE FOR CONSTRUCTON.



PERSPECTIVE FROM GREAT WESTERN HIGHWAY TOWARDS NORTH

SUITE 6, LEVEL 2 1 MARY'S PLACE SURNY HILLS NSW 2010 T+61 2 8353 B500 ANPLUSA COM PATRICK NICHOLAS ARCHITECTS NICHOLAS + ASSOCIATES

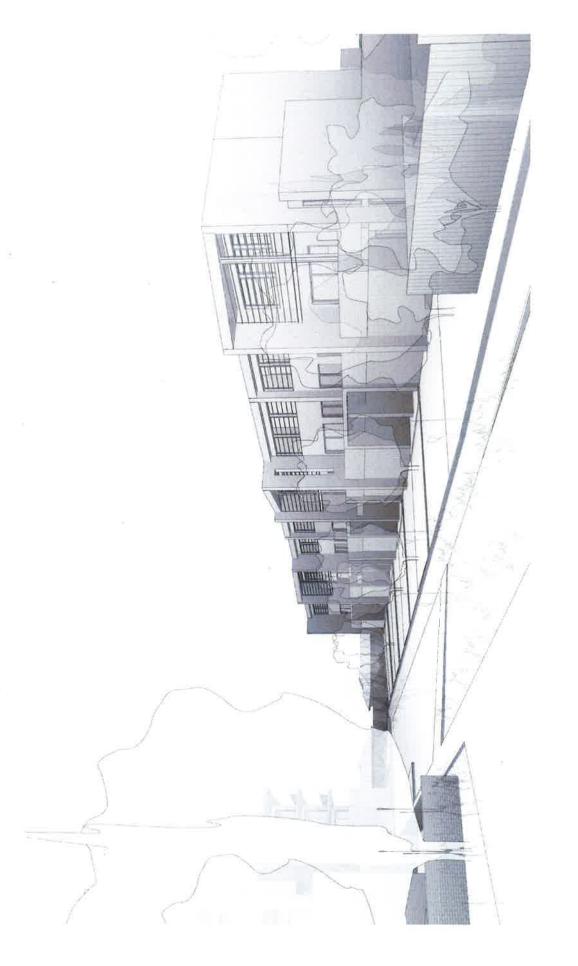
DEVELOPMENT APPLICATION DA0-101 H ACI1409

DRAWING TITLE SITE PERSPECTIVE 2

PROJECT NAME:
MIXED: USE DEVELOPMENT
\$10.524 GREAT WESTERN HIGHWAY,
PENDLE HILL
GLIENT,
BLUESOX DEVELOPMENTS PTY LTD

H 240216 G 020216 F 270116 E 180116 C 100215 C 100215 A 041214 ISS DATE DO NOT SCALE DRAWING VERIFY ALL
DIMENSIONS ON SITE
REPORT ANY DISCREPANCIES IN
DOCUMENTATION TO AGAILTIC.T
THIS DRAWING IS FOR THE PURPOSE OF
COUNCIL PARFOCAL, AM AS SUCH, IS NOT
SUTMBLE FOR CONSTRUCTON.

PLOTTED: 29/02/2016 4:49:53 PM



PERSPECTIVE FROM PRIVATE DRIVEWAY TOWARDS NORTH WEST

ARCHITECTS NICHOLAS + ASSOCIATES

DEVELOPMENT APPLICATION DA0-102 E ACI1409

DRAWNG TITLE SITE PERSPECTIVE 3

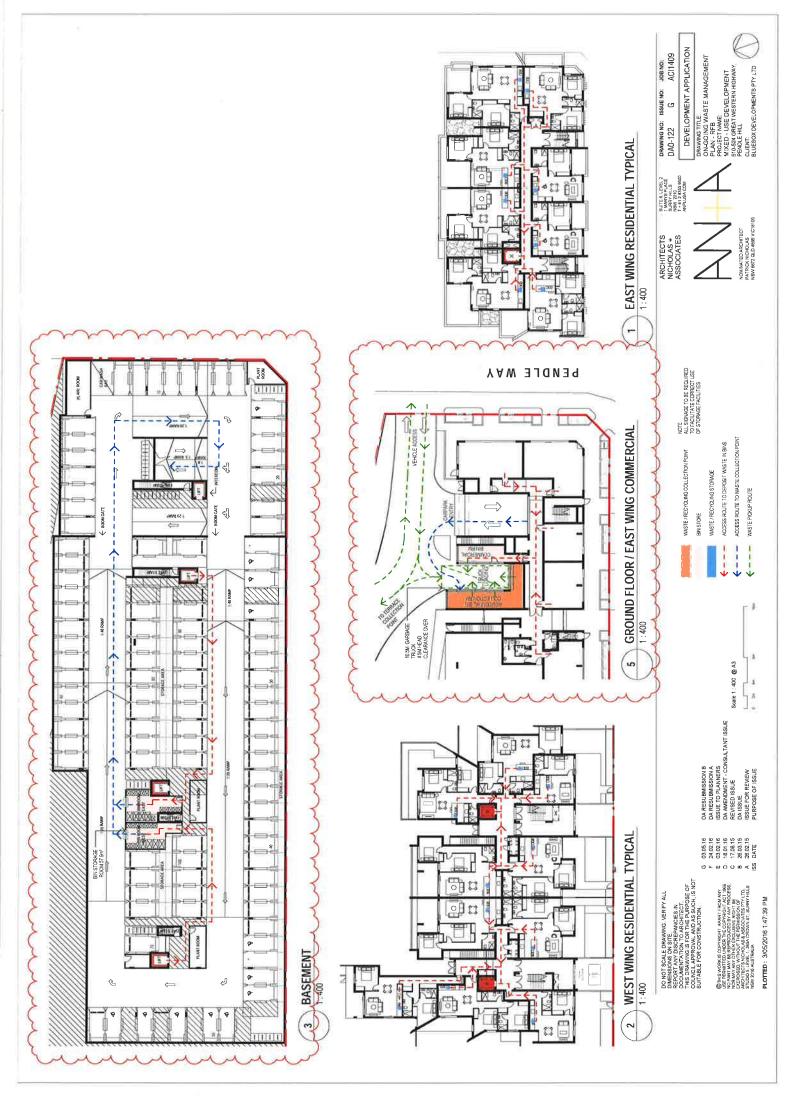
PROJECT NAME:
MIXED - USE DEVELOPMENT
510-524 GREAT WESTERN HIGHWAY,
PENDLE HILL
GLUENT:
BLUESOX DEVELOPMENTS PTY LTD

DA RESUBMISSION A FOR CONSULTANTS FOR PRICING DA AMENDMENT - CONSULTANT ISSUE DA ISSUE PURFOSE OF ISSUE

E 2402.16 D 02.02.16 C 27.01.16 B 18.01.16 A 26.03.15 ISS DATE

DO NOT SCALE DRAWING VERFY ALL DMENSIONS ON SITE DOCUMENTATION TO ACKEPHACES IN THE DRAWING IS FOR THE PURPOSE OF COUNCLI HAP ROMAL AM AND AS UCH, IS NOT SUTHABLE FOR CONSTRUCTION.

PLOTTED: 29/02/2016 4:50:03 PM





ONGOING WASTE MANAGEMENT PLAN - TERRACES

WASTE / RECYCLING COLLECTION POINT

WASTE / RECYCLING STORAGE

ACCESS ROUTE TO DEPOSIT WASTE IN BINS

Scale 1 100 @ A3

DA RESUBMISSION B PURPOSE OF ISSUE

A 030516 ISS DATE

PLOTTED: 3/05/2016 1:47:41 PM

DO NOT SCALE DRAWING VERIFY ALL
DIMENSIONS ON SITE
DECUMENTATION TO ACCOUNT THE DRAWING SET THE DRAWING SET THE DRAWING SET OF THE PURPOSE OF
SOUNCE HAT PROPASA, AM DAS SUCH, IS NOT
SUTHABLE FOR CONSTRUCTION

WASTE PICKUP ROUTE

ACCESS ROUTE TO WASTE COLLECTION POINT

DEVELOPMENT APPLICATION

DA0-123 A ACI1409

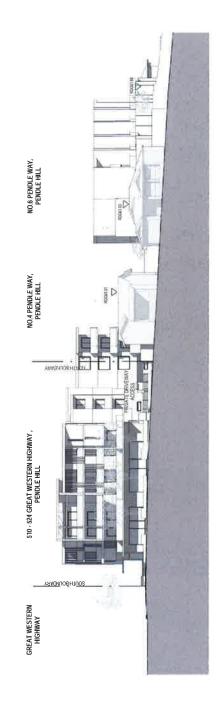
ARCHITECTS NICHOLAS + ASSOCIATES

DRAWING TITLE.
ONGOING WASTE MANAGEMENT.
TERRACES
PROJECT NAME:
MIXED - USE DEVELOPMENT
SIOSZA GESTA VESTERN HIGHWAY.
PROJE HILL

CLIENT: BLUESOX DEVELOPMENTS PTY LTD



1 ELEVATION - GREAT WESTERN HWY

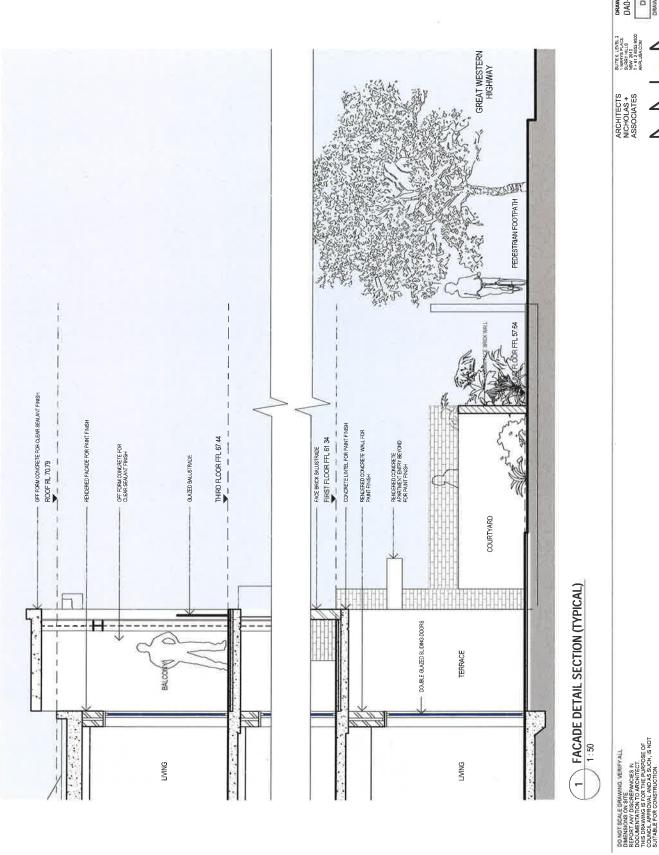


2 ELEVATION - PENDLE WAY

Scale 1:400 @ A3 5, DA REQUBANISSION A
DA MAIENMAINT - CONSULTANT ISSUE
REVISED ISSUE
DA 183UE
ISSUE FOR REVIEW
ISSUED FOR REVIEDA
PURPOSE OF ISSUE DO NOT SCALE DRAWING VERIFY ALL
DIMENSIONS ON SITE
DECUMENTATION TO ACCHECATE
THIS DRAWING IS OF THE DIRPOSE OF
THIS DRAWING IS OFF THE PURPOSE OF
SUITIABLE FOR CONSTRUCTION PLOTTED: 29/02/2016 4:50:25 PM

DEVELOPMENT APPLICATION DRAWING NO: JOB NO: DA0-150 F ACI1409 DRAWING TITLE: ELEVATIONS ARCHITECTS NICHOLAS + ASSOCIATES

PROJECT NAME MIXED - USE DEVELOPMENT S10-224 GREAT WESTERN HIGHWAY, PENDLE HILL CLIENT: BLUESOX DEVELOPMENTS PTY LTD



D 240216 C 180116 B 260315 A 260215 ISS DATE

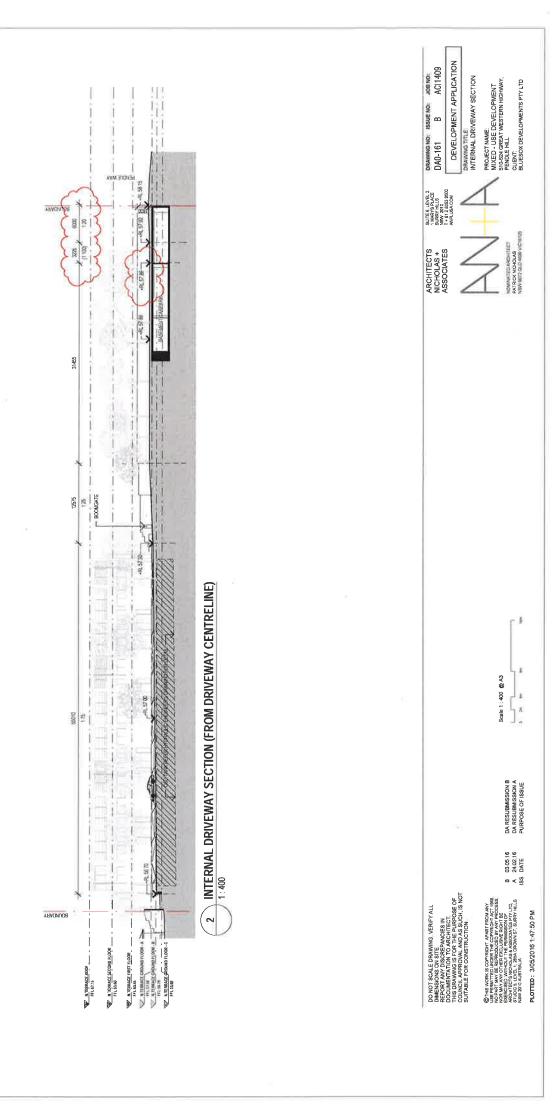
PLOTTED: 29/02/2016 4:50:26 PM

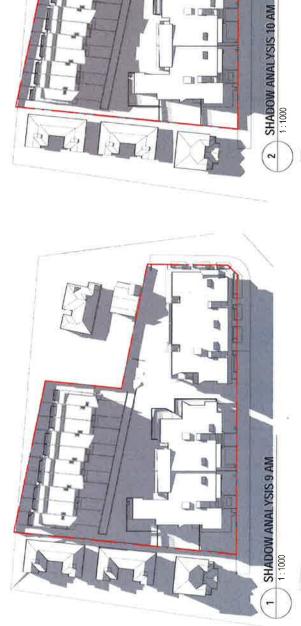
DA AREKDIMENSON A
DA AMENDIMENT - CONSULTANTI ISSUE
Scale 1: 50 @ A3
DA ISSUE
ISSUE FOR KENEW
FUNDOSE OF ISSUE

DEVELOPMENT APPLICATION DAO-160 D ACI1409

DRAWING TITLE FACADE DETAIL SECTION (TYPICAL)

PROJECT NAME:
MIXED - USE DEVELOPMENT
S10-624 GREAT WESTERN HIGHWAY,
PENULE HILL
CLIENT.
BLUESOX DEVELOPMENTS PTY LTD

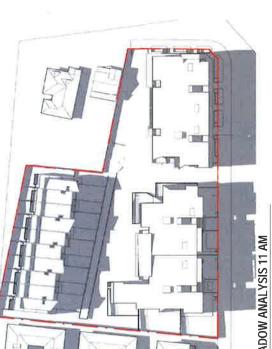




U

1:1000





3 SHADOW ANALYSIS 11 AM

DO NOT SCALE DRAWING. VERIFY ALL
DIMERSIONS ON SITE
REPORT ANY DISCREPANCIES IN
DECUMENTATION TO AGAINED TO
THIS DRAWING IS GOT THE PURPOSE OF
COUNCIL PREPORAL, AM AS SUCH, IS NOT
SUTHABLE FOR CONSTRUCTION.

24.02.16 18.01.16 D 28.03.15 C 10.02.15 B 05.12.14 A 04.12.14

DA RESUBMISSION A
DA MRHOMENT. CONSULTANT ISSUE
DA ISSUE
ISSUE FOR CONSULTANTS
ISSUE FOR CONSULTANT REVIEW
ISSUE FOR CONSULANT REVIEW
PURPOSS OF ISSUE

Scale 1:500 @ A3 5.

PROJECT NAME: MIXED - USE DEVELOPMENT 510-524 GREAT WESTERN HIGHWAY, PENDLE HILL CLIENT: BLUESOX DEVELOPMENTS PTY LTD

DEVELOPMENT APPLICATION

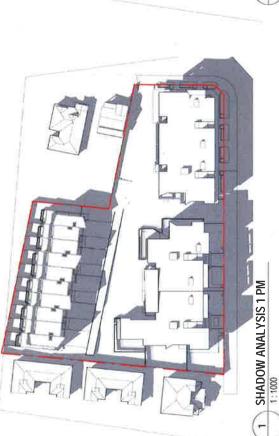
DRAWING TITLE SHADOW DIAGRAMS

DRAWING NO: ISSUE NO: JOB NO: DA0-170 F ACI1409

SUITE 6 LEVEL 2 1 MARYS PLACE SURRY HILLS NSW 2010 T+61 2 8353 9500 ANPLUSA COM

ARCHITECTS NICHOLAS + ASSOCIATES

PLOTTED: 29/02/2016 4 50:57 PM







SHADOW ANALYSIS 4 PM

3 SHADOW ANALYSIS 3 PM

SHADOWS PROJECTED FOR JUNE 22 - WINTER SOLSTICE

ARCHITECTS NICHOLAS + ASSOCIATES

DEVELOPMENT APPLICATION DA0-171 F ACI1409 DRAWING TITLE: SHADOW DIAGRAMS

PROJECT NAME.
MIXED. USE DEVELOPMENT
510-524 GREAT WESTERN HIGHWAY,
PRINCE HILL
CLIENT
BLUESOX DEVELOPMENTS PTY LTD

DO NOT SCALE DRAWING VERIFY ALL
DIMENSIONS ON SITE
DECOMENTATION TO ACCEPTING IN
DECOMENTATION TO ACCHITECT
THIS DRAWING IS FOR THE PURPOSE OF
COUNCIL PAPEROLAL AND AS SUCH, IS NOT
SUITIAGLE FOR CONSTRUCTION

PLOTTED: 29/02/2016 4:51:14 PM

DA RESUBMISSION A
DA MARCOMENTANT ISSUE
DA MISSUE
ISSUE FOR CONSULTANT'S
ISSUE FOR CONSULTANT'S
ISSUE FOR CONSULTANT REVIEW
ISSUE FOR CLIENT REVIEW
PURPOSE OF ISSUE

Scale 1:500 @ A3













TL 1 BALCONY TILES

PT 2 PAINT 'DRY GOODS'

PT 1 PAINT 'NATURAL WHITE

BR 1 BLACK & BLUE GLAZED BRICK

RC 1 OFF FORM'GREY'









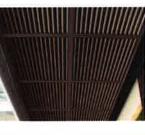
D 1 GARAGE DOOR











AL 2 HORIZONTAL 'BRONZE' ANODIZED ALUMINUM LOUVERS



AL 3 BLACK ALUMINUM DOORS AND WINDOWS



G GLASS BALUSTRADE



SUITE 6. LEVEL 2 1 MARYS PLACE SURRY HILLS NSW 2010 T + 61 2 8363 9500 ANPLUSA COM ARCHITECTS NICHOLAS + ASSOCIATES

NOMINATED ARCHITECT
PATROC WOLKING
WITH ONLY CLD 4650 VCTRIDS

DEVELOPMENT APPLICATION
DRAWING TITLE:
EXTERNAL FINISHES SCHEDULE

DA0-952 G ACI1409

PROJECT NAME: MIXED - USE DEVELOPMENT 510-524 GREAT WESTERN HIGHWAY, PENDLE HILL

CLIENT: BLUESOX DEVELOPMENTS PTY LTD

Des wordt is doornong in deep too de de

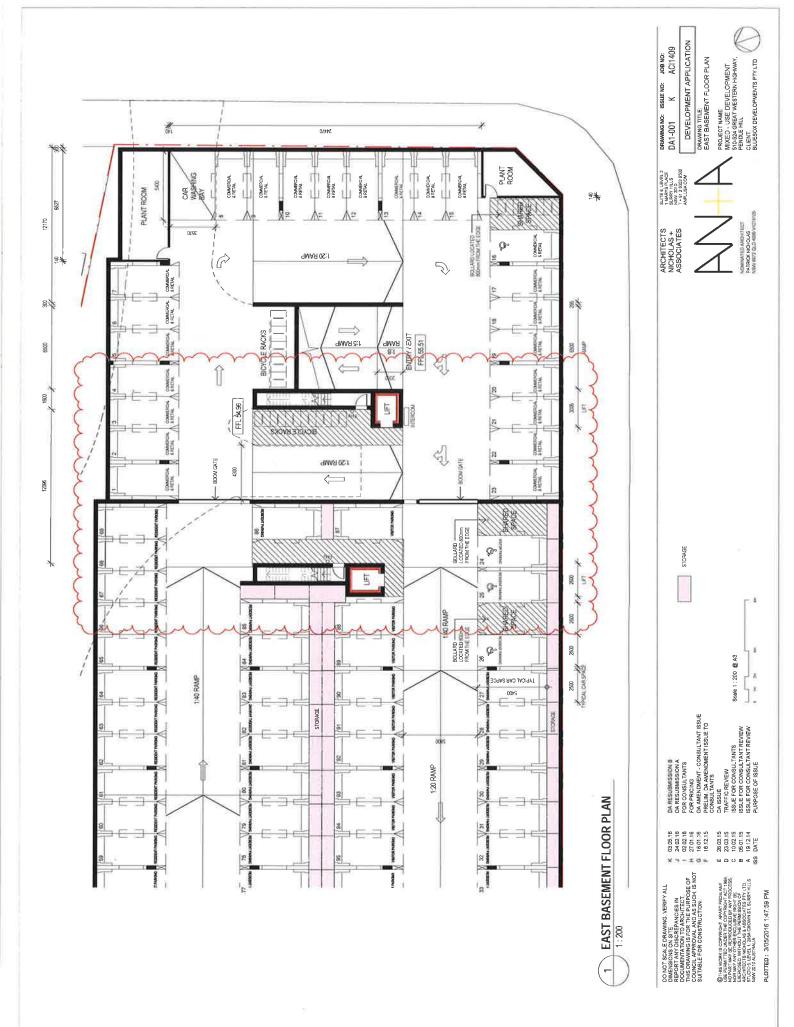
PLOTTED: 21/07/2016 3:19:25 PM

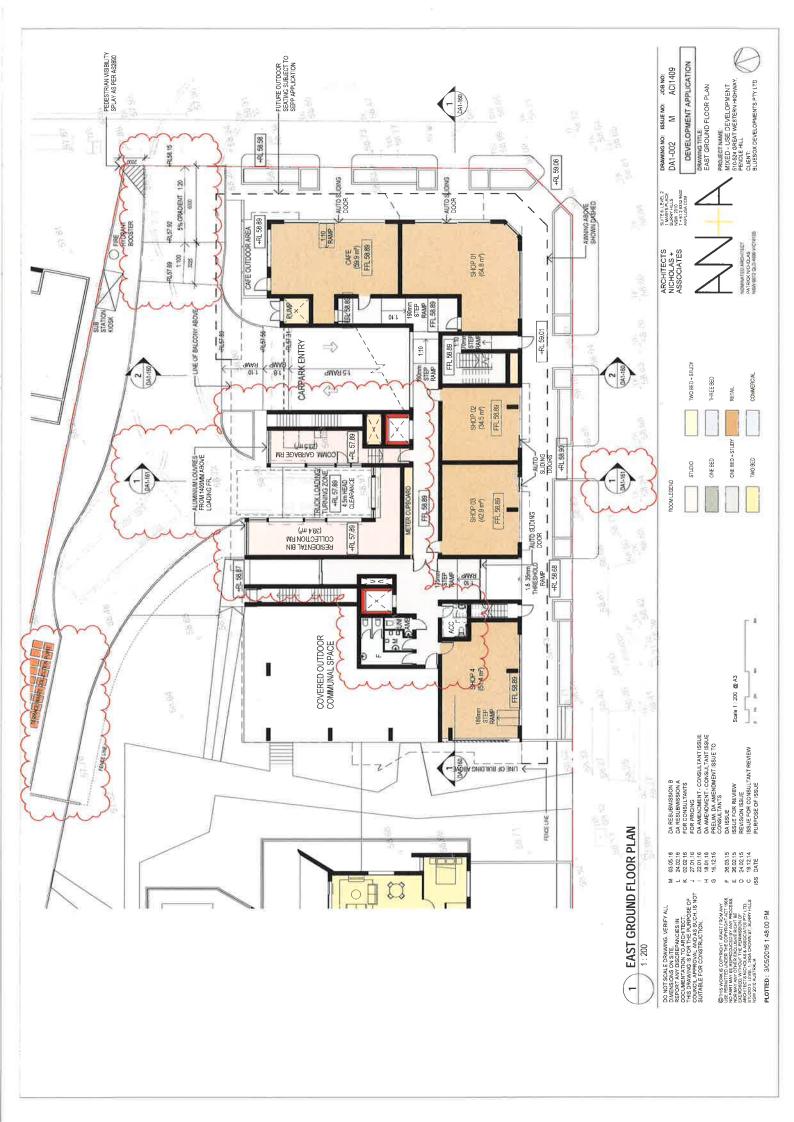
Scale 1:100 @ A3 , i

DA ADDENDUM A
DA RESUBMISSION A
POR PRICING
DA MARHOMENT - CONSULTANT ISSUE
DA MISSUE
ISSUE FOR MODEL WAKER
ISSUE FOR MODEL WAKER
ISSUE FOR WODEL WAKER
ISSUE FOR WODEL WAKER
PURPOSE OF ISSUE

G 200716 F 240216 D 180116 C 260315 B 120315 A 040315 ISS DATE

DO NOT ECALE DRAWING, VERIEY ALL
DIMENSORS ON SITE
REPORT ANY DISCREPANCIES IN
DOCUMENTATION TO ACHITECT
THIS DRAWING IS FOR THE PURPOSE OF
COUNCIL PREPORVAL AND SA SUCH, IS NOT
SUTHABLE FOR CONSTRUCTION.

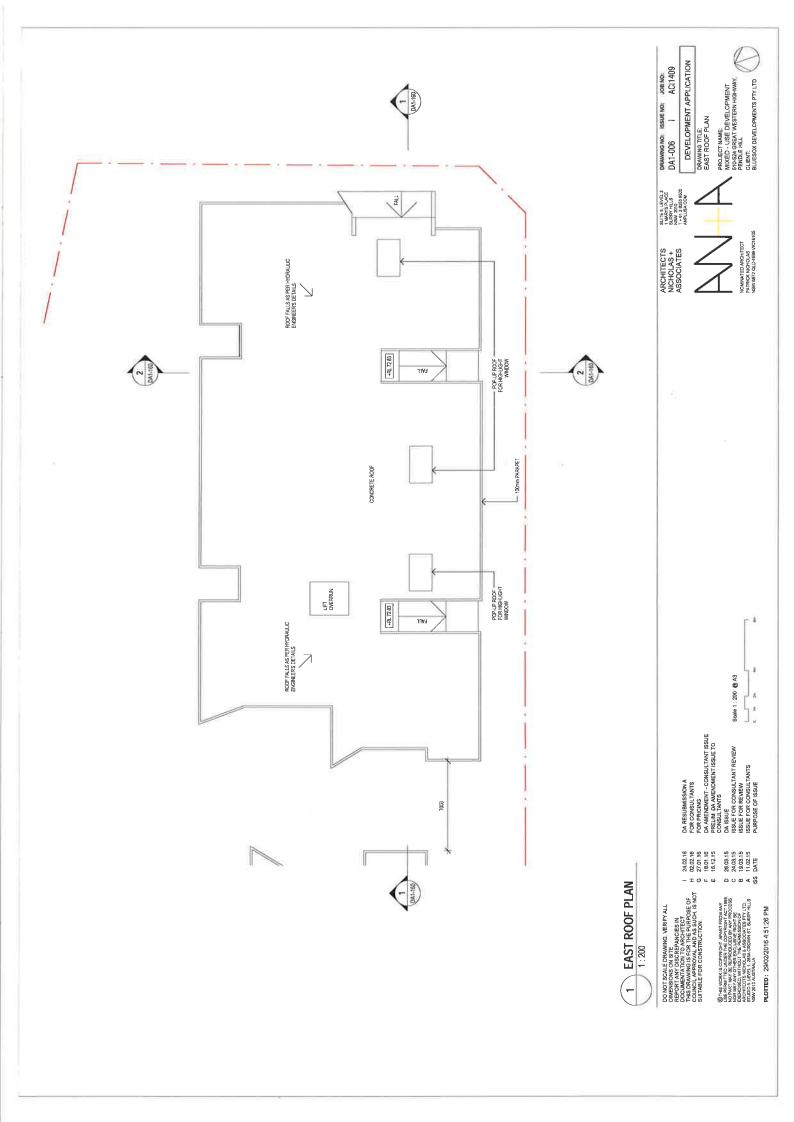


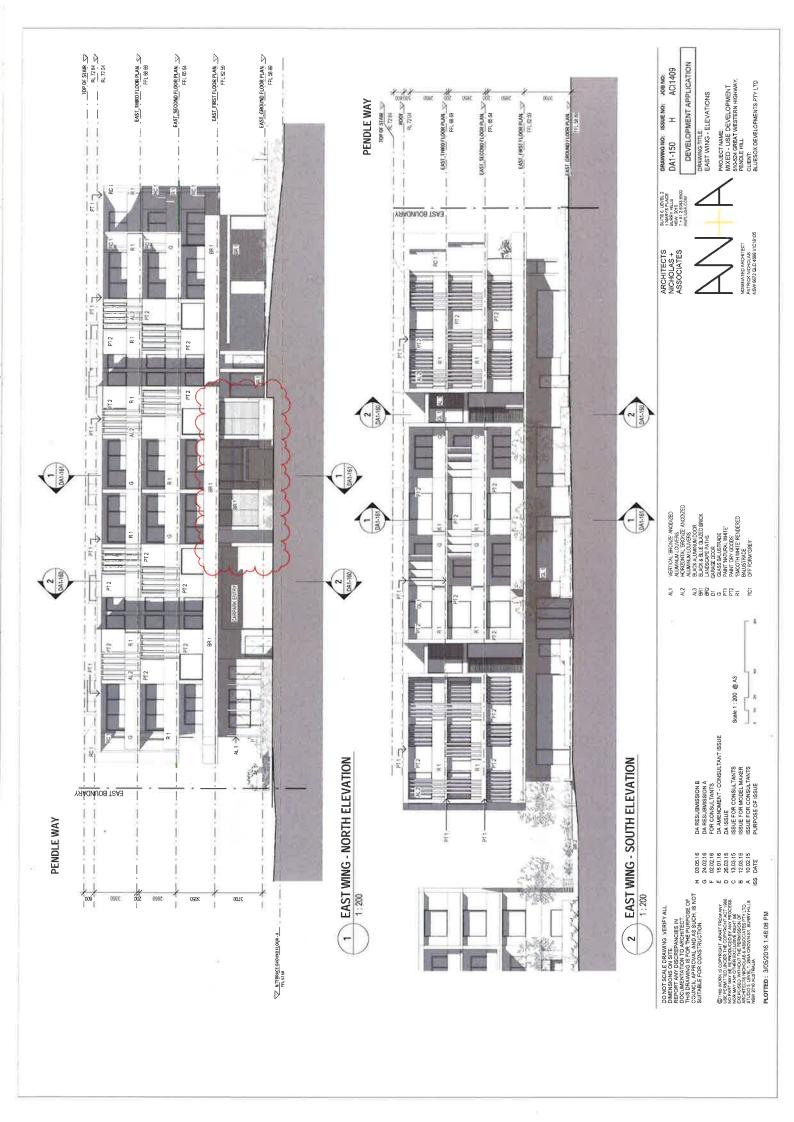


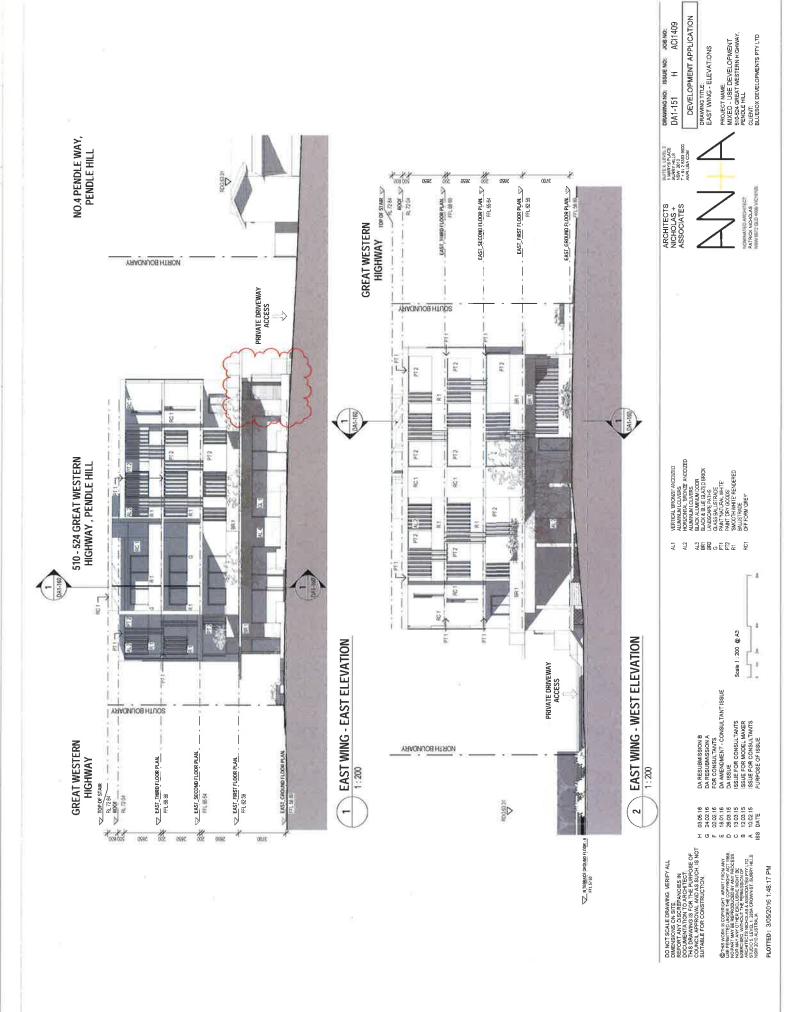


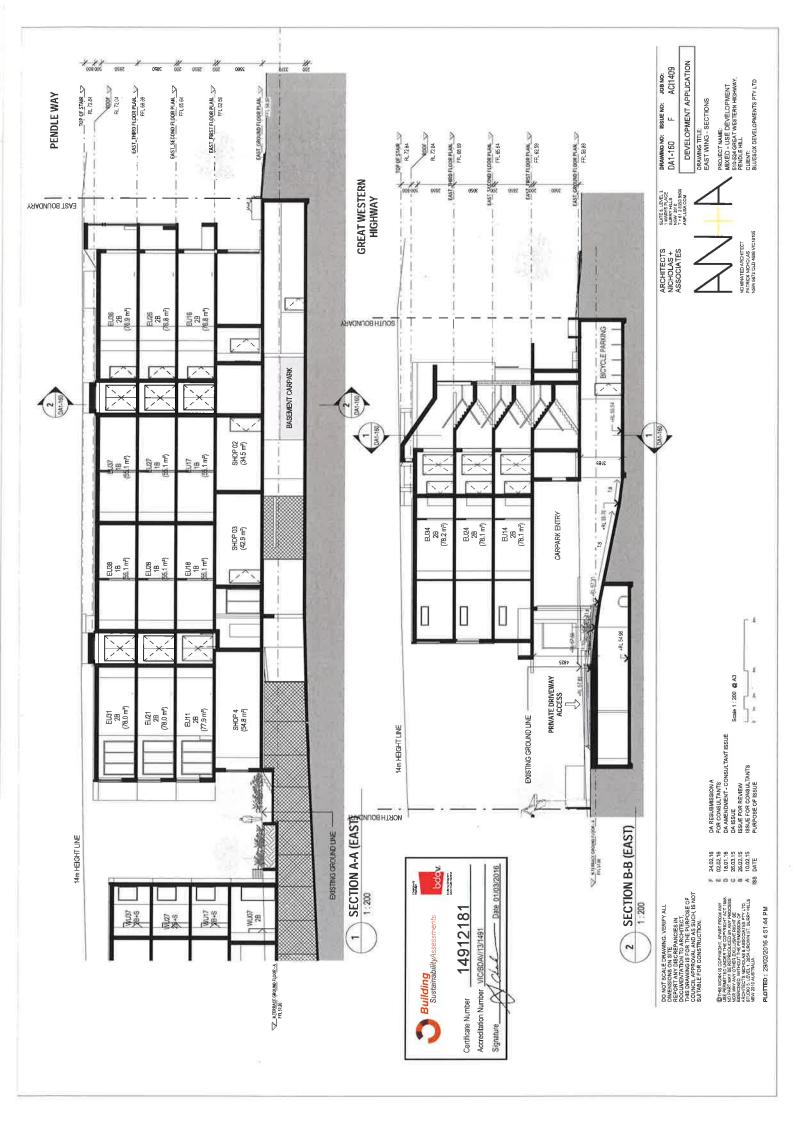


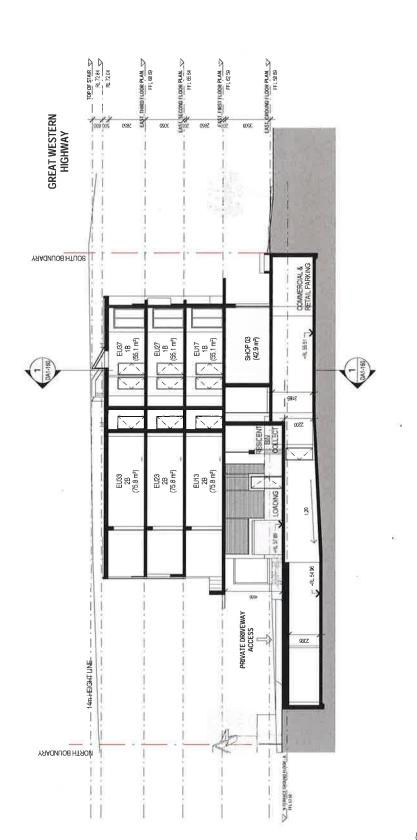












SECTION E-E (EAST LOADING)
1: 200

DO NOT SCALE DRAWING VERIFY ALL DIMENSIONS ON SITE DOCUMENTATION TO NACHERCH THIS DRAWING IS FOR THE PURPOSE OF COUNCIL PARPONAL AM DAS SUCH, IS NOT SUTRBLE FOR CONSTRUCTION

A 03.05.16 ISS DATE Degree Work COPPINGLY HOUSE DO PRET MET BY DESPENDED TO BE NO PRET WITH STATE OF THE PACE TO BE NOR MAY WAY OTHER DOLLSING SIGHT BE RECKSED WHITHOUT IT HE RESIDENCY RECKSED WHITHOUT IT HE RESIDENCY RECKSED WHITHOUT IT BY STATE OF THE STATE OF THE

PLOTTED: 3/05/2016 1:48:17 PM

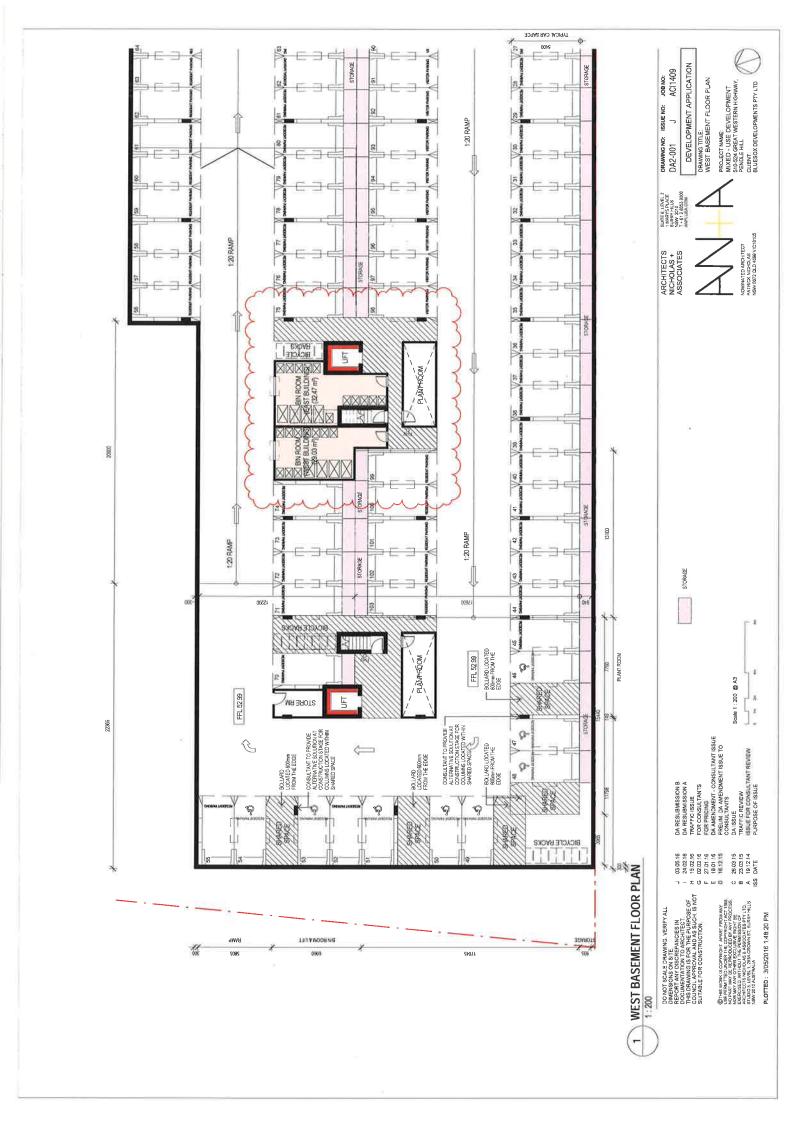
Scale 1:100 @ A3 1 4 m

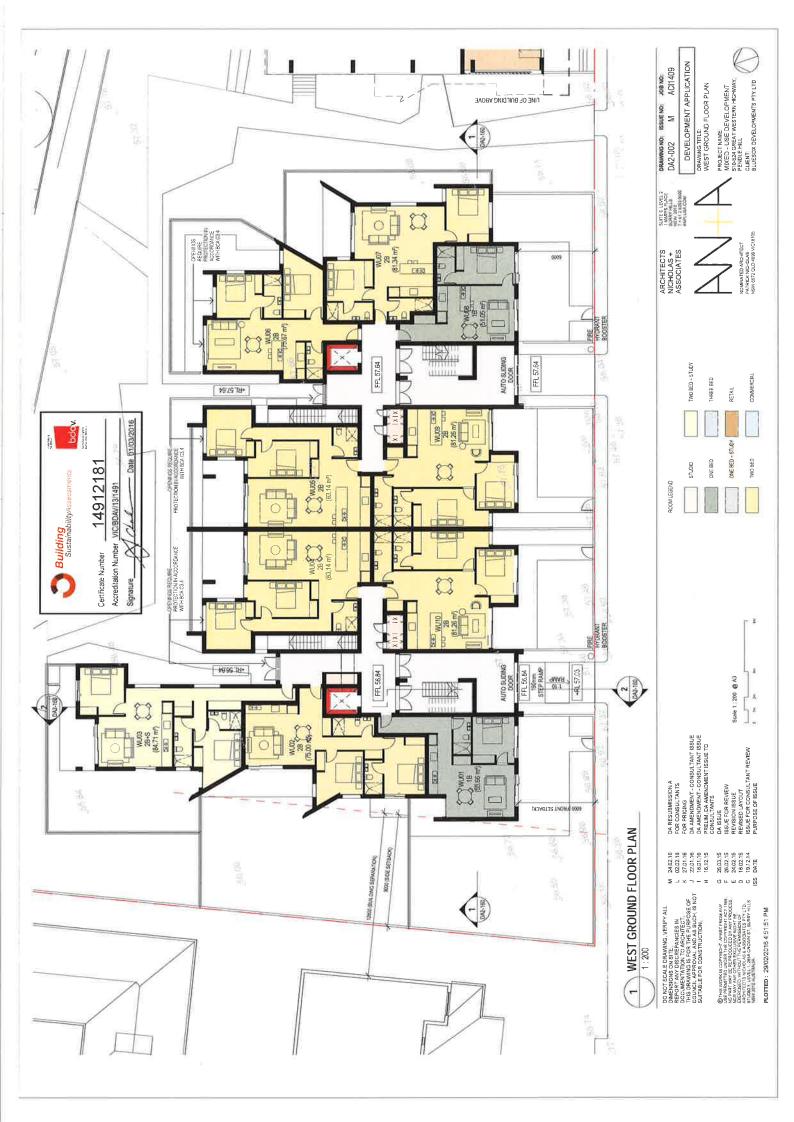
DA RESUBMISSION B PURPOSE OF ISSUE

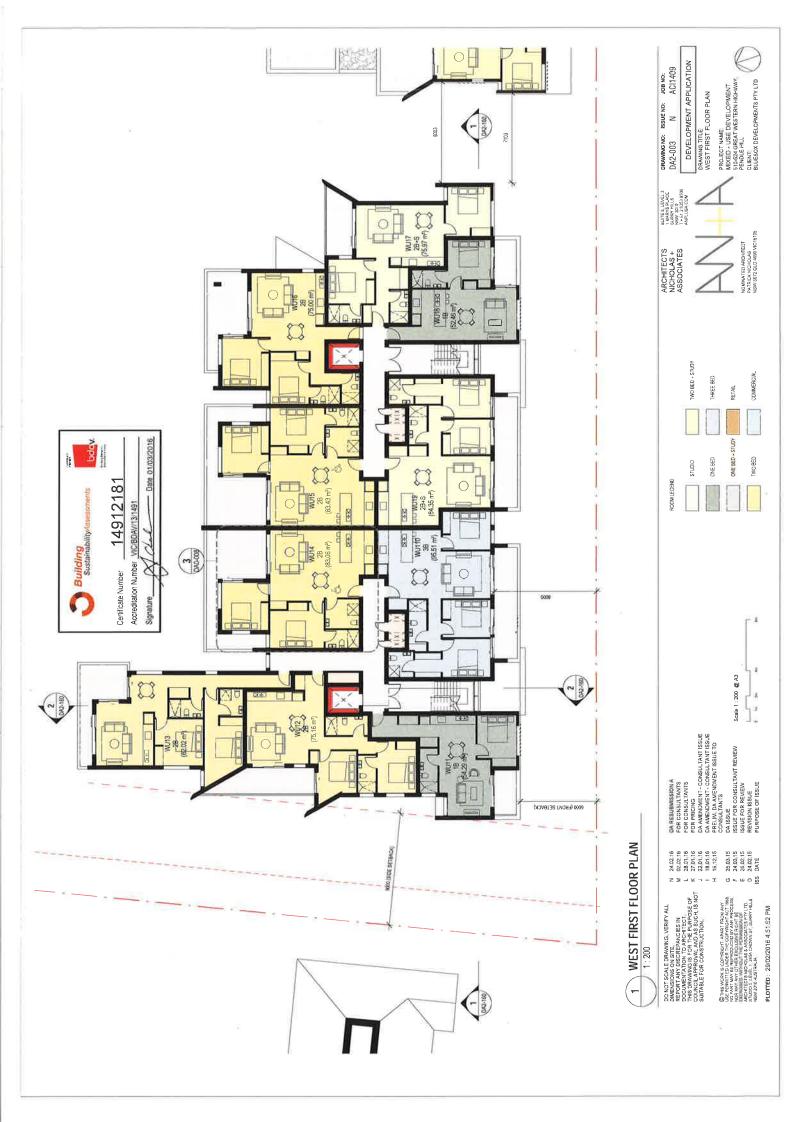
ARCHITECTS NICHOLAS + ASSOCIATES

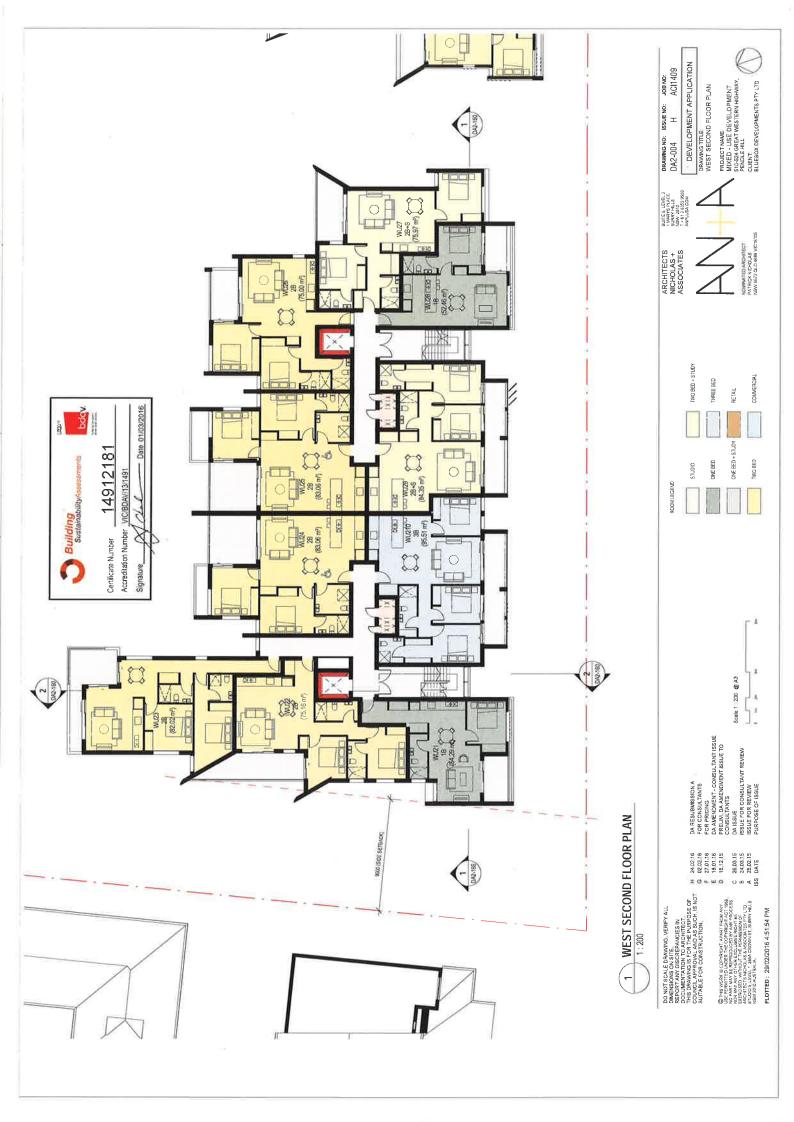
DEVELOPMENT APPLICATION DRAWING NO: ISSUE NO: JOB NO: DA1-161 A ACI1409 DRAWING TITLE: EAST WING - SECTIONS

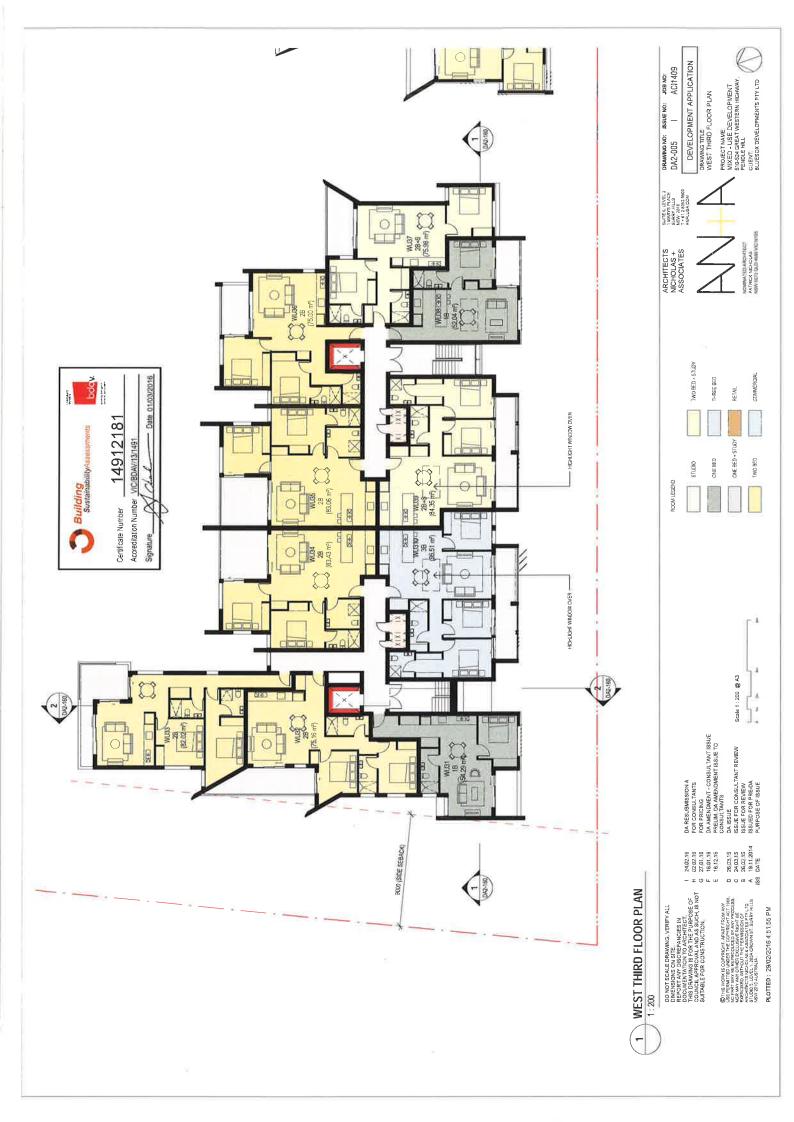
PROJECT NAME.
MIXED. USE DEVELOPMENT
S10-624 GREAT WESTERN HIGHWAY.
PENDLE HILL
CLIENT
BLUESOX DEVELOPMENTS PTY LTD

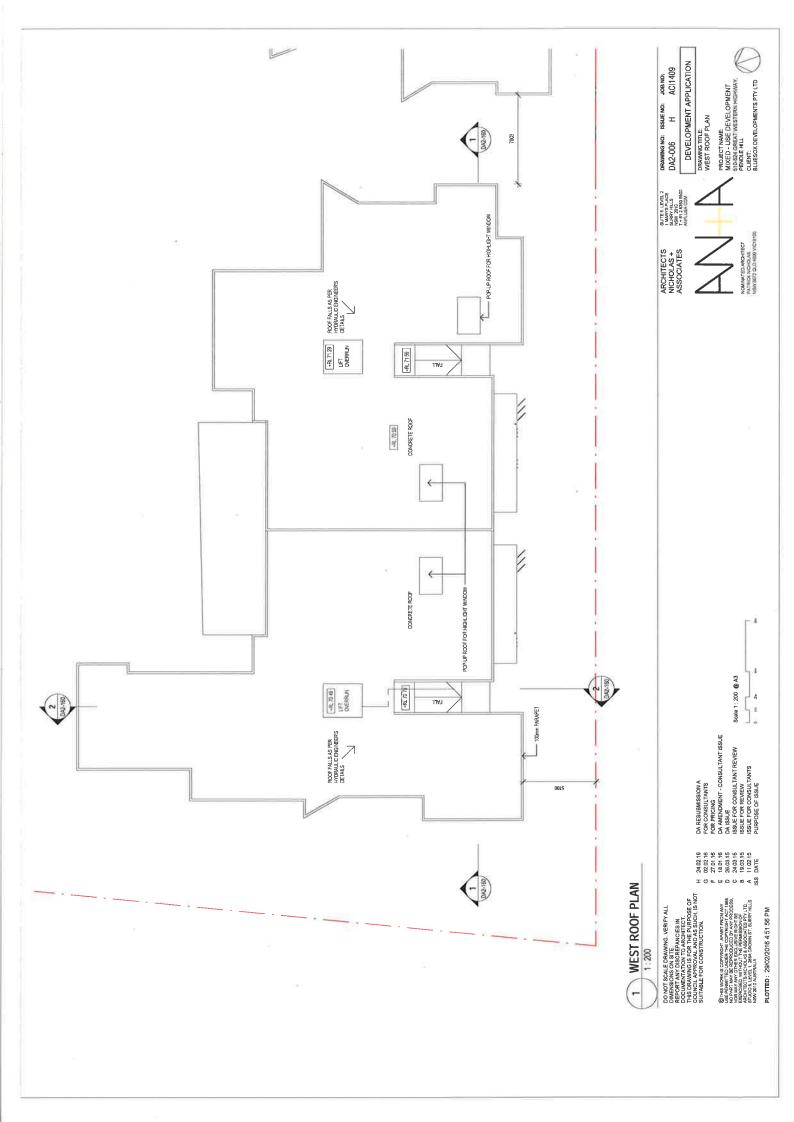


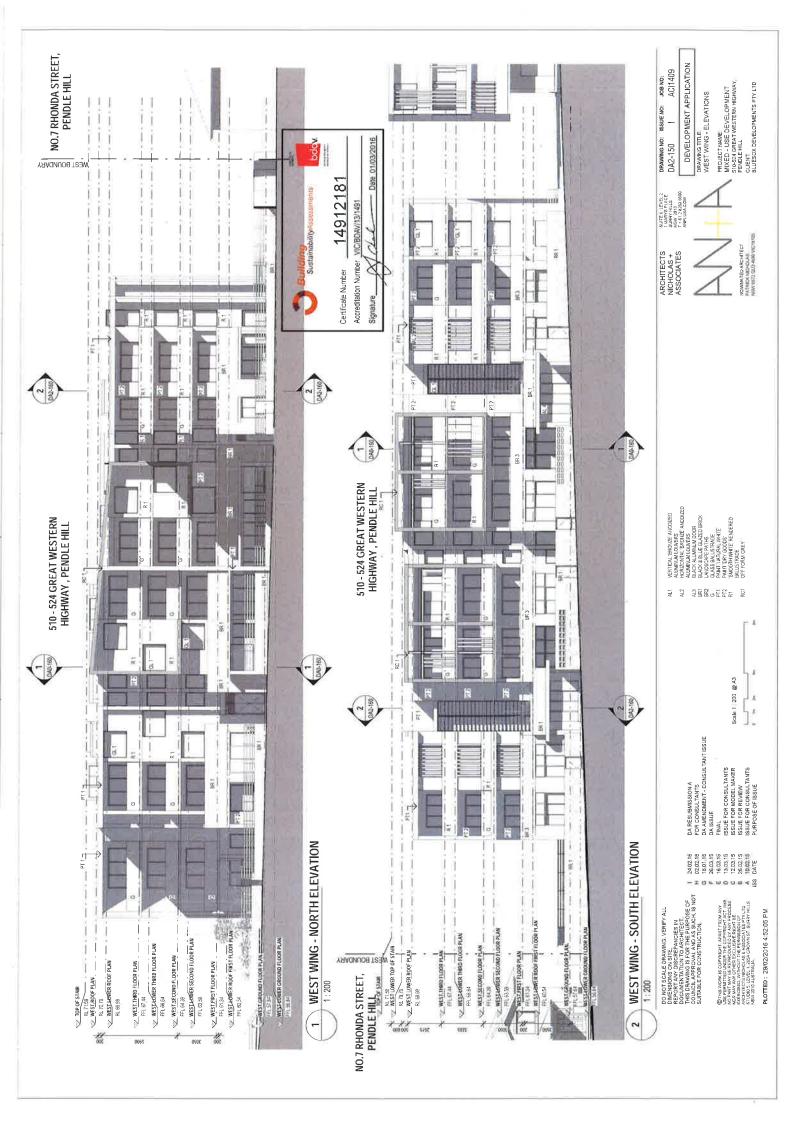


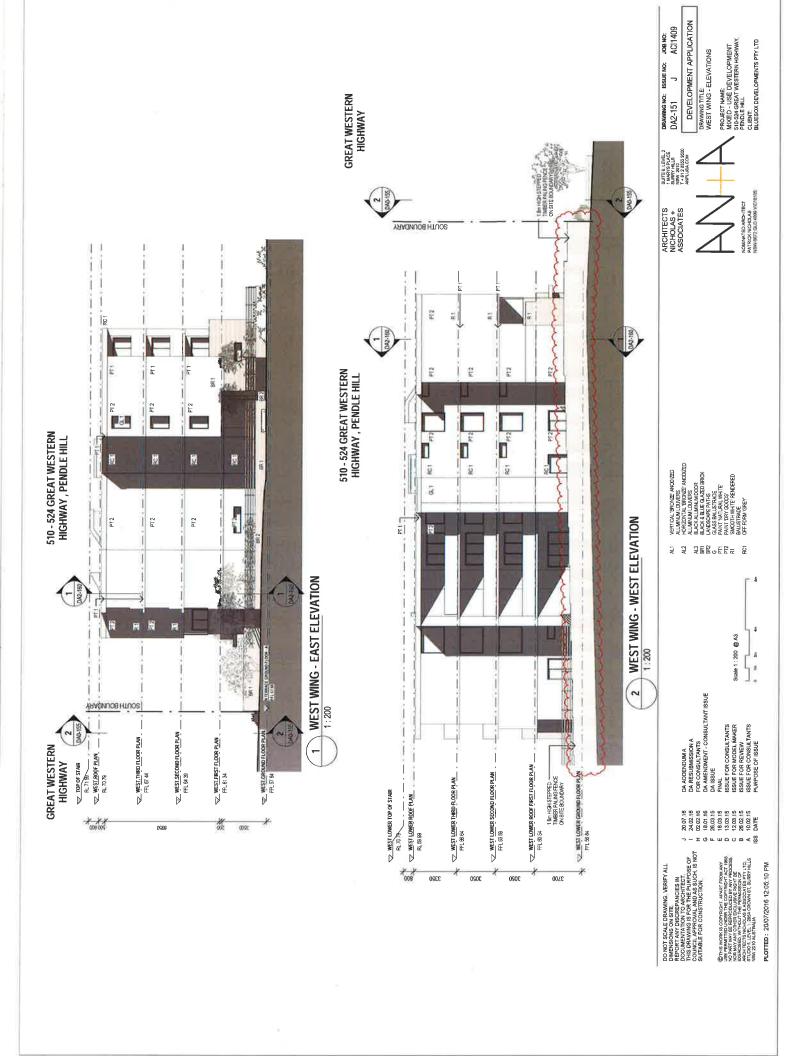


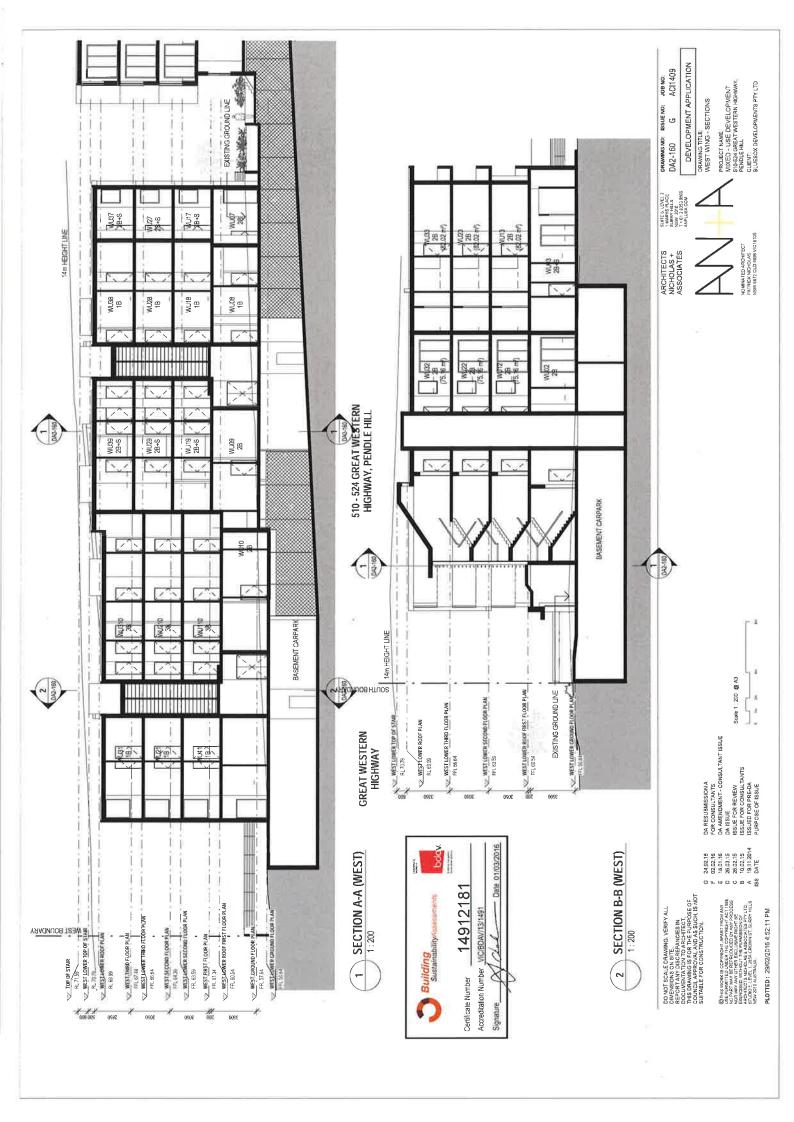










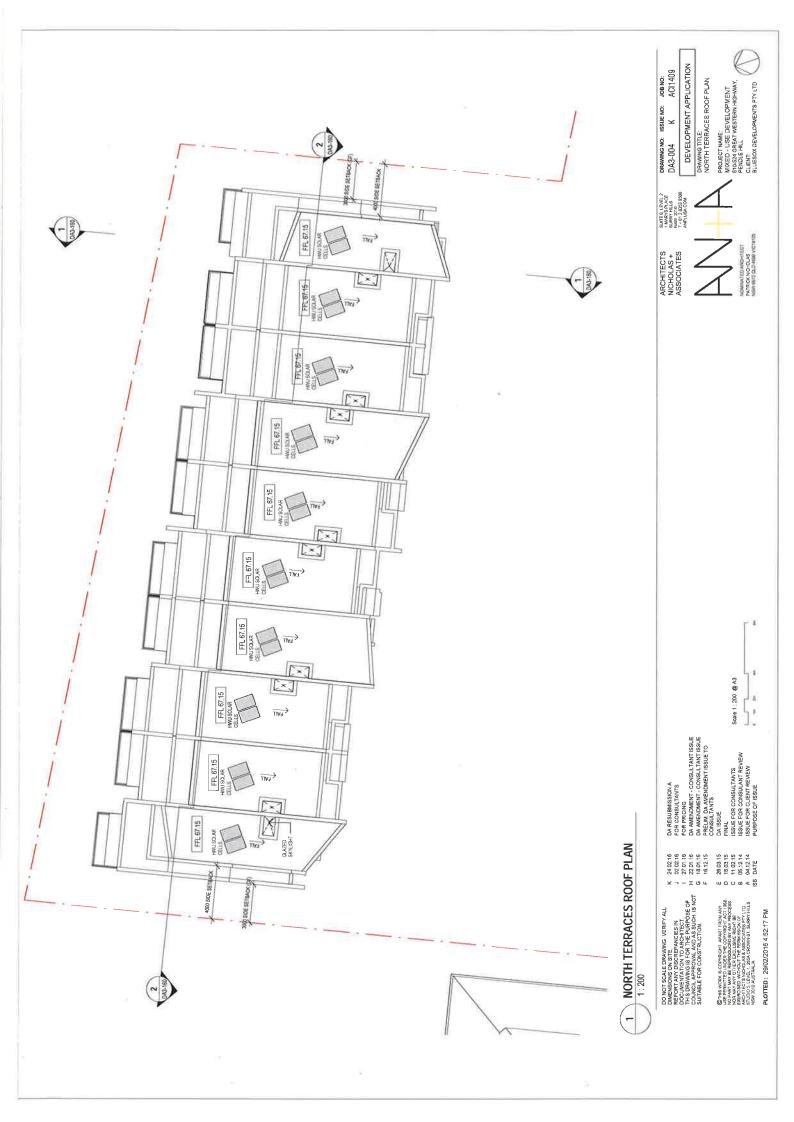


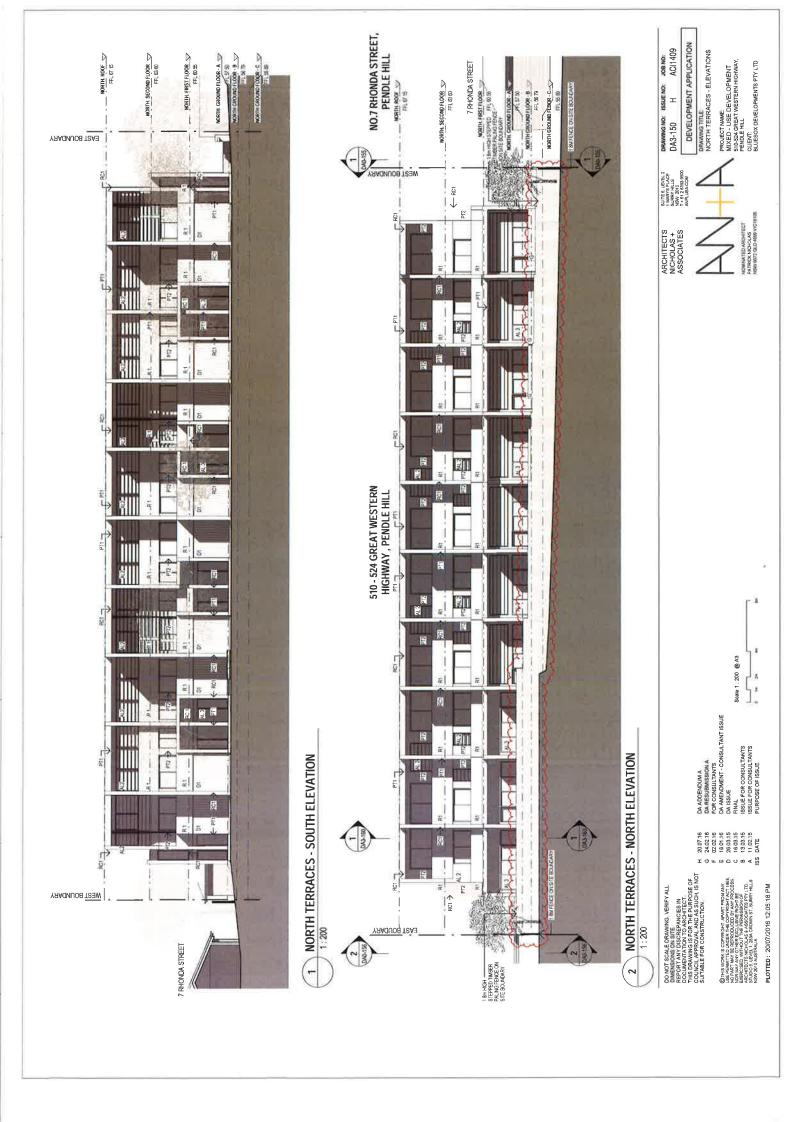


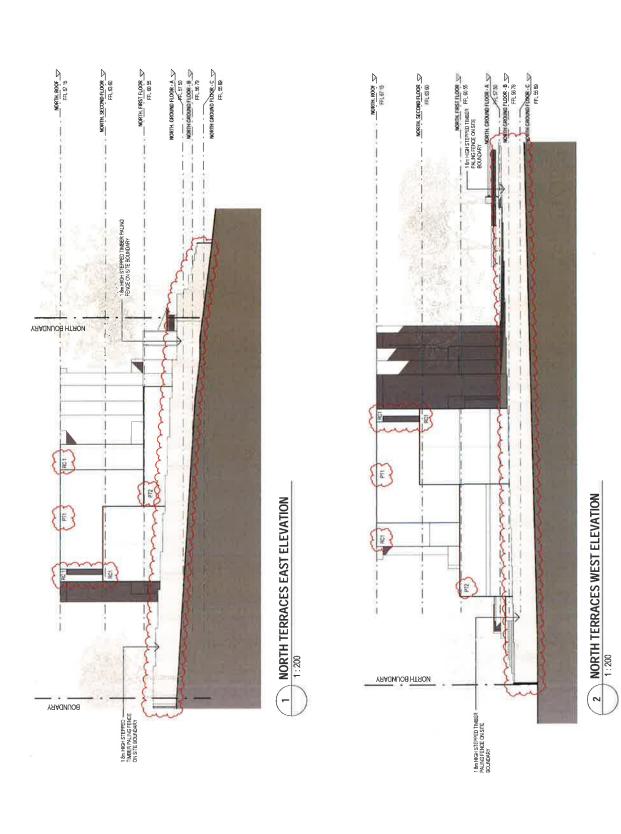
PLOTTED: 29/02/2016 4:52:13 PM



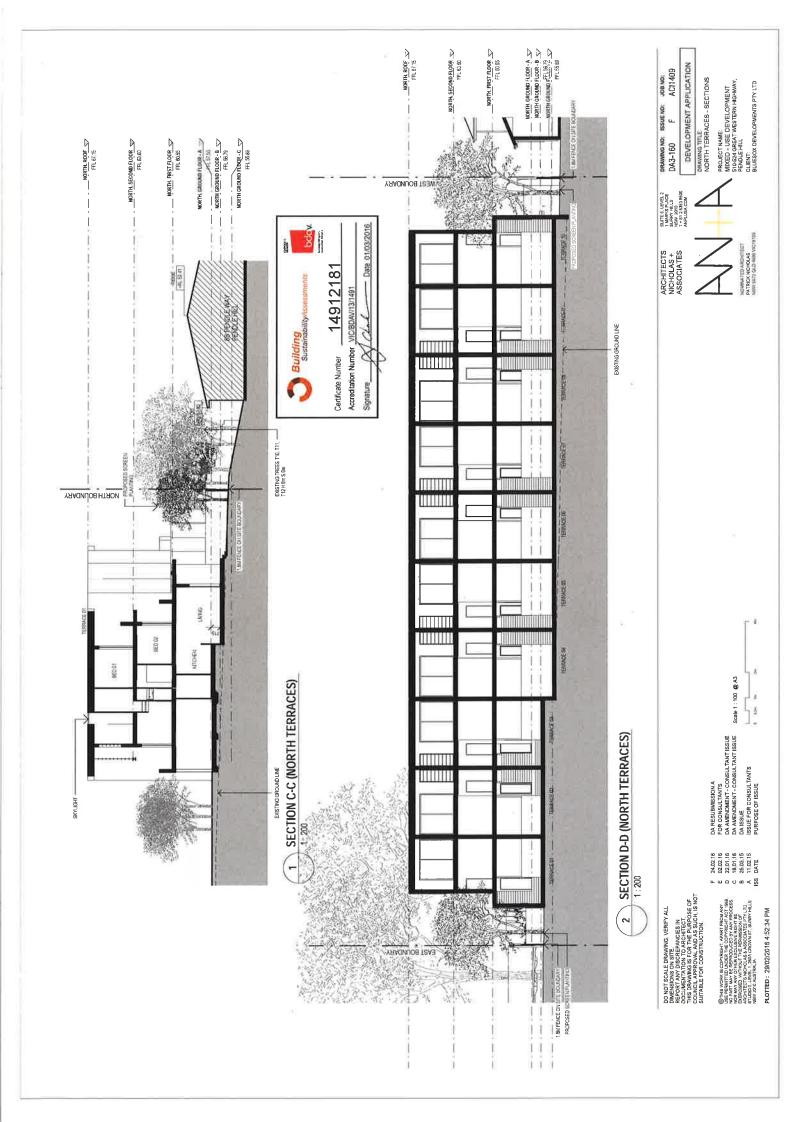








DEVELOPMENT APPLICATION DA3-151 H ACI1409 DRAWING TITLE: NORTH TERRACES - ELEVATIONS PROJECT NAME: MIXED - USE DEVELOPMENT 510-224 GREAT WESTERN HIGHWAY, PENDLE HILL CLIENT: BLUESOX DEVELOPMENTS PTY LTD SUITE 6, LEVEL 2 1 MARYS PLACE SURRY HILLS NSW 2010 T * 612 8539 9500 ANPLUSA COM ARCHITECTS NICHOLAS + ASSOCIATES Scale 1:200 @ A3 DA ADDENDUM A
DA REGUBMISSION A
FOR CONSULTANTS
DA AMENDMENT - CONSULTANT ISSUE
DA ISSUE FINAL ISSUE FOR CONSULTANTS ISSUE FOR CONSULTANTS PURPOSE OF ISSUE H 2007.16 G 2402.16 F 02.02.16 E 18.01.16 C 16.03.15 D 13.03.15 A 11.02.15 ISS DATE DO NOT SCALE DRAWING, VERIEY ALL
DIMENSIONS ON SITE
REPORT ANY DISCREPANCIES IN
DOCUMENTATION TO ACAPITECT
THIS DRAWING IS FOR THE PURPOSE OF
COUNCIL PARFOCAL AND AS SUCH, IS NOT
SUTMALE FOR CONSTRUCTION. PLOTTED: 20/07/2016 12:05:23 PM











Statement of Environmental Effects Development Application - Mixed Use

510-524 Great Western Highway, Pendle Hill

Submitted to Holroyd City Council On Behalf of ANAN Capital

Report Revision History

Revision	Date Issued	Prepared by	Reviewed by	Verified by
Draft	30/03/15	James Kingston	Susan E Francis	Susan E Francis
		Assistant Planner	Executive Director	Executive Director
Final	2/04/15	James Kingston	Susan E Francis	Susen Sher
		Assistant Planner	Executive Director	

This document is preliminary unless approved by a Director of City Plan Strategy & Development.

CERTIFICATION

This report has been authorised by City Plan Strategy & Development, with input from a number of other expert consultants, on behalf of the Client. The accuracy of the information contained herein is to the best of our knowledge not false or misleading. The comments have been based upon information and facts that were correct at the time of writing this report.

Copyright © City Plan Strategy & Development P/L ABN 58 133 501 774

All Rights Reserved. No material may be reproduced without prior permission. While we have tried to ensure the accuracy of the information in this publication, the Publisher accepts no responsibility or liability for any errors, omissions or resultant consequences including any loss or damage arising from resilience in information in this publication.

Table of Contents

1.	Exe	cutive	Summary	1
2.	The	Site a	nd Context	2
	2.1	The Si	te	2
	2.2	Existin	g Improvements	3
	2.3	Contex	t and Surrounding Land Uses	6
	2.4	Previo	us Applications	7
3.	Des	criptio	n of the Development	8
	3.1	Overvi	ew	8
	3.2	Site Ar	nalysis	8
	3.3	Develo	pment Statistics	8
	3.4	Detaile	d Description	9
	3.5	Develo	pment Plans and Supporting Documentation	. 11
	3.6	Pre-loc	gement Consultation	. 12
	3.7	Cost of	f Construction	. 13
4.	Stat	utory F	Planning Considerations	. 14
	4.1	Overvi	ew	. 14
	4.2	Enviro	nmental Planning and Assessment Act 1979	. 14
		4.2.1	Section 5 of the EP&A Act 1979	. 14
		4.2.2	Section 79C of EP&A Act 1979	. 15
		4.2.3	Section 91 Integrated Development	. 16
	4.3	Enviro	nmental Planning and Assessment Regulation 2000	. 16
	4.4	State E	Environmental Planning Policies	. 16
		4.4.1	State Environmental Planning Policy No 32 - Urban Consolidation (Redevelopment of Urban Land)	
		4.4.2	State Environmental Planning Policy No 55 - Remediation of Land	
		4.4.3	State Environmental Planning Policy No 65 - Design Quality of Residential Flat Development	
		4.4.4	State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004	
		4.4.5	State Environmental Planning Policy (Infrastructure) 2007	. 18
		4.4.6	Draft State Environmental Planning Policy No 65 - Design Quality of Residential Flat Development	
	4.5	Holroy	d Local Environmental Plan 2013	. 19
5.	Non	-Statut	ory Considerations	. 23
	5.1	A Plan	for Growing Sydney	. 23

	5.2	Living I	Holroyd Community Strategic Plan 2013	24
	5.3	Holroy	d Development Control Plan 2013	24
6.	Env	vironmental Impact Assessment		26
	6.1	Overvi	ew	26
	6.2	Contex	t and Setting	26
	6.3	Built Er	nvironment	27
		6.3.1	Height, Bulk and Scale	27
		6.3.2	Setbacks and Separation	29
		6.3.3	Design and Aesthetics	30
		6.3.4	Solar Access	31
		6.3.5	Internal Amenity	33
		6.3.6	Privacy	34
		6.3.7	Public Domain	34
		6.3.8	Heritage	35
		6.3.9	Building and Construction	35
	6.4	Natura	l Environment	35
		6.4.1	Flora and Fauna	35
		6.4.2	Tree Removal	35
		6.4.3	Landscape	36
		6.4.4	Water Management and Drainage	36
		6.4.5	Soil Management	37
		6.4.6	Air and Microclimate	37
		6.4.7	Noise & Vibration	37
	6.5	Movem	nent and Access	38
		6.5.1	Transport	38
		6.5.2	Roads and Traffic	38
		6.5.3	Car Parking	39
		6.5.4	Servicing / Waste	39
		6.5.5	Pedestrians and Accessibility	40
	6.6	Site Su	uitability	40
		6.6.1	Geotechnical	40
		6.6.2	Contamination	41
		6.6.3	Bushfire	41
		6.6.4	Flooding	41
		6.6.5	Watertable	41
		6.6.6	Services and Utilities	41

		6.6.7	Hazards (Other)	41
	6.7	Social	and Economic Effects	41
		6.7.1	Social	41
		6.7.2	Crime and Safety	42
		6.7.3	Economic and Employment	43
7.	Con	clusio	n	44

	Document	Prepared by
1.	Holroyd DCP 2013 Table of Compliance	City Plan Strategy & Development
2.	Clause 4.6 Variation Report - FSR	City Plan Strategy & Development
3.	Survey Plan	Project Surveyors
4.	Development Application Architectural Drawings and Schedules	Architects Nicholas + Associates
5.	Photomontages	Architects Nicholas + Associates
6.	Landscape Plans	Architects Nicholas + Associates
7.	SEPP 65 Design Verification Statement SEPP 65 and RFDC Compliance Table	Architects Nicholas + Associates
8.	Traffic and Parking Assessment Report	Varga Traffic Planning
9.	Geotechnical Report	STS GeoEnvironmental
10.	BASIX Report / Certificate	Building Sustainability Assessments
11.	Stormwater Drainage Services Notes and Drawings Sediment & Erosion Plan	Partridge Structural
12.	Arborist Report	Naturally Trees
13.	QS Report	RICQS - Residential Industrial Commercial Quantity Surveyor
14.	Security Management Plan	Architects Nicholas + Associates
15.	Acoustic Report	Acoustic Noise and Vibration Solutions
16.	BCA Compliance Report	City Plan Services

17.	Waste Management Plan (demolition, excavation and construction) Ongoing Waste Management Plan	Architects Nicholas + Associates
18.	Access Report	Wall to Wall Design + Consulting
19.	Council's Pre-Lodgement Meeting Minutes	Holroyd City Council

1. Executive Summary

This Statement of Environmental Effects (SEE) has been prepared pursuant to Section 78A of the Environmental Planning and Assessment Act, 1979 and Clause 50 of the Environmental Planning and Assessment Regulation, 2000. It is proposed to:

- describe the proposed development and its context;
- assess the proposal against the applicable planning controls and guidelines; and
- assess the potential environmental impacts and mitigation measures.

This Statement of Environmental Effects (SEE) has been prepared for ANAN Capital Pty Ltd by City Plan Strategy and Development Pty Ltd ("CPSD") to accompany a Development Application ("DA") to Holroyd City Council. The subject site is known as Nos. 510-524 Great Western Highway, Pendle Hill ("the site").

The proposal is for mixed use development comprising the demolition of the existing structures, amalgamation of the site, excavation for one (1) level of basement parking and construction of three individual and separately defined 3-4 storey buildings. The three buildings on the site will be a shop top housing building to the east (4 storeys), a residential flat building to the west (4 storeys) and multi dwelling housing to the north (3 storeys), specific details of these features are provided in Section 3 of this report.

A pre-lodgement meeting was held on 14 January 2015 with senior staff of Council's Development Assessment Section who provided a detailed summary of the issues raised which is provided at **Appendix 19**. It is noted that Council's Officers were in support of what the proposal was trying to achieve for the area, however could not support the extent of non compliances on the pre DA plans. The plans that accompany this application (**Appendix 4**) have sought to address Council's issues.

The proposed development seeks to vary one Development Standard specified in the Holroyd Local Environmental Plan (HLEP) 2013 in relation to Clause 4.4 Floor Space Ratio. This application is accompanied by a Clause 4.6 exemption to this development standard at **Appendix 2**.

The proposed mixed use development is representative of the desired future character of the Pendle Hill locality, which resolves the current shortfalls of the site's street presentation and activation; provides social and economic benefits to the community; and increases the localities housing stock and choice.

The proposal will reinvigorate the south of Pendle Hill and provide beneficial housing opportunities which are supported by open space, car parking and retail opportunities in a highly accessible location.

The SEE concludes this proposal is of an appropriate scale and mass, has no adverse amenity impacts and will assist in contributing to housing targets set by the recent Metropolitan Plan.

2. The Site and Context

2.1 The Site

The site comprises eight (8) allotments currently configured as follows:

- The western portion of the site, marked in red in Figure 1, that is currently empty with a legal description of Lot 1 DP 657035 and Lot B DP 431923; and
- The portion of the site, marked in yellow in Figure 1, containing the existing bulky goods retailer and vehicle repair station known as "Carasel", with a legal description of Lot 1 DP 1005024, Lot 4 DP 654025, Lot 5 DP 654024, Lot 3 DP 654024, Lot 6 DP 663863and Lot 1 DP 106434.

The amalgamated site forms an irregular shape with a combined area of 6956.228m2 as demonstrated in the Survey Plan provided at **Appendix 3**. The site slopes downwards towards the north-western corner with a fall of approximately 4.5 metres from the south eastern corner.

The site is located along the Great Western Highway, a six lane classified road that connects the Parramatta CBD to the Regional City Centre of Penrith.



Figure 1: Aerial view of the site outlined in red and yellow. (Source: Sixviewer)

The dimensions of the site are as follows (refer to Survey Plan at **Appendix 3**):

Boundary	Frontage	Dimension
North	Residential boundary	110.4m (60.6m western segment & 49.8m eastern segment)
East	Pendle Way and residential boundary	61.526m (31.55m to Pendle Way & 30.076m to residential boundary)

South	Great Western Highway	109.88m
West	Residential boundary	87.445m

2.2 Existing Improvements

The following series of photographs of the site illustrate the site's existing improvements.

Photos 1 and 2 below show the current single storey bulky goods retailer and vehicle repair station known as "Carasel" viewed from Pendle Way. The shop and reception building on the corner of Great Western Highway and Pendle Way is currently accessed from the rear of the building (Photo 2) with no access point from either street frontage (Photo 1).



Photo 1: Carasel's shop and reception building on the corner of Great Western Highway and Pendle Way, viewed from Pendle Way.



Photo 2: The rear of Carasel, viewed from Pendle Way.

Photos 3 and 4 below show the existing vehicle repairs shop and trailer display area fronting Great Western Highway. The main building on this part of the site (the vehicle repair station) is set back approximately 15m from Great Western Highway. This setback is used to display trailers as seen in Photo 3.



Photo 3: The Carasel vehicle repair shop and trailer display area fronting Great Western Highway, viewed looking west.



Photo 4: The Carasel vehicle repair shop and trailer display area fronting Great Western Highway, viewed looking east with the Carasel shop/reception building in the background.

Photos 5 and 6 below show the portion of the site that is currently undeveloped. This area is currently unkempt and fenced from Great Western Highway. There are currently two vehicular entry points from this portion of the site to Great Western Highway.



Photo 5: The western portion of the site that is currently empty.



Photo 6: The western portion of the site, viewed from Great Western Highway at the site's western boundary with 526 Great Western Highway.

2.3 Context and Surrounding Land Uses

The site is located on the Great Western Highway, a state road and major arterial road throughout the locality (refer to Traffic and Parking Assessment Reports at **Appendix 8**). The site also has a frontage to Pendle Way, connecting the Great Western Highway to Pendle Hill Railway Station. The site is surrounded by predominately residential uses to the north and west as seen in Photos 7, 8 and 9 below. With the commencement of the Holroyd Local Environmental Plan 2013 ("HLEP") in August 2013, sections of land within close proximity to the intersection of Pendle Way and Great Western Highway became zoned B6 Enterprise Corridor (Section 4.5 of this report). The newly rezoned sites have not yet been redeveloped and are seen in Photos 10, 11 and 12.



Photo 7 (left): The single storey detached residential dwelling that currently adjoins the subject site to its north-eastern boundary. **Photo 8** (right): The sites north-western boundary with 7 and 9 Rhonda Street



Photo 9 (left): 526 Great Western Highway adjoining the site to the west, viewed from Great Western Highway. **Photo 10** (right): Downtown Bar & Grill at 502-508 Great Western Highway located on the north-eastern corner of Pendle Way and Great Western Highway (opposite the site's eastern boundary with Pendle Way).



Photo 11 (left): Rallyequip Auto Centre opposite the site to the south on the south-western corner of Pendle Way and Great Western Highway. **Photo 12** (right): The empty site containing eight allotments located on the south eastern corner of Pendle Way and Great Western Highway.

2.4 Previous Applications

The following represent recent applications on the site.

Development Application	Description
DA 1008/2000	Demolition of existing structures and erection of showroom and workshop to be used for the sale and fitting of towbars and trailers.
516-518 Great Western Highway, Pendle Hill	This application was determined for refusal 20/03/2002.
DA 30/2005 510 Great Western Highway, Pendle Hill	Use of existing premises for the sale of spare parts for trailers and towbars, in conjunction with the existing business located at 514-520 Great Western Highway, and installation of associated signage. This application was approved 13/12/2004.
DA 17/2012 522 Great Western	Construction of medium density residential development comprising 2 townhouses and 9 villas.
Highway, Pendle Hill	This application was deferred.

3. Description of the Development

3.1 Overview

This Development Application seeks consent from Holroyd City Council for mixed use development comprising; the demolition of the existing structures, amalgamation of the site, excavation for one (1) level of basement parking and construction of three individual and separately defined 3-4 storey buildings. The three (3) buildings will be described as;

- Shop top housing building to the east of the site. This building will include six (6) retail/commercial spaces on the ground floor, with three floors of residential dwellings above. This building will contain a total of 24 residential apartments.
- Residential Flat Building to the west of the site. This building consists of four (4) floors of residential development with 38 residential apartments.
- Multi Dwelling Housing to the north of the site. This building will consist of ten (10) attached three bedroom terraces each with individual ground-floor parking.

Vehicular access (ingress and egress) is provided via Pendle Way, including provisions for an on-site loading dock for services and waste management. Refer to the Architectural Drawings at **Appendix 4** and the Traffic and Parking Assessment Report at **Appendix 8** for further details.

In terms of design quality the SEPP 65 and RFDC Compliance Table at Appendix 7 states;

"The proposed development is an important new street corner element in the streetscape of the Great Western Highway & Pendle Way. The new buildings on the corner will be a positive contribution to the streetscape, establishing appropriate scale, creating a new typology of fitting character and detail.

The proposal responds to the mild sloping site topography with a stepped building profile, preserving solar access and privacy to adjoining properties.

Significant vegetation has been retained and through site links & overland paths created and integrated into the proposal. All new homes have been designed for minimal energy waste and life cycle cost."

The proposed mixed use development provides a valuable improvement to the site and surrounding locality by providing a visually and physically integrated design which activates the streetscape and provides tangible public benefits which will assist in driving the future character and sense of community of the Pendle Hill locality.

3.2 Site Analysis

Refer to the Site analysis drawings prepared by Architects Nicholas + Associates ("AN+A") which accompany this application at **Appendix 4**.

3.3 Development Statistics

The key statistics and elements of the project are shown in the Table 2 below (further details can be found in the schedules provided by Architects Nicholas + Associates ("AN+A") at **Appendix 4**):

Element	Proposal
Site Area	6,956.228m2
Gross Floor Area	7333.8m2
Maximum Height	14 metres as measured from existing ground level across site as indicated on the section at Appendix 4 .
Total Dwellings	 72 dwellings across three buildings: East shop top housing building - 24 residential apartments West residential flat building - 38 residential apartments Northern multi dwelling housing building - 10 terraces
Total Car Parking	118 spaces comprising: Basement;
Maximum depth of excavation	3 metres as per geo technical report at Appendix 9.

3.4 Detailed Description

In detail, the DA consists of the following components:

- Demolition of the existing structures;
- Amalgamation of the sites;
- Excavation to maximum depth of 3m for one basement parking level with a total of 108 car parking spaces; and
- The phased construction and occupation of a mixed use development comprising three buildings and 72 dwellings.

The following table provides a summary of the proposal per level (figures provided in the summary below can also be found in the GFA Calculation Schedule accompanying the DA Architectural Plan Set prepared by AN+A provided at **Appendix 4**):

Level	Use	Uses / Car Parking Spaces / Bedrooms	GFA			
Basement Level	Residential and commercial car parking and storage	108 total car parking spaces including, 30 retail/commercial spaces, 65 residential spaces, 13 residential visitor spaces, 1 car wash bay, storage areas and plant room.	N/A			
Ground Level	Residential and commercial	East shop top housing	775.2m2			
	Commercial	6 commercial tenancies				
		108 total car parking spaces including, 30 retail/commercial spaces, 65 residential spaces, 13 residential visitor spaces, 1 car wash bay, storage areas and plant room. East shop top housing N/A N/A 775.2m2				
		4 x 2bed				
		4 x 3 bed				
		Northern multi dwelling housing building 10 dwellings with ground floor car parking, kitchen and primary living area East shop top housing 2 x studio 6 x 2 bed West residential flat building 3 x studio 1 x 1 bed 2 x 2bed				
		car parking, kitchen and primary				
Level 1	Residential	East shop top housing	621.2m2			
		2 x studio				
		6 x 2 bed				
		West residential flat building	843.5m2			
		3 x studio				
		1 x 1 bed				
		2 x 2bed				
		4 x 3 bed				
		East shop top housing 2 x studio 6 x 2 bed West residential flat building 3 x studio 1 x 1 bed 2 x 2bed 4 x 3 bed Northern multi dwelling housing building 10 dwellings with 2 bedrooms, 1 bathroom and 1 study on level 1. East shop top housing 2 x studio 6 x 2 bed				
		10 dwellings with 2 bedrooms, 1				
Level 2	Residential	East shop top housing	637.6m2			
		2 x studio				
		6 x 2 bed				
		West residential flat building	843.5m2			
		3 x studio				
		1 x 1 bed				
		2 x 2bed				
		4 x 3 bed				
			301.5m2			
		10 dwellings with 1 bedroom and 1 bathroom.				

Level 3	Residential	East shop top housing	637.6m2
		2 x studio	
		6 x 2 bed	
		West residential flat building	843.5m2
		3 x studio	
		1 x 1 bed	
		2 x 2bed	
		4 x 3 bed	
Total		6 Non-residential Units	7333.8m2
		72 Residential Units	

The total proposed gross floor area for the site is 7333.8m² (see Table 2 above). The development has an FSR of 1.054:1. The gross floor area figures are measured by the architects accordance with the definition within the HLEP. The proposal exceeds the 1:1 FSR standard in the HLEP; this is addressed in the Clause 4.6 Variation Request at **Appendix 2** and throughout this SEE.

The following Table identifies the proposed construction phasing and occupation staging of the proposed development.

Details of Constrcution	Construction Phase
Site wide demolition and excavation	Phase 1
Construction of the basement parking levels and services	Phase 2
Construction of all above ground works to accomodate a total of 72 dwellings	Phase 3

Having regard to the proposed staging, all conditions relating to prior to CC works should relate to the specific Phase or more appropriately refer to the "relevant Construction Certificate".

The Architectural Drawings, Shadow Diagrams, Schedule of External Finishes, SEPP 65 Design Verification Statement and RFDC Table of Compliance which are submitted in support of this application were prepared by AN+A and are included at **Appendices 4 and 7**.

3.5 Development Plans and Supporting Documentation

The Statement has been prepared with regard to the architectural drawings prepared by AN+A which accompany this application.

The Statement has been prepared with regard to the following technical reports which accompany the application:

- Survey Plan by Project Surveyors
- Shadow Diagrams, Solar Analysis and Cross Ventilation Plans by AN+A
- Apartment Typology, GFA Calculation, Bins and Landscape Schedules by AN+A
- Photomontages by AN+A

- Landscape Plans by AN+A
- Verification Statement, SEPP 65 Design Statement and RFDC Assessment by AN+A
- Traffic and Parking Assessment Report by Varga Traffic Planning
- Geotechnical Report by STS GeoEnvironmental
- BASIX Certificate prepared by Building Sustainability Assessments ("BSA")
- Stormwater Concept Plan by Partridge Structural
- Arborist Report by Naturally Trees
- QS Report by RICQS Residential Industrial Commercial Quantity Surveyor
- Sediment & Erosion Plan by Partridge Structural
- Acoustic Report by Acoustic Noise and Vibration Solutions
- BCA Compliance Report by City Plan Services
- Waste Management Plan by AN+A
- Access Report by Wall to Wall Design + Consulting

CPSD have relied on the information in these reports, prepared by professionals in their field, for the preparation of this SEE.

3.6 Pre-lodgement Consultation

A Pre-Development Application Advisory Panel Meeting with Holroyd City Council was held on 14 January 2015. Council concluded that "[d]ue to the extent of non-compliances, Council is unsupportive of the proposal in its current form". The scheme proposed as part of this application is vastly more compliant than that discussed at the pre DA meeting.

Issues raised by Council have been addressed in this application, as detailed in the table below.

Item	Comment
Item 1	N/A
Introduction	
Item 2	N/A
Site and Proposal	
Item 3	Refer to bellow comments.
Planning instruments and Controls - Overview	
Item 4	Addressed at Section 4.4.3 and Appendix 7 of
State Environmental Planning Policy No 65— Design Quality of Residential Flat Development	this report.
Item 5 State Environmental Planning Policy	Addressed at Section 4.4.5 of this report.

(Infrastructure) 2007	
Item 6 State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004	Addressed at Section 4.4.4 and Appendix 10 of this report.
Item 7 Holroyd Local Environmental Plan 2013	Addressed at Section 4.5 of this report.
Item 8 Holroyd Development Control Plan 2013	Addressed at Section 5.2 and Appendix 1 of this report.
Item 9 Environmental Management	Addressed at Section 6 of this report.
Item 10 Development Engineering	Addressed at Appendices 8 and 11 of this report.
Item 11 Traffic Management and Parking	Addressed at Section 6.5 and Appendix 8 of this report.
Item 12 Landscaping/ Tree Comments	Addressed at Section 6.4 and Appendices 6 and 12 of this report.

3.7 Cost of Construction

The total cost of construction of the project is estimated to have a capital investment value of \$21,209,308. Refer to the QS Report prepared by RICQS and provided at **Appendix 13** for more detail.

4. Statutory Planning Considerations

4.1 Overview

The relevant statutory framework considered in the preparation of this report comprises:

- Environmental Planning and Assessment Act, 1979;
- Environmental Planning and Assessment Regulation 2000;
- State Environmental Planning Policy No. 32 Urban Consolidation (Redevelopment of Urban Land);
- State Environmental Planning Policy No. 55 Remediation of Land;
- State Environmental Planning Policy No. 65 Design Quality of Residential Flat Development;
- State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004;
- State Environmental Planning Policy (Infrastructure) 2007; and
- Holroyd Local Environmental Plan 2013.

Where relevant, these controls are addressed below.

4.2 Environmental Planning and Assessment Act 1979

4.2.1 Section 5 of the EP&A Act 1979

The Environmental Planning and Assessment Act, 1979 ("the Act") is the principle planning and development legislation in New South Wales. In accordance with Section 5, the objectives of the Act are:

"(a) to encourage:

- (i) the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment,
- (ii) the promotion and co-ordination of the orderly and economic use and development of land,
- (iii) the protection, provision and co-ordination of communication and utility services,
- (iv) the provision of land for public purposes,
- (v) the provision and co-ordination of community services and facilities, and
- (vi) the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats, and
- (vii) ecologically sustainable development, and

(viii) the provision and maintenance of affordable housing..."

For the reasons set out below, it is considered that the proposed development satisfies the above stated objects of the Act:

- The proposed development will promote the social and economic welfare of the local community through the provision of high-quality residential and non-residential space;
- Creation of additional jobs during the construction and operational phases;
- The proposal will result in the orderly and economic use and development of land as the site is of an appropriate size, location and land use zoning to enable the development;
- Appropriate utility services are provided; and
- There will be no unreasonable adverse impacts on the environment.

4.2.2 Section 79C of EP&A Act 1979

Section 79C (1) of the *Environmental Planning and Assessment Act, 1979* ("the Act") as amended specifies the matters which a consent authority must consider when determining a development application. The relevant matters for consideration under Section 79C of the Act are addressed in the Table below. Also refer to the assessment provided in the DCP Table of Compliance provided at **Appendix 1**, and the detailed analysis of the proposal provided in the SEPP 65 and RFDC Compliance Table prepared by AN+A provided at **Appendix 7**.

Table 7: Section 79C(1)(a) considerations

Section	Comment
Section 79(1)(a)(i) Any environmental planning instrument	Consideration of relevant instruments is discussed in Section 4 .
Section 79C(1)(a)(ii) Any draft environmental planning instrument	Refer to Section 4.4.6 of this report.
Section 79C(1)(a)(iii) Any development control plan	Consideration of the relevant development control plan is discussed in Section 5.3 .
Section 79C(1)(a)(iiia) Any planning agreement	Not relevant to this application.
Section 79C(1)(a)(iv) Matters prescribed by the regulations	Refer to Section 4.3.
Section 79C(1)(a)(v) Any coastal zone management plan	Not relevant to this application.

Refer to Section 6.

4.2.3 Section 91 Integrated Development

This section of the Act defines integrated development as matters which require consent from Council and one or more approvals under related legislation. In these circumstances, prior to granting consent Council must obtain from each relevant approval body their General Terms of Approval (GTA) in relation to the development.

The proposed development is **not** considered to require assessment as an integrated development.

4.3 Environmental Planning and Assessment Regulation 2000

Clause 50 (1)(a) of the Environmental Planning and Assessment Regulation 2000 ("the Regulation") requires that a development application for a residential flat building must be accompanied by a design verification statement from a qualified designer, which confirms:

- a) that he or she designed, or directed the design, of the residential flat development, and
- b) that the design quality principles set out in Part 2 of State Environmental Planning Policy No 65—Design Quality of Residential Flat Development are achieved for the residential flat development.

This Verification Statement has been prepared by AN+A and accompanies this application at **Appendix 7**.

In addition, Clause 50 calls up Schedule 1 of the Regulation, which provides that any development application for residential flat development to which State Environmental Planning Policy No 65—Design Quality of Residential Flat Development applies, must also be accompanied certain information. These submission requirements are submitted in support of this application (refer to Appendices 4, 5, 6 and 7).

All demolition work will be undertaken in accordance with Clause 92 of the Regulation requiring the consent authority to consider AS 2601 - 1991: The Demolition of Structures.

All building work will be carried out in accordance with Clause 98 of the Regulation which requires the consent authority to consider the provisions of the Building Code of Australia.

4.4 State Environmental Planning Policies

4.4.1 State Environmental Planning Policy No 32 - Urban Consolidation (Redevelopment of Urban Land)

The proposed development is consistent with the aims and objectives of SEPP 32 and the State Government's urban consolidation initiatives. The site is zoned B6- Enterprise Corridor under the HLEP 2013 in which *shop top housing, residential flat buildings and multi dwelling housing* are permissible land uses. The site is strategically located on a large corner site at the southern entrance to Pendle Hill, linking surrounding areas to Pendle Hill train station via Pendle Way and Parramatta/Penrith via Great Western Highway. The site is serviced well by public transport with bus services running frequently along Great Western Highway and less that 1.2km from Pendle Hill Train Station. Pendle Hill Train Station is approximately 50 minutes from Sydney's Central Station and 10 minutes from Parramatta Station.

The site's location facilitates an inherent residential demand, which will in turn lead to increased demand for retail and commercial development. The site offers tangible public benefit by acting as a catalyst for the future modernisation and development of the locality.

4.4.2 State Environmental Planning Policy No 55 - Remediation of Land

State Environmental Planning Policy No. 55 – Remediation of Contaminated Lands (SEPP 55) establishes State-wide provisions to promote the remediation of contaminated land.

The policy states that land must not be developed if it is unsuitable for a proposed use because it is contaminated. If the land is unsuitable, remediation must take place before the land is developed. The policy makes remediation permissible across the State, defines when consent is required, requires all remediation to comply with standards, ensures land is investigated if contamination is suspected, and requires Councils to be notified of all remediation proposals. The Managing Land Contamination: Planning Guidelines were prepared to assist councils and developers to determine when land has been at risk.

Clause 7 of the SEPP 55 requires that a consent authority must not grant consent to a development if it has considered whether a site is contaminated, and if it is, that it is satisfied that the land is suitable (or will be after undergoing remediation) for the proposed use.

The site is considered to have a low likelihood of contamination being present on the site based on the current condition of the site and as a result of current and historical land use activities.

Appropriate environmental protection measures will be implemented by the appointed builder during the demolition and construction phases of the development. The proposal is accompanied by a Sediment and Erosion Plan which demonstrates the site will be appropriately managed throughout the course of works (**Appendix 11**). A final CMP will be prepared by the appointed contractor, once the terms of any approval granted by Council are known. Accordingly it is anticipated that Council will include appropriate conditions within any consent notice requiring the preparation and approval of a CMP prior to works commencing.

Overall, this application demonstrates that the proposed development will result in the construction and long term operation of the development with minimal environmental impact.

4.4.3 State Environmental Planning Policy No 65 - Design Quality of Residential Flat Development

This Policy aims to improve the design quality of residential flat development to:

- Ensure such buildings contribute to sustainable development;
- Provide sustainable housing in social and environmental terms:
- Achieve better built form and aesthetics of buildings, streetscapes and the public spaces they define;
- Better satisfy the increasing demand, changing social and demographic profile of the community;
- Maximise amenity, safety and security for the benefit of occupants and the wider community; and

Minimise the consumption of energy from non-renewable resources.

To support these aims the SEPP introduces 10 design quality principles. These principles do not generate design solutions, but provide a guide to achieving good design and the means of evaluating the merit of proposed solutions.

An assessment of the proposed development, against these design principles is contained in the SEPP 65 and RFDC Compliance Table prepared by AN+A and provided at **Appendix 7**.

An assessment of the proposed development against the Residential Flat Design Code is contained in the plans as well as the SEPP 65 and RFDC Compliance Table prepared by AN+A and provided at **Appendix 7**. Overall, the proposed development has been assessed in accordance with the provisions of SEPP 65 and in accordance with the Residential Flat Design Code accompanying the State Policy.

In summary, the proposed development provides a positive contribution to its locality in terms of its design quality, the internal and external amenity it provides and an increase to studio, 2 bedroom and 3 bedroom housing choice and stock in the area. Furthermore, the proposed development is consistent with the aims and provisions of the Residential Flat Design Code as indicated in the Design Verification Statement.

4.4.4 State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004

The aim of this Policy is to establish a scheme to encourage sustainable residential development (the BASIX scheme). This on-line assessment tool calculates the dwelling's energy and water scores based on a range of design data.

State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004 ("SEPP BASIX") requires the submission of a BASIX certificate to accompany an application for development consent for any "BASIX affected building". A BASIX certificate for the residential component of the development is provided at **Appendix 10**.

4.4.5 State Environmental Planning Policy (Infrastructure) 2007

State Environmental Planning Policy (Infrastructure) 2007 ("iSEPP") provides a consistent planning regime for infrastructure and the provision of services across NSW, along with providing for consultation with relevant public authorities during the assessment process. The SEPP supports greater flexibility in the location of infrastructure and service facilities along with improved regulatory certainty and efficiency.

4.4.6 *Draft* State Environmental Planning Policy No 65 - Design Quality of Residential Flat Development

Draft State Environmental Planning Policy No 65 - Design Quality of Residential Flat Development ("Draft SEPP 65") was placed on public exhibition on 23 September 2014. The Draft SEPP 65 aims to provide amendments to the existing policy and associated guidelines to ensure the design quality of residential flat buildings are consistent throughout NSW. The proposed amendments involve changes to the SEPP itself as well as providing various new design elements with the guidelines (i.e. Apartment Design Guide), although the latter is considered not to have any statutory status for the purposes of Section 79C of the Act.

The proposed development is consistent with the provisions contained within the Draft SEPP 65 instrument.

4.5 Holroyd Local Environmental Plan 2013

Zoning and permissibility

The zoning of the entire site is **B6 Enterprise Corridor** pursuant to the HLEP 2013 (Figure 2).

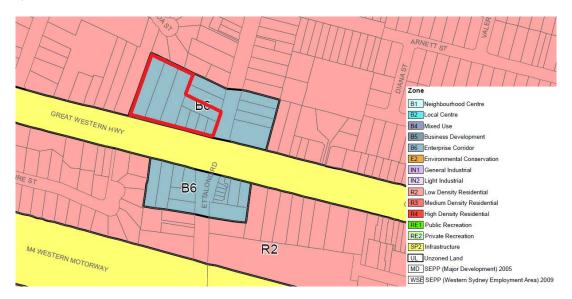


Figure 2: Extract from the HLEP 2013 Land Use Zone Map, showing the subject site outlined in red.

The proposal is for a mixed use building comprising a residential flat building, shop top housing building and a multi dwelling housing building. The following definitions from the Dictionary to the HLEP 2013 are therefore relevant:

- 1. "shop-top housing means one or more dwellings located above ground floor retail premises or business premises."
- 2. "residential flat building means a building containing 3 or more dwellings, but does not include an attached dwelling or multi dwelling housing."
- 3. "multi dwelling housing means 3 or more dwellings (whether attached or detached) on one lot of land, each with access at ground level, but does not include a residential flat building."

The Land Use Table for the "B6 Enterprise Corridor" nominates residential flat buildings, shop top housing and multi dwelling housing as being permissible with consent.

Zone objectives

Clause 2.3(2) of the HLEP 2013 provides that Council must have regard to the zone objectives when determining a development application. The objectives for the "B6 Enterprise Corridor" zone are to:

- To promote businesses along main roads and to encourage a mix of compatible
- To provide a range of employment uses (including business, office, retail and light industrial uses).

- To maintain the economic strength of centres by limiting retailing activity.
- To provide for residential uses, but only as part of a mixed use development.

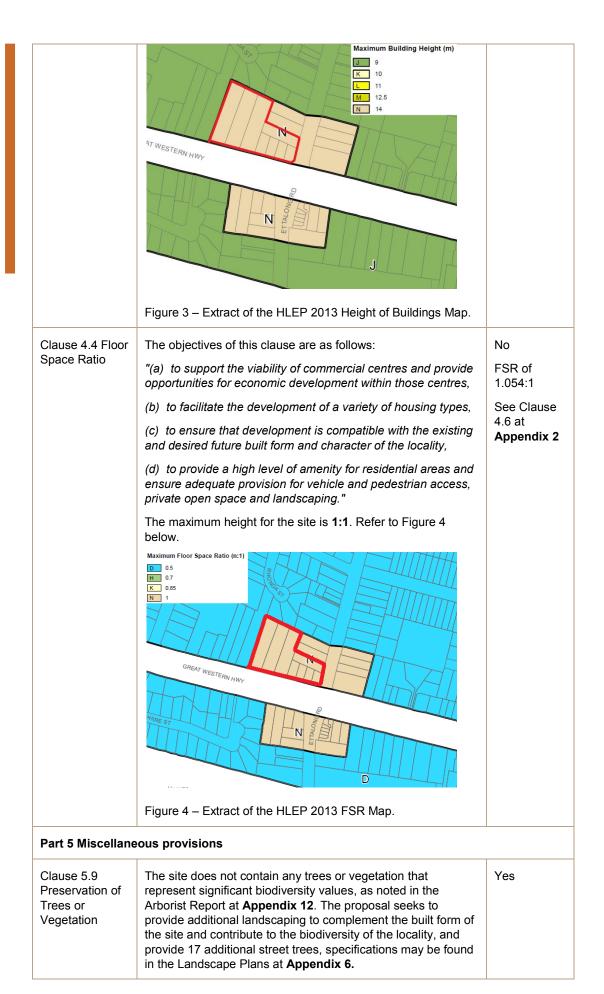
The proposed development is consistent with the above objectives in that the proposal: -

- Provides a mix of residential and non-residential land uses which are compatible with each other and the future direction of the locality;
- Facilitates a medium density residential development on an appropriate site in close proximity to public transport;
- Ensures a building form, type and scale compatible with the character future surrounding built environment (reflected in the B6 Zoning) and does not detract from the amenity enjoyed by the nearby residents or the existing quality of the environment;
- Diversifies the current employment and building typology available throughout the locality whilst also providing a diverse range of employment uses within the ground floor of the shop top housing component;
- Enhances the economic strength of centres by providing approximately 8% of the total GFA as potential retailing activity; and
- Responds to the changing character of the area and integrates residential uses only as part of a mixed use development.

Remaining HLEP 2013 provisions

Consideration of the remaining provisions within the HLEP 2013 that may be relevant to this project is addressed in the following table:

Relevant Clause	Comment	Comply			
Part 4 Principal development standards					
Clause 4.3 Height of Buildings	The objectives of this clause are as follows: "(1) The objectives of this clause are as follows: (a) to minimise the visual impact of development and ensure sufficient solar access and privacy for neighbouring properties, (b) to ensure development is consistent with the landform, (c) to provide appropriate scales and intensities of development through height controls." The maximum height for the site is 14m. Refer to Figure 3 below.	Yes			



Clause 6.10 Earthworks	The site is currently either covered by existing development or cleared for the purpose of future development. The proposed development and extent of earthworks and excavation does not impact on vegetation on the site or surrounds, results in minimal impacts on the amenity of neighbouring properties, does not impact on any natural features of water runoff patterns, and ensures the structural integrity of adjoining properties. The Geotechnical Investigation undertaken by STS GeoEnvironmental and provided at Appendix 9 , concludes that the extent of earthworks and excavation is appropriate for the site and provides recommendations to ensure the excavation activities proposed do not adversely impact on the neighbouring properties.	Yes
Clause 6.3 Essential services	The proposed development has considered and made appropriate arrangements for the provision of essential services. The following are specified under this clause and addressed throughout this report and appendices; "(a) the supply of water, (b) the supply of electricity, (c) the disposal and management of sewage, (d) stormwater drainage or on-site conservation, (e) suitable road access."	Yes
Clause 6.4 Flood Planning	This clause concerns land at or below the flood planning level. Refer to Section 6.6.4 of this report for a discussion of flood planning and its consideration in the HDCP table of compliance at Appendix 1 .	Yes
Clause 6.7 Stormwater Management The clause specifies that development consent must not be granted unless the development is designed to maximise permeable surfaces, includes (if poracticable) on-site storm water retention, and avoids any adverse impacts of stormwater runoff. Refer to Appendix 11.		Yes.
Clause 6.8 Salinity	The site is identified on the Salinity Map as "Moderate Salinity Potential". An assessment of Salinity potential has been undertaken at Appendix 11 .	Yes

5. Non-Statutory Considerations

5.1 A Plan for Growing Sydney

A Plan for Growing Sydney was released by the NSW Government on 15 December 2014. The Plan will guide land use planning decisions for the next 20 years and provides a framework for strengthening the global competitiveness of Sydney and delivering strong investment and job growth in Western Sydney.

The Plan aims to enhance Sydney's liveability through achieving the following goals:

- A competitive economy with world-class services and transport;
- A city of Housing choice, with homes that meet our needs and lifestyles;
- A great place to live with communities that are strong, healthy and well connected;
- A sustainable and resilient city that protects the natural environment and has a balanced approach to the use of land and resources; and
- Facilitating and managing growth of Sydney over the next 25 years.

The Plan for Growing Sydney divides Sydney into sub-regions. The subject site is located within the **West Central Subregion**. Key priorities of the West Central Subregion include:

- A competitive economy.
- Accelerate housing supply, choice and affordability and build great places to live.
 - Work with councils to identify suitable locations for housing and employment growth coordinated with infrastructure delivery (urban renewal), including around Priority Precincts, established and new centres, and along key public transport corridors including the North West Rail Link, the Western Line, the Cumberland Line, the Carlingford Line, the Bankstown Line, Sydney Rapid Transit and bus T-Ways.
 - Work with councils to identify opportunities to revitalise suburbs and reduce concentrations of disadvantage.
- Protect the natural environment and promote its sustainability and resilience.

The proposed development is complimentary to the economic competitiveness of the subregion by providing an appropriate mix of residential and commercial space. The commercial space provided will be adapted to meet select needs of the local community, promoting larger centres as 'hubs' of economic growth.

The housing supply and choice proposed on the subject site will provide diversity in a compatible location. The site is within close proximity of major bus, train and car corridors. The design and location of the site will allow for revitalisation and reduce disadvantage throughout the area, ideally acting as a catalyst for further growth.

The proposal is consistent with a 'Plan for Growing Sydney', in that it will provide varying forms of housing for suitable for multiple generations and household types within an area easily accessible by public transport. The proposed development will also ensure the long-term viability of subregional centres by providing limited retail and commercial space, increasing housing stock and acting as a catalyst for modernisation within the LGA.

5.2 Living Holroyd Community Strategic Plan 2013

The Living Holroyd Community Strategic Plan 2013 ("Living Holroyd") establishes a vision for the urban and social development of Holroyd over a 20 year period. The plan identifies "housing form and density" and "ensuring a balanced approach to housing growth" as two high priority matters relating to effective urban planning and sustainable management of growth. The proposal seeks to directly address these priorities through the provision of a form and density that is compatible with the current locality, whilst representative of its future direction. The provision of medium density housing stock in a location that is within close proximity to public transport and major road corridors allows for the efficient provision of housing supply. The proposal provides a balance of residential space, commercial space and open space that is conducive to physical and social development of the community.

Living Holroyd provides a simply analysis of spaces within the LGA, stating;

"Holroyd City covers a total area of 40 kms2, with:

- 60% residential
- 30% substantial industry
- 7% commercial
- 3% open space."

As a result of the minimal open space seen throughout the LGA the proposal provides high quality and generous private and communal open space to enhance the residential amenity of the site. Moreover, Living Holroyd identifies an anticipated population increase of 30,000 people throughout the LGA by 2031. This increase represents more than 30% of Holroyd's current population. To this extent the proposal will be providing medium density housing stock that is within the interest of the locality and the LGA's ability to provide high quality housing stock.

5.3 Holroyd Development Control Plan 2013

Consideration of compliance and consistency with the relevant provisions within the Holroyd Development Control Plan 2013 ("HDCP") is provided in the Table of Compliance prepared by CPSD provided at **Appendix 1**. The Table of Compliance shows that the proposed development generally demonstrates full compliance with the relevant provisions of the DCP, or complies with intent.

The following parts of the DCP are relevant to this proposal:

- Part A General Controls
- Part B Residential Development
- Part C Commercial, Shop Top Housing and Mixed Use Development Controls

A compliance table for the DCP accompanies this application. The key non-compliances identified are: -

- Part B Residential Controls 5. Multi Dwelling Housing
 - 5.3 Height
- Part B Residential Controls 6. Residential Flat Buildings

- 6.3 Setbacks and Separation
- 6.10 Dwelling Layout and Mix
- Part C Commercial Development
 - 1.4 Setbacks, Separation and Depth (same non-compliance as Part B 6.3)

These matters are discussed in the Compliance Table and at Appendix 1.

6. Environmental Impact Assessment

6.1 Overview

This section identifies and assesses the impacts of the development with specific reference to the heads of consideration under section 79C of the EP&A Act.

6.2 Context and Setting

The context and setting of the development site is described in **Section 2.3** of this Statement.

As discussed in detail in the SEPP 65 and RFDC Compliance Table prepared by AN+A and provided at **Appendix 7**, the proposal provides a built form and massing which is considered to positively contribute to the quality and transitioning identity of the locality. The subject site is the first site to be developed within the "enterprise corridor" at the intersection of Great Western Highway and Pendle Way. Through the amalgamation of eight allotments the proposal is able to achieve a highly refined and appropriately modernised architectural presentation, enhancing the site's relationship with Great Western Highway and Pendle Way. Additionally, the setting of the development on a large parcel of land (6956.228m2) provides numerous positive externalities to surrounding locality. The proposal provides a 12.5% surplus of communal open space (42.5% of the site), breaking down the visual presentation of the medium density form (refer to the Photomontages provided at **Appendix 5**).

The transitioning identity of the Pendle Hill locality and the broader LGA is embodied in the recent increase of medium density development. The LGA is undeniably dominated by single storey detached dwellings. However, in the first two and a half months of 2015 Council has made a determination on 15 residential flat buildings, five (5) shop top housing buildings and three (3) multi dwelling housing proposals. The form of development proposed on the subject site is consistent with that currently being proposed throughout the LGA with ten (10) of the 23 applications noted above being four (4) storeys in height. Therefore, whilst the site's immediate locality does not comprise large amounts of medium density development this proposal is considered to be consistent with the current medium density zoning and context under which the LGA is developing.

Further consideration of the compatibility of the proposal and its surroundings can be undertaken with regard to the Land Environment Court Planning Principle on "compatibility with context" in Project Venture Developments v Pittwater Council [2005] NSWLEC 191. In order to test whether a proposal is compatible with its context, the following two questions can be asked:

Are the proposal's physical impacts on surrounding development acceptable?
 The physical impacts include constraints on the development potential of surrounding sites.

The proposed development of the site has been undertaken with due consideration of the future redevelopment of neighbouring properties. The proposed development 'shares' the obligations as specified in SEPP 65 and the RFDC with regard to building separation and ensuring neighbouring properties have the opportunity to achieve solar access. In particular, the built form has a significant setback to the northern boundaries and is also designed to respect the residential amenity of existing dwellings to the west of the site.

The proposal is a suitable development option of the site. In keeping with the desired future character by providing a suitably modernised design and enhanced street

activation, the proposal is considered to progress the transitioning character of the Pendle Hill locality and Holroyd LGA.

Is the proposal's appearance in harmony with the buildings around it and the character of the street?

The immediate locality comprises a diverse mix of uses including restaurant, vehicle repair station, dual occupancy, multi dwelling housing and dwelling houses. The proposed design reduces the visual bulk and scale of the building when the considered in its current context, refer to photomontages at **Appendix 5**. Specifically the articulation of the building's street frontages, provision of setbacks and landscape design (including the planting of 17 street trees) provide a proposal that is highly sympathetic to the existing amenity of the local area.

As discussed above the proposal is consistent with the changing character of the locality. Figure 5 below shows the rate of change in Pendle Hill's housing typology between the 2006 and 2011 census, reflecting an overwhelming comparative increase in the provision of medium density dwellings. This trend has continued with Holroyd Council approving 40 medium density dwellings in Pendle Hill to date in 2015 (DA/302/2014 four (4) storey RFB and DA/39/2014 five (5) mixed use development).

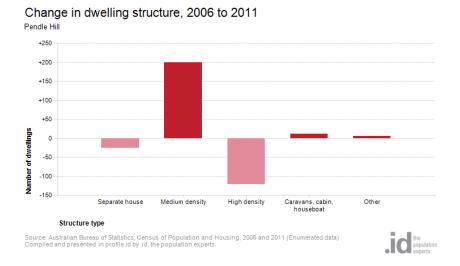


Figure 5: Change in dwelling structure of the Pendle Hill between 2006 and 2011. (Source: profile.id - the population experts)

6.3 Built Environment

6.3.1 Height, Bulk and Scale

The subject site is suitable development, utilising a large parcel of land in a zone that encourages the provision of residential uses as part of a mixed use development. The visual catchment of the site provides the streetscape with a mix of uses and an articulated form to reduce visual impact on the streetscape and surrounding properties.

The proposal is for mixed use development comprising three distinct and separately defined forms which will cohesively integrate with the existing and future streetscape character of Pendle Hill. The proposed development improves the presentation of the site by removing the existing structure which consists of a bulky goods retailer and vehicle repair station, and providing a contemporary medium density built form which will activate

the corner site and provide further landscaping elements (in excess of that required) for the development.

The proposal is fully compliant with the maximum permitted building height of 14m. The HDCP provides non statutory provisions regarding building height for multi dwelling housing at Part B (5.3), stating that "[t]he maximum height for multi dwelling housing is two (2) storeys". The DCP continues to state, "[t]wo storey dwellings shall have a maximum building height of 9 metres". The provision of a 9m maximum building height for multi dwelling housing in the HDCP is inconsistent with the 14m height standard specified in the HLEP. Pursuant to Clause 74C(5b) of the EP&A Act, "A provision of a development control plan (whenever made) has no effect to the extent that [...] it is inconsistent or incompatible with a provision of any such instrument". Therefore, the 14m height limit proposed in the HLEP is applicable to the multi dwelling housing component.

The height of the terraces at the rear of the site is three storeys to achieve consistency in design and scale throughout the site. The feedback provided by council at pre DA consultation (Appendix 19) specifically noted a desire for the multi dwelling housing component to achieve consistency with the design of the residential flat building and shop top housing components. Multiple options were discussed at pre lodgement, including the removal of the initial pitched roof design and the integration of standalone garages into the main building form. The pitched roof proposed has been replaced with a modern straight edged design to heighten architectural resolve of the building. The standalone garages have been reconfigured to be included on the ground floor with a third floor added to maximise the residential amenity of the building.

The bulk and scale of the terraces at the north of the site is considered appropriate due to the negligible impact on adjoining properties and the compliance with height and setback requirements. The addition of a third storey to the terraces did not increase the height and only slightly increased the envelope of the building. However, the addition resulted in a further 301.5m2 of GFA. This 301.5m2 of GFA is space that could have functioned as an attic and not contributed to the GFA calculation of the previous two storey design. The breach of the FSR standard is addressed in more depth in the Clause 4.6 Variation Request at **Appendix 2**.

The HDCP provides, through Part C (1.3), a height of three (3) storeys for a site with a 14m height limit. This height specification is presumably derived from the minimum floor to ceiling heights required for commercial development. The pre DA feedback (**Appendix 19**) states, "Council would consider a variation to this control so long as the LEP height in metres complies, and the 4th storey does not create any adverse solar access, overshadowing, or separation issues". The proposal does not create adverse solar access, overshadowing or separation issues, as demonstrated in the SEPP 65 compliance table at **Appendix 1**. The proposed floor to ceiling heights are also compliant; pursuant to Part C (1.3) Control C1 the "commercial component of the building" complies with the specified floor to ceiling heights.

The proposal provides an appropriate density on the site maintaining consistency between the western, eastern and northern components, whilst minimising negative externalities experienced by adjoining properties. The HLEP specifies a maximum FSR of 1:1 for the site. The maximum FSR proposed in this application 1:1.055. This FSR breach is derived the design amendments mentioned above and a desire to maximise solar access and natural ventilation throughout the new dwellings. The current design achieves a highly developed architectural resolution and residential amenity, whilst having minimal external impact on the locality and adjoining properties.

The bulk and scale is further justified in the Clause 4.6 Variation Request for Floor Space Ratio provided at **Appendix 2**.

Furthermore, it is noted that the provision of 17 street trees assists in enhancing the landscape character of the business strip and shielding the presentation of the built forms, as shown in the Landscape Plans at **Appendix 6**. This assists in mitigating the visual impact of the presentation of the development, which is a suitable bulk and scale for this site.

Overall, the proposal significantly improves the quality of the streetscape and will assist in rejuvenating the neighbourhood of the Pendle Hill locality with a suitable bulk and scale.

6.3.2 Setbacks and Separation

The setbacks provided by the proposal protect the residential amenity of adjoining properties and allow for the maximisation of open space on the site. As seen in the architectural package prepared by AN+A at **Appendix 4** and the DCP table of compliance prepared by CPSD at **Appendix 1**, the buildings setbacks are generally compliant with those specified in the HDCP and the RFDC Rules of Thumb.

The shop top housing component of the development, on the corner of Great Western Highway and Pendle Way is built to the site boundary, consistent with the existing improvements on the site (Photo 13). However, unlike the existing improvements on the site the proposal will seek to activate this dual frontage through the provision of retail and commercial space. This will contribute positively to the amenity of the current area providing casual surveillance that was not previously available. The Site Analysis Plan at **Appendix 4** and Photo 14 below show that the setback provided for the shop top housing component is consistent with that of the "Downtown Bar & Grill", which provides no front setback on the north western corner of Great Western Highway and Pendle Hill.



Photo 13: Existing "Carasel" building at 510 Great Western Highway. (Source: CPSD)



Photo 14: The "Downtown Bar & Grill" at 502-508 Great Western Highway. (Source: CPSD)

The multi dwelling housing to the north of the site provides a generous rear setback to the adjoining residential properties. The rear setback control in the HDCP requires a minimum 3m setback; the proposal provides a setback that ranges from 5.6m to 11.1m allowing large areas of private open space with a northern orientation to maximise solar amenity. The side setback of the multi dwelling housing component is 3m, well in excess of the 900mm minimum side setback. However, the DCP specifies a second storey setback of 4m from the side property boundary. The setting back of the building at the first and second storeys would be visually incongruous and would compromise the design consistency throughout the site. The current 3m setback has no notable impact on adjoining properties and all windows positioned on this setback will be fixed and closed and will not be associated with any main living areas.

The residential flat building to the west of the site is fully compliant with the setback and separation requirements of the DCP and RFDC (refer to the SEPP 65 and RFDC Compliance Table prepared by AN+A at **Appendix 7** and the DCP compliance table prepared by CPSD at **Appendix 6**). The RFB provides a 6m setback to its western boundary, with the only incursions into this setback zone being for the purpose of enhancing privacy and solar amenity. The design of the western elevation of the RFB ensures the privacy of the adjoining residential property and the future residents on the site is maintained. The buildings front setback is provided in accordance with the 4m control specified for "corner parcels". Whilst it is noted that the residential flat building itself is not located on the corner of Great Western Highway and Pendle Way the parcel of land that is the subject of this proposal is a corner parcel. Therefore the 4m setback is applicable allowing the activation of the Great Western Highway street frontage through the provision of ground floor access to four apartments and allowing sufficient capacity for landscaping.

Overall the setbacks provided are considered to be the best outcome for the site allowing a logical and consistent architectural design whilst having minimal impact on the residential amenity of adjoining properties.

6.3.3 Design and Aesthetics

The redevelopment of the subject site is a unique opportunity to enhance and regenerate the existing improvements on the site and activate the intersection between Great Western Highway and Pendle Way. As discussed in detail in the SEPP 65 and RFDC Compliance Table prepared by AN+A provide at **Appendix 7**, the proposal provides a contemporary built form which is appropriate in terms of bulk, density and scale in the local context. This is achieved by providing a mixed use development which cohesively integrates with the

ground-floor non-residential spaces with residential apartments above, which creates the opportunity for future residents to enjoy the local outlook as well as enjoying an appropriate level of privacy. The built form incorporates a mixture of vertical and horizontal elements which are supplemented by landscaping and operable privacy mechanisms which endorse activity between light and dark from within the building (refer to architectural plans at **Appendix 4** and photomontages at **Appendix 5**). This creates an interesting and lively relationship at the street boundaries which engages and connects with the public forum.

The proposal directly relates to the street, providing pedestrian access to the entry points of the site and to the terraces of the ground-floor residential units which are demarcated by a raised wall structure and privacy fencing. In conjunction with the modulated building elevations the proposal results in a built form which responds to the human scale while also creating an independent roof line which strengthens the form of the building form the adjacent buildings.

As discussed in the SEPP 65 Design Verification Statement prepared by AN+A provided at **Appendix 7**, the evolution of the design of the building has taken into consideration the concepts of good urban design and the comments provided by Council's Planning Officers. The proposal achieves adequate separation between the buildings, the opportunity to manage and define the level of privacy from each unit, direct relation to the street, and an aesthetically pleasing design and scale of development.

The design is sensitive to maintaining the amenity of current and future neighbouring developments by providing a floor plan layout which enables suitable building separation, placement of habitable rooms and windows and private open space. As discussed in detail in the SEPP 65 and RFDC Compliance Table prepared by AN+A and provided at **Appendix 7**, the proposal is designed to enhance the privacy and amenity of the future occupants within the site and of neighbouring sites.

The adequacy of the design of the development is demonstrated by the following elements:

- The proposal provides a building form which addresses the boundaries of the site to create an active urban edge which activates the interface with the public domain;
- The height and density of the building is consistent with the objectives contemplated in the planning controls;
- The size and arrangement of the floor plates ensure that the internal amenity of apartments is maximised for natural light and cross ventilation;
- Apartments are provided with appropriately sized and located areas of private open space;
- Access between the private and communal areas within the site is direct, safe and efficient; and
- The proposal provides a direct and efficient arrangement for vehicular ingress and egress, including a dedicated loading bay and waste storage and collection area which accommodates the needs of the commercial and residential occupants of the site, as well as their visitors and customers.

6.3.4 Solar Access

The proposed development has been carefully designed to achieve a high level of amenity with due consideration to the ability of each apartment to benefit from receiving solar access, adequate privacy and separation, natural ventilation and providing floor plan layouts which are efficient and have a high level of liveability. This focus on achieving a high level of amenity is also balanced with the requirements to satisfy the RFDC Rules of

Thumb and thermal comfort requirements and providing an interesting architectural form which supports the transitioning character of Pendle Hill.

The site is subject to a north-south orientation, the design has been deliberately articulated to minimise single south facing orientation and maximise solar access. However, due to the orientation of the site the provision of 20 (32%) single aspect south facing apartments is unavoidable. The maximum depth of single aspect apartments is 9m with no living spaces extending beyond the 8m specified in the HDCP. In each case of non compliance the only non complying area is the apartment's bathroom. The number of single aspect south facing apartments is justified through the proposal compliance with the RFDC's solar access requirements and recognition of the orientation of the site. The SEPP 65 and RFDC Compliance Table at Appendix 7 and the BASIX certificate at Appendix 10 further demonstrates "how site constraint and orientation prohibit the achievement of these standards and how energy efficiency is addressed". Additionally, the SEPP 65 and RFDC Compliance Table at Appendix 7 states "The majority of apartments have kitchens located 8 metres or less from a window. North facing middle apartments have kitchens located 9 metres from window. These deeper apartments are all north facing, have generous north facing outdoor spaces, open plan living space & mostly provide cross ventilation." These design initiatives mitigate the negative impacts of minor non compliances and ensure an equitable and generous provision of space and solar amenity throughout the entire site.

The RFDC Rules of Thumb state that "[l]iving rooms and private open spaces for at least 70% of apartments in a development should receive a minimum of three hours direct sunlight between 9 am and 3 pm in mid winter". As seen on the Solar Access Plans provided by AN+A at **Appendix 4**, 70% (43) apartments achieve the specified three hours of direct sunlight between 9am and 3pm in mid winter. Six of the single aspect south facing apartments are provided solar access through the use of skylights, employed pursuant to the "better design practice" recommendations of the RFDC. The use of these skylights is also addressed in the SEPP 65 and RFDC Compliance Table at **Appendix 7**.

Alternative architectural designs were explored during the development of this proposal, however the final submitted design is considered to result in a superior design outcome in terms of overall amenity. The proposed design provides an interesting architectural presentation, suitable access to sunlight, as well as general protection to get a suitable level of thermal comfort. The design enhances daylight access to the POS and living areas by providing staggered setbacks to the built form and openings in the tops and sides of the balcony coverings. The proposed design maintains suitable separation and privacy between units which are simultaneously integrated into the architectural expression of the mixed use development. Furthermore, the proposed built form respects the potential for the adjoining site to the north and west to receive solar access and privacy in its future redevelopment.

The units which achieve a high degree of daylight access to the POS and living areas are are those at the rear of the shop top housing and RFB components (north facing). These units are provided with large areas of private open space and improve the ability of the development to satisfy the numerical requirements for solar access. The site plan also allows for communal open space to receive a high level of solar access, improving the residential amenity of the building and encouraging the use of communal open space on the site. All of the terraces achieve a high level of solar amenity, particularly in living areas and the large ground-floor private open space areas.

This proposal is regarded as providing an optimal design and floor plan layout which is responsive to the site context and orientation. The proposed development achieves a satisfactory level of solar access which fosters a high level of amenity to the occupants and a suitable balance between creating interesting architectural features which contribute to the streetscape character of Pendle Hill, POS areas which achieve a balance between gaining exposure to solar access and providing cover from environmental elements and a

suitable level of thermal comfort. For these reasons, this is the preferred design outcome for this development.

6.3.5 Internal Amenity

The proposed development has been produced with particular attention to the amenity of its future occupants, neighbouring properties and the public domain. As discussed in the SEPP 65 Design Verification Statement prepared by AN+A provided at **Appendix 7**, the development is responsive to the opportunities and constraints of the site and its surrounds with regard to topography, vegetation, neighbouring buildings, noise and physical impacts of street traffic, solar access and views. This has culminated in generating a unique design which creates a sense of space, connectivity to public and private space, and fixed and manoeuvrable mechanisms to enable users to control acoustics, solar access and privacy to their units. This is achieved by the following design initiatives:

- providing suitable separation not only between buildings, but also separation to living areas and bedrooms;
- louvre devices which allow flexibility in setting day / night privacy and managing solar penetration to the units;
- short paths of travel between units to access stairs and lifts which enable ease of access;
- Mechanical ventilation shall be included where required to allow airflow throughout the dwellings whilst minimising noise intrusion levels. This feature is referenced in the Acoustic Report prepared by Acoustic Noise & Vibration Solutions and provided at Appendix 15.
- generous open floor plans with no apartments over 15m in depth or under 4m wide;
- a floor plan layout which is highly efficient and fosters high quality living and use of spaces;
- providing 12 adaptable units of 2 bedroom and studio size (details in Appendix 18);
- terraces or balconies to all units which provide an attractive outlook to the surrounding areas and feature landscaping where appropriate;
- easily accessible garbage storage and sorting facilities;
- accessible vehicular entry points and a legible parking and circulation network; and
- safety by design initiatives to enhance the sense of safety and security, as referred to in Section 4.4.3 of this statement.

Specifically the internal amenity is numerically quantified as follows;

- 53% of dwellings are dual aspect (28 apartments and 10 terraces);
- There are 32% (20 of 62) single aspect, south facing apartments (see Section 7.3.4 of this report for further detail);
- Ceiling heights to habitable rooms are a minimum of 2.85m;
- 67.75% of apartments benefit from cross ventilation; and
- All balconies achieve a minimum width of 2m.

The design of the development results in a positive outcome with regard to residential amenity. Careful consideration has been undertaken to mitigate potential aspects of the design which could degrade the quality and liveability of the units both individually and for the development as a whole. We consider the amenity of the development to be of high quality and a desirable outcome.

6.3.6 Privacy

Privacy for residents within the subject site and on adjoining properties has been a major consideration throughout the development of the site's design. Informed amendments have been made following pre DA consultation to mitigate potential concerns regarding the privacy of properties to the west. The following building and site design features, seen in the drawings prepared by AN+A and provided at **Appendix 4**, ensure an appropriate level of privacy is achieved internally and for adjoining sites;

- Setbacks and Separation See discussion of Setbacks & Separation in Section 7.3.2 of this report.
- Western Elevation Refer to West Wing Elevations prepared by AN+A at Appendix 4. Appropriate measures have been taken to prioritise the privacy of residents adjoining the site to the West. All windows facing the adjoining site will be provided with suitable treatment to ensure that overlooking is minimised. It is noted on the plans that the windows included on the terraces at the western and eastern elevation will be fixed and closed and not provided in conjunction with any living spaces.
- Northern Elevation Refer to North Terraces Elevations prepared by AN+A and provided at Appendix 4. The building form is appropriately setback from the northern boundary to enhance the privacy of residential development to the north. The ground-floor setback ranges from 5.6m to 11.1m, with the first floor set back ranging from 8.7m to 14.1m and the second floor setback ranging from 10.9m to 16.4m. These setbacks have been provided well in excess of the 3m minimum setback specified in the HDCP as a means of ensuring that there is no impact on the privacy of sites to the north.

These features have been consciously included to reach a highly resolved mutually beneficial solution to privacy concerns. As noted in the SEPP 65 and RFDC Compliance Table prepared by AN+A and provided at **Appendix 7**, the design will have minimal impact on the residential amenity of adjoining properties and will provide a high level of internal privacy.

6.3.7 Public Domain

The proposal is a positive compatible contribution to the public domain given:

- The building achieves a desirable interface with public areas in terms of the streetscape presentation and activation;
- The building addresses and integrates with both of its street frontages through the inclusion of active facades with design elements that promote a visual relationship with public pedestrian areas adjacent to, and surrounding, those edges of the site;
- Vehicle access is consolidated and provides simple and direct vehicular movements throughout the site;
- Service areas and plant rooms are integrated into the building design and do not visually dominate the streetscape or pedestrian areas adjoining the site;

- Many apartments enjoy a direct visual connection which overlooks the public domain ensuring a high degree of passive surveillance which will encourage a sense of safety within the public spaces around the site;
- The apartments with a northerly outlook have a substantial setback to the adjoining existing residences, the upper levels are gradually set back and privacy mitigation measures are provided to protect the privacy of neighbouring residents;
- The architectural treatment and landscaping elements will achieve a suitable streetscape presentation; and
- The development seeks to act as a catalyst for urban growth and transformation the locality, providing positive future direction for the locality.

6.3.8 Heritage

The site does not comprise an item of heritage significance, is not within a heritage conservation zone and is not within the vicinity of any items of heritage significance.

6.3.9 Building and Construction

This report provides a BCA compliance review (**Appendix 16**) of the proposal and recommendations to ensure that the proposed building is capable of achieving compliance with the requirements of the BCA and relevant adopted standards without undue modification to the design or appearance of the building.

Compliance with the BCA will be demonstrated with the Construction Certificate documentation.

A final Construction Management Plan will be prepared by the appointed contractor, once the terms of any approval granted by Council are known. Accordingly it is anticipated that Council will include appropriate conditions within any consent notice requiring the preparation and approval of a CMP prior to works commencing.

6.4 Natural Environment

6.4.1 Flora and Fauna

The existing physical condition of the site is such that it does not have any ecological attributes which, if lost, would impact upon any threatened species, population, ecological community or habitat.

The Arborist Report prepared by Naturally Trees, provided at **Appendix 12** identifies four trees of varied levels of significance (refer to Figure 6 for location). Pursuant to the findings of the Arborist report, appropriate tree sensitive construction measures will be implemented to minimise root impact within the TPZ of these trees once the location of "structural woody roots" are determined.

6.4.2 Tree Removal

The Arborist Report prepared by Naturally Trees and provided at **Appendix 12** identifies three trees that will require removal for building and driveway construction and/or level variations within TPZ (refer to Figure 6 for location). With regard to the removal of these trees the Arborist Report states;

"The proposed development will necessitate the removal of three trees of low and very low retention value [...] None of these trees are considered significant or worthy of special measures to ensure their preservation."



Figure 6: Tree Management Plan, Dwg No. TMP01 at Appendix 12 showing the location of important trees and trees to be removed.

6.4.3 Landscape

The application is accompanied by detailed landscape scheme, prepared by AN+A and provided at **Appendix 6**. Notably the landscape design includes concludes:

- 2959.755m2 (42.5% of the site area) of communal open space. 872.9m2 more than is required by the HDCP;
- 1133m2 of private open space;
- 1328m2 deep soil (32% of all open space);
- The planting of 17 street trees; and
- The retention of key existing trees.

Further detail and a full schedule of specifications are provided in the Landscape Plans at **Appendix 6**.

6.4.4 Water Management and Drainage

Existing drainage conditions, proposed design and relevant impacts associated with development are contained in the Stormwater Drainage Services Notes and Drawings prepared by Partridge Structural provided at **Appendix 11**.

We understand that the applicant is currently engaged in negotiations regarding the provision of an easement to the north west of the property. For further detail please contact the applicant.

6.4.5 Soil Management

Refer to **Section 4.2** for the SEPP 55 assessment with regard to potential soil contamination.

Also refer to the Erosion and Sedimentation Control Plan provided at **Appendix 11** which provides measures to ensure the development includes appropriate soil management and sedimentation control.

6.4.6 Air and Microclimate

Some dust is anticipated during the construction period, particularly given demolition and excavation is involved. This impact can be managed through measures such as wetting down work areas/stockpiles, stabilising exposed areas, preventing material tracking out onto public roadways, covering loads on all departing trucks and working to weather conditions. The proposal is otherwise not expected to give rise to any long term or adverse impacts on local or regional air quality.

A final CMP will be provided by the builder, once appointed, prior to the issue of the Construction Certificate.

The proposal is otherwise not expected to give rise to any long term or adverse impacts on local or regional air quality.

6.4.7 Noise & Vibration

The application is accompanied by an Acoustic Report by Acoustic Noise & Vibration Solutions and provided at **Appendix 15**, which addresses the following matters: -

Traffic Noise

The report addresses traffic noise in-depth, providing recommendations on the building materials to be used and construction methods to be adopted to ensure that the proposal is built to achieve acceptable internal noise levels. The proposal is capable of achieving "[r]ecommended design sound levels and reverberations for building interiors" and Clause 102 of iSEPP (Section 4.4.5 of this report).

The recommendations made by regarding the specific design of windows/sliders, doors, walls and roofs are to be included at post DA stages.

Mechanical Ventilation

The Acoustic Report notes that windows and doors must be closed to achieve satisfactory noise intrusion levels. For this reason mechanical or natural ventilation systems are proposed as a means of increasing the residential amenity of effected dwellings. Mechanical ventilation, where provided, will be compliant with acceptable noise intrusion levels for habitable rooms and bedrooms and will be installed with insulations to minimise external noise circulation.

Any external features of the mechanical plant will be selected post DA stage, at which point a fully detailed assessment of treatments will be conducted once pant selections are finalised. However, the majority of plant and equipment is internally located within the development, thereby minimising the potential impact on nearby residential receivers and the general public.

The building layout and orientation of the building has been designed to ensure that the acoustic privacy of surrounding residents and future occupants is protected. This has been

achieved through the careful consideration of the layout of the development including the significant setback of the building form the northern boundary, compliant setbacks to the western boundary and commercial spaces which are directed away from neighbouring residences.

Moreover, the noise levels within the development will satisfy the requirements of the HDCP and the relevant Australia Standards.

6.5 Movement and Access

6.5.1 Transport

The site is accessible by public transport being within close proximity to bus and train stations.

• Bus - There are two bus stops located within the immediate vicinity of the subject site, as seen in Photos 15 and 16 below. There is a bus stop located immediately adjacent to the proposed shop top housing component of the site on Great Western Highway (Photo 15). Additionally there is a bus stop located at approximately 8A Pendle Way 30ms from the sites eastern street frontage (Photo 16).

These bus stops provide frequent and direct access from the site to Pendle Hill Train Station, Wentworthville, Westmead, Mays Hill, Harris Park and Parramatta.





Photo 15: Bus stop immediately adjacent to the site on Great Western Highway. (Source: CPSD) Photo 16: Bus stop on Pendle Way 30m form the site's eastern street frontage. (Source: CPSD)

• **Train** - The site is approximately 1.1km from Pendle Hill Train Station. From Pendle Hill Station it is approximately 50 minutes to Sydney's Central Station and 10 minutes to Parramatta Station.

6.5.2 Roads and Traffic

The Traffic and Parking Assessment Report prepared by Varga Traffic Planning and provided at **Appendix 8** has considered the existing and proposed traffic conditions as a result of the proposal.

It is clear that the proposed development will not result in any appreciable change in the traffic generation potential of the site, and it is therefore reasonable

to conclude that the proposed development will not have any unacceptable traffic implications in terms of road network capacity.

The proposal will provide vehicular access from Pendle Way, utilising the site plan to ensure a clear delineation between public and private access. The minimal traffic generation and the legibility of internal circulation enhance the amenity of the proposal whilst not detracting from the current access and traffic conditions of the locality.

6.5.3 Car Parking

The Traffic and Parking Assessment Report prepared by Varga Traffic Planning and provided at **Appendix 8** has considered the appropriateness of the proposed number of car parking spaces and traffic generation of the proposal, concluding;

"In summary, the proposed parking and loading facilities satisfy the relevant requirements specified in both Council's Parking Code as well as the Australian Standards and it is therefore concluded that the proposed development will not have any unacceptable parking or loading implications."

The proposal will include 118 car parking spaces comprising:

- Basement level:
 - 30 retail/commercial spaces;
 - 65 residential spaces;
 - 13 residential visitor spaces; and
 - 1 car wash space.
- Northern multi dwelling housing building;
 - 10 residential spaces (1 at the ground floor of each dwelling); and
 - Each dwelling will also have the capacity to accommodate 1 parking space on driveways for visitor parking.
- 1 loading bay for MRV / vans / cars.
- 44 bicycle spaces.

The basement plan provides a clear differentiation between public and private car parking. Two boom gates are provided to restrict access to private parking areas on the basement level, with a further boom gate provided to restrict public access to the private drive which services the terraces.

6.5.4 Servicing / Waste

Demolition and Construction Waste

To ensure that resources are conserved and waste is processed responsibly by minimising waste generation and maximising recycling of materials. The demolition and construction phase will be appropriately managed to mitigate the environment impact of the

development. Appropriate strategies for environmental protection are also demonstrated in the Sedimentation and Erosion Plan (refer to **Appendix 11**).

Operational waste

An integrated and accessible garbage collection and management system is provided.

A private waste collection contractor is proposed. Refer to the Waste Management Plan prepared by AN+A and provided at **Appendix 17** for further details. An On-Going Waste Management Plan is also provided at **Appendix 17** to show the ease of access from residential dwellings and commercial tenancies to waste disposal areas. The proposed ongoing waste management provides the most practical solution to the issue of waste disposal and does not compromise the residential amenity of future residents.

The site is capable of being accessed by garbage servicing vehicles in a convenient and timely manner. A Waste Management Report prepared by AN+A is provided at **Appendix 17.** The Traffic and Parking Assessment Report at **Appendix 8** provides details of "Loading/Servicing Provisions" stating that; "the manoeuvring area has been designed to accommodate the swept turning path requirements of these medium rigid trucks, allowing them to enter and exit the site in a forward direction at all times." Therefore as per the specifications and findings of the Waste Management Report and Traffic and Parking Assessment Report the proposed design and layout of the site will allow for the efficient and practical management of waste throughout the occupation and continued operation of the site.

6.5.5 Pedestrians and Accessibility

Accompanying the application are BCA and Access Reports provided at **Appendices 16** and 18 which contains various detailed design recommendations to ensure the building meets applicable access codes and legislation. The development is considered capable of complying with the statutory requirements outlined in both the BCA and Access Reports; however, more design detail will be required at post DA stages.

In our opinion the recommendations made regarding BCA and Access are of a minor nature, and it would be reasonable for those outcomes to be ensured by means of suitable conditions within any Notice of Determination requiring compliance to be demonstrated with any Construction Certificate.

6.6 Site Suitability

6.6.1 Geotechnical

The Geotechnical Report prepared by STS GeoEnvironmental and provided at **Appendix 9** notes that: -

- Construction of the basement levels will necessitate excavation to 3m;
- Basement Excavation will encounter concrete, topsoil, silty clays and weathered shale:
- No unusual difficulties are foreseen in carrying out excavation of the surface sands and filling to depths in the order of 0.9-1.05m using conventional earthmoving equipment (excavators without assistance); and
- Heavy ripping, rock cutting and rock breaking plant may be necessary for removal of the denser soils and weathered shale.

6.6.2 Contamination

Refer to **Section 4.2** for the SEPP 55 assessment. Contamination was not considered to be an issue at pre DA consultation. However, a specialist contamination consultant has been engaged and will provide specialised advice/assessment of the site should it be requested by determining body.

6.6.3 Bushfire

The site is not within a Bushfire area.

6.6.4 Flooding

Flooding is discussed in the DCP table of compliance at **Appendix 1** and the Sediment and Erosion Plan at **Appendix 11**. The proposal will not create any negative impact relating to the potential flooding concerns of the locality. As seen on the Stormwater Drainage Services Notes and Drawings prepared by Partridge Structural provided at **Appendix 11** sufficient measures have been taken to ensure that vulnerable areas at the south of the site (near Great Western Highway) are not impacted/overburdened by the proposed drainage systems.

6.6.5 Watertable

The development does not include excavation which is below the watertable. As identified in the Geotechnical Report at **Appendix 9**.

6.6.6 Services and Utilities

The site contains adequate facilities which will be retained, reused and upgraded where needed to cater for the proposed mixed use development. All installations will be capable of meeting the requirements under the Australian Standards and the Building Code of Australia (see **Appendices 16 and 18**).

6.6.7 Hazards (Other)

The subject is not affected by any known hazards. The Geotechnical Investigation prepared by STS GeoEnvironmental (**Appendix 9**) demonstrates that the conditions of the site are appropriate for the excavation and construction works proposed, and provides recommendations to protect the sub-surface conditions and neighbouring properties.

The site is therefore suitable for the development proposed as there will be no adverse impact from a geotechnical, contamination, bushfire or flooding perspective; and the development does not interfere with the watertable and there are no natural hazards that may impinge upon development potential.

6.7 Social and Economic Effects

6.7.1 Social

The design and layout of the site provide vast social benefits, activating street frontages on both Great Western Highway and Pendle Way through the provision of strategically located commercial tenancies. The proposal also provides tangible public benefits in the form of public parking for commercial premises which offer the opportunity to accommodate new boutique cafes, retail and commercial shops to suit the social needs of the community. Overall the proposal considerably improves the presentation of the site and positively activates the locality.

6.7.2 Crime and Safety

The proposal is for a mixed use development with a high level of amenity, casual surveillance and ultimately public safety within the building and surrounding area. The proposal will assist in revitalising and activating the premises and will provide appropriate lighting and security measures to protect the safety of neighbouring premises, residents and the local community.

Crime Prevention through Environmental Design (CPTED) is a recognised model which provides that if development is appropriately designed it can reduce the likelihood of crimes being committed. By introducing CPTED measures within the design of the development, it is anticipated that this will assist in minimising the incidence of crime and contribute to perceptions of increased public safety. As reflected in the Security Management Plan prepared by AN+A provided at **Appendix 14**, the proposal has been designed to take into consideration these principles as follows:

<u>Surveillance</u>: This principle provides that crime targets can be reduced by effective surveillance, both natural and technical. In this regard, the development has been designed to directly front each of the road frontages with direct surveillance of the public domain from the non-residential units, pedestrian access points and the upper level apartments.

The layout of the development also provides lines of sight between public and private spaces which will be maintained during the night by a suitable lighting scheme. The proposed development introduces 24 hour activity within the local footpath and road network and casual surveillance to ensure the safety of residents, staff, customers, neighbouring properties and the public.

<u>Access Control</u>: This principle provides that barriers to attract/restrict the movement of people minimises opportunities for crime and increases the effort required to commit crime. The non-residential premises benefit from designated access points which are clearly visible and will be overseen by staff members.

The residential flat building provides two dedicated and secure lobby and entry areas via Great Western Highway. The shop top housing building provides one dedicated and secure lobby and entry area via Great Western Highway. All three of these lobby and entry areas will have access provided from the secure underground car park facilities with separate lifts provided for public access to commercial tenancies and private access to residential accommodation. The car park is accessed via Pendle Way and the residential car park is secure and clearly demarcated. Outside of business hours a primary security door is closed and the entire car park is only accessible to residents via a security pass.

The multi dwelling housing at the rear of the site provides secure ground floor access to each dwelling individually. The communal open space to the south of the multi dwelling housing is secured by gated entry of the outdoor common area from Great Western Highway. Vehicular access is provided to these dwellings via a private driveway from Pendle Way. The private driveway is secured by a boom gate is provided and garages are included on the ground floor of each dwelling.

<u>Territorial Reinforcement</u>: This principle provides that well-used places reduce opportunities for crime and increase risk to criminals. There is a clear delineation between the public street and footpath verge, the non-residential tenancies on the ground floor of the eastern building and the private residential areas. The future occupants of the development benefit from direct access to encourage the connection of these spaces. In this regard the development provides for commercial spaces and residential units which will create activity within the site.

<u>Space Management</u>: This principle provides that space which is appropriately utilised and well cared for reduces the risk of crime and antisocial behaviour. Strategies to implement

this principle include, site cleanliness, rapid repair of vandalism and graffiti, the quick replacement of broken light fixtures/globes and the removal or refurbishment of decayed physical elements. The presentation of the non-residential elements of the development will maintain a high quality standard.

The proposed works will assist in improving the presentation of the premise, which will improve the amenity, casual surveillance and ultimately public safety and sense of security within the site and surrounding area.

6.7.3 Economic and Employment

The proposed development will have a positive economic impact by providing a higher standard of architectural and urban design than the existing commercial premises. The development will also offer additional housing choice for a constantly changing population. Between the 2006 and 2011 census the LGAs 'Young Workforce' (25-34 year olds) experienced the greatest increase, growing 2.3%. In this same time period the number of 'Parents and Home Builders' (35-49 year olds) decreased by 1.1%. As a result of the continually changing population structure of the LGA this development (across three buildings) provides a vast range of studio (21%), one bedroom (4%), two bedroom (39%) and three bedroom (36%) apartments/dwellings.

The proposal also offers employment to the community through non-residential services and related employment opportunities, whilst creating jobs during the construction phase. The proposal increases the number of public car parking spaces on the site through the provision of 30 spaces for the commercial tenancies.

7. Conclusion

This application seeks approval for a mixed use development at 510-524 Great Western Highway, Pendle Hill. The proposal seeks to provide diverse housing typology, incorporating shop top housing, residential flat development and multi dwelling housing on a 6,956.228m2 corner site toward the south of the Pendle Hill locality. This report has demonstrated that the proposal is an appropriate response to the physical characteristics of the site, its locality and immediate surrounding area.

The subject proposal provides a high quality residential living environment which is supported by six (6) non-residential spaces to be utilised as retail/commercial premises (fitout and use subject to a separate DA). In summary the proposal is considered to: -

- Provide a development that reflects the desired future character of the surrounding area as outlined in the planning controls of the Holroyd Local Environmental Plan 2013;
- Provide an increase in housing choice to meet demand within the area, desired pursuant to the strategic context of the site and the LGA;
- Provide an opportunity to diversify the housing stock of the locality by providing medium density mixed use development within an appropriate and compatible location;
- Provide high quality residential units which offer a high level of amenity and privacy to the future occupants;
- Be an appropriate response to the context, setting, planning instruments and preliminary assessment as required under the heads of consideration under Section 79C(1) of the Environmental Planning and Assessment Act, 1979;
- Asist in achieving the desired regional objectives and especially contribute to the housing targets established by State Government and Council population projections; and
- Have no adverse environmental impacts on adjoining properties and act as an innovative and appropriate response to the desired future character of the locality.

The minor variation proposed to the maximum floor space ratio development standard under the HLEP has been assessed with regard to all relevant matters for consideration under Clause 4.6 of the HLEP (**Appendix 2**). The variation is not considered to result in any adverse environmental impact and is supportable on environmental planning grounds.

Accordingly it is considered that the proposal will deliver a suitable and appropriate development within Holroyd LGA and is worthy of approval.



ARCHITECTS
NICHOLAS +
ASSOCIATES

6/1 MARY'S PLACE SURRY HILLS NSW 2010 T+61 2 8353 9500 ANPLUSA.COM

24th February, 2016

Attn: The General Manager Holroyd Council P.O. Box 42 Merrylands, NSW 2160

Dear Sir/Madam

SEPP 65 DESIGN VERIFICATION FOR DEVELOPMENT APPLICATION (DA/2015/361) - RESUBMISSION A

- I, Patrick Nicholas, RAIA NSW registration number 6672, hereby verify that:-
- 1. I designed, or directed the design, of the residential flat development at 510-524 Great Western Highway Pendle Hill and;
- 2. that the design quality principles set out in Part 2 of Sate Environmental Planning Policy No 65 Design Quality of Residential Apartment Development are achieved for the residential flat development at 510-524 Great Western Highway Pendle Hill.

Yours sincerely,

Patrick Nicholas

Director



Proposed Mixed-Use Development

510-524 Great Western Highway, **Pendle Hill**

REVISED TRAFFIC AND PARKING ASSESSMENT REPORT

24 February 2016

Ref 16054



Transport, Traffic and Parking Consultants 🔵 🔵 🥏







TABLE OF CONTENTS

1.	INTRODUCTION	1
2.	PROPOSED DEVELOPMENT	5
3.	TRAFFIC ASSESSMENT	15
4.	PARKING ASSESSMENT	21

LIST OF ILLUSTRATIONS

Figure 1 Location Site

Figure 3 Road Hierarchy

Figure 4 Existing Traffic Controls
Figure 5 Existing Parking Restrictions

Document Verification

Location:	510-524 Great Western Hwy, Pendle Hill	Job Number		16054	
Revision	Details	Prepared		Approved	
Final	Final for DA Submission	By	Date	By	Date
		TY	24/02/16	CP	24/02/16

1. INTRODUCTION

This report has been prepared to accompany a revised development application to Holroyd City Council for a mixed-use development proposal to be located at 510-524 Great Western Highway, Pendle Hill (Figures 1 and 2).

A development application was lodged in August 2015 for the demolition of the existing buildings on the site and the construction of a new mixed use development, comprising shop top housing, a residential apartment building and 10 residential terraces (DA 2015/361). After reviewing the original scheme Council provided a number of comments, including relating to traffic and parking, which have been addressed in the proposed revised scheme.

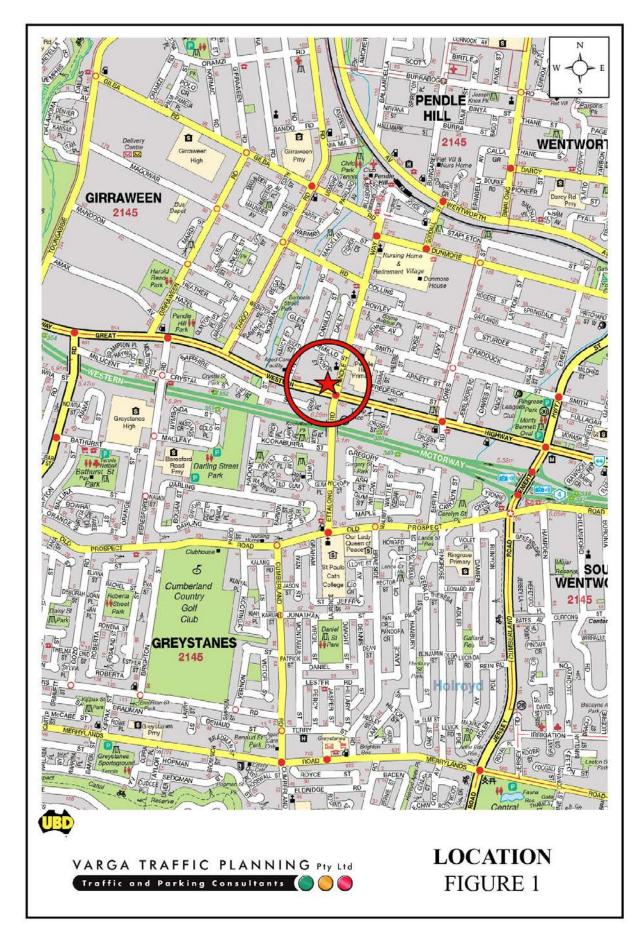
The revised scheme proposes a change in unit mix and nominal increase in the apartment yield, although a reduction in the overall number of bedrooms. The revised scheme also proposed the deletion of the commercial component and the reduction in floor area of the proposed retail and restaurant/café components.

Off-street parking for the residential apartments and the retail/restaurant tenancies is to be provided in a new single-level basement car parking area, whilst off-street parking for the residential terraces is to be provided in single garages plus private driveways, in accordance with Council's requirements.

The purpose of this report is to assess the traffic and parking implications of the development proposal and to that end this report:

- describes the site and provides details of the development proposal
- reviews the road network in the vicinity of the site
- estimates the traffic generation potential of the development proposal
- assesses the traffic implications of the development proposal in terms of road network capacity

- reviews the geometric design features of the proposed car parking and loading facilities for compliance with the relevant codes and standards
- assesses the adequacy and suitability of the quantum of off-street car parking and loading provided on the site.





2. PROPOSED DEVELOPMENT

Site

The subject site is located at the north-western corner of the Great Western Highway and Pendle Way intersection. The site has a street frontage of approximately 110 metres in length to Great Western Highway and approximately 32 metres in length to Pendle Way. The site occupies an area of approximately 6,956m².

The western portion of the subject site was previously occupied by two dwelling houses which has since been demolished. The eastern portion of the subject site is currently occupied by a trailer/towbar dealership and repair station. The existing site development is configured with 6 vehicular access driveways to Great Western Highway and 1 vehicular access driveway to Pendle Way.

Proposed Development

As mentioned in the foregoing, a development application was lodged in August 2015 for the demolition of the existing buildings on the site and the construction of a new mixed use development, comprising shop top housing, a residential apartment building and 10 x three bedroom residential terraces (DA 2015/361). After reviewing the original scheme Council provided a number of comments which have been addressed in the proposed revised scheme.

A total of 64 residential apartments are now proposed in the revised scheme as follows:

1 bedroom apartments:
2 bedroom apartments:
3 bedroom apartments:
3
TOTAL:
64

A retail and restaurant/café component is also proposed on the ground floor level of the shop top housing, comprising a cumulative floor area of 197m² and 60m² respectively.

Off-street car parking is to be provided in accordance with Council's requirements as follows:

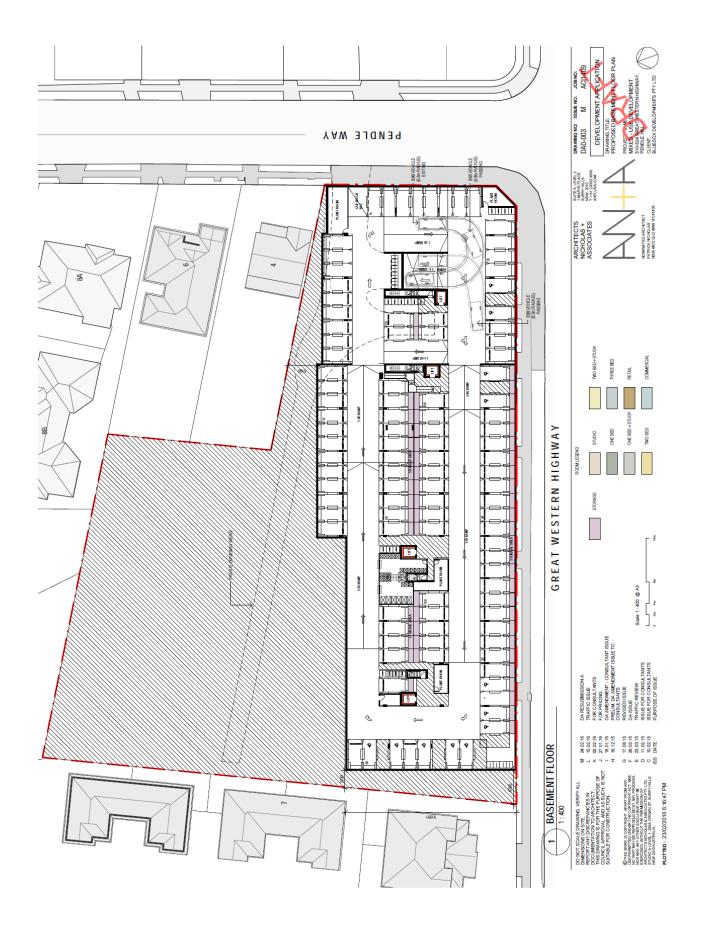
- a single-level basement car parking area is to be provided beneath the shop top housing and the residential apartment building comprising 74 resident spaces, 14 visitor spaces, 16 retail/restaurant spaces and 1 dedicated carwash bay
- each residential terrace is to be provided with an enclosed single car garage and also a
 private driveway that is capable of accommodating an additional parked car, with
 vehicular access into the residential terrace area to be restricted by a boom gate.

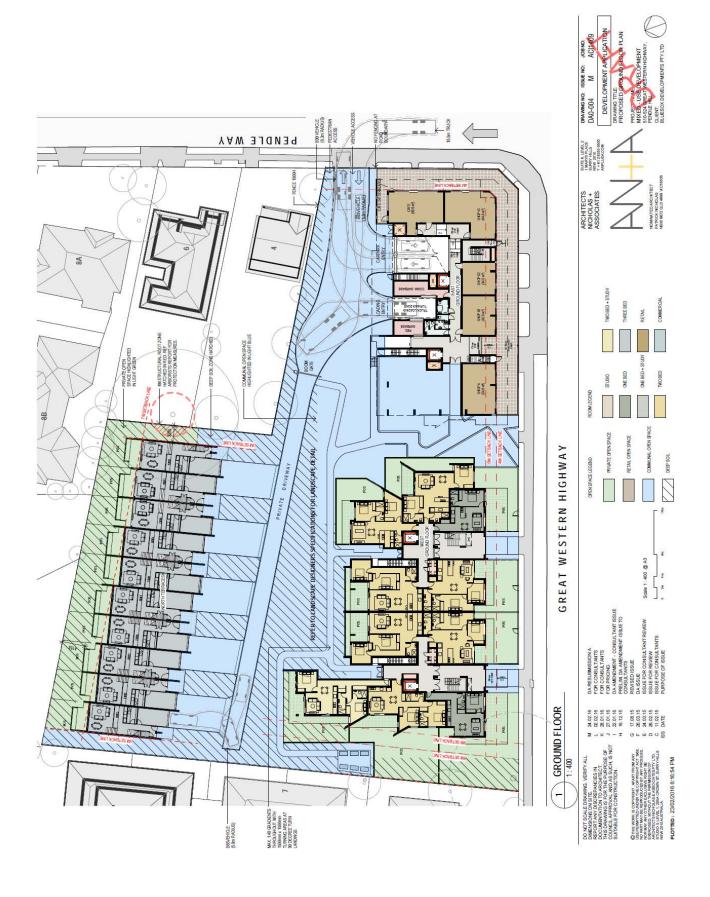
Vehicular access to the site is proposed via a new entry/exit driveway located at the northern end of the Pendle Way site frontage leading to a shared internal driveway serving the different components of the development.

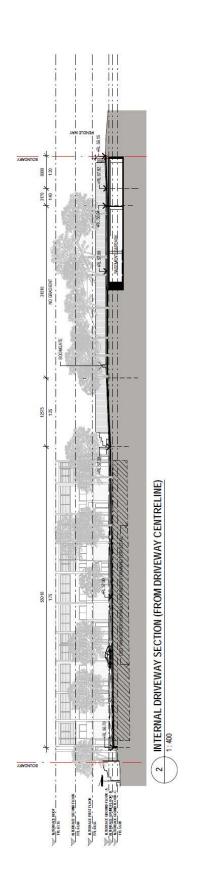
Further to the above, it is proposed to extend the existing central median island in Pendle Way in accordance with Council resolution to restrict right-turn vehicular movements into and out of the site. It is acknowledged that the proposed extension of the median island requires referral to the Local Traffic Committee and approval should be granted prior to the lodgement of the development application.

Waste collection for the proposed development is expected to be undertaken by a variety of commercial vehicles up to and including Council's 10.5m long rigid garbage trucks. Loading/servicing for the proposed retail/restaurant component is expected to be undertaken by a variety of light commercial vehicles such as courier vans, utilities and wagons, up to and including 6.4m long SRV trucks. The loading dock is proposed to be located to the west of the basement entry/exit ramp between the residential and commercial garbage rooms. Vehicular access to the loading dock is to be provided via the abovementioned shared private driveway out to Pendle Way.

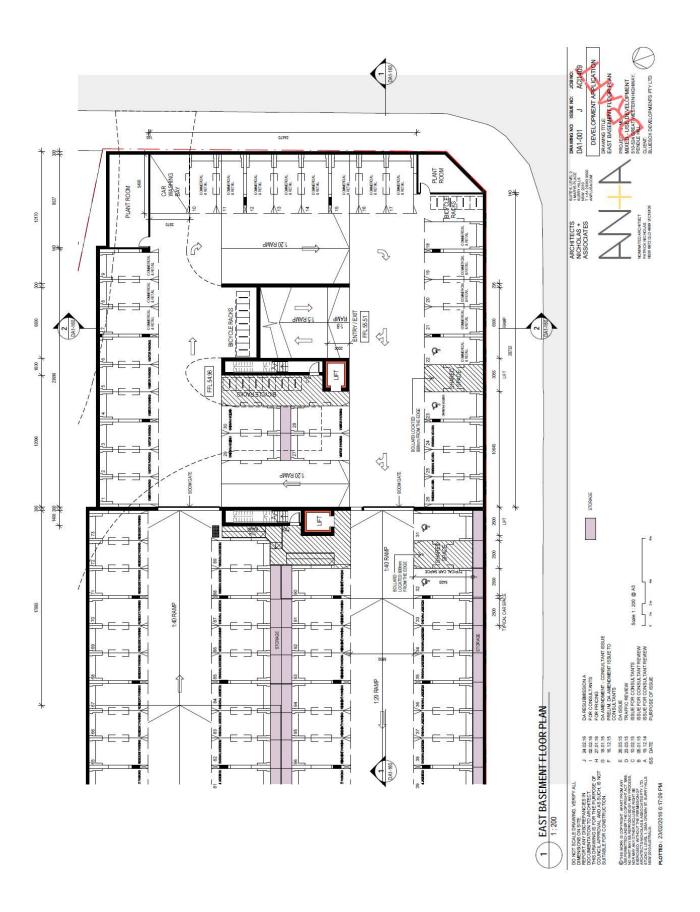
Plans of the proposed revised scheme have been prepared by *Architects Nicholas* + *Architects Pty Ltd* and are reproduced in the following pages.



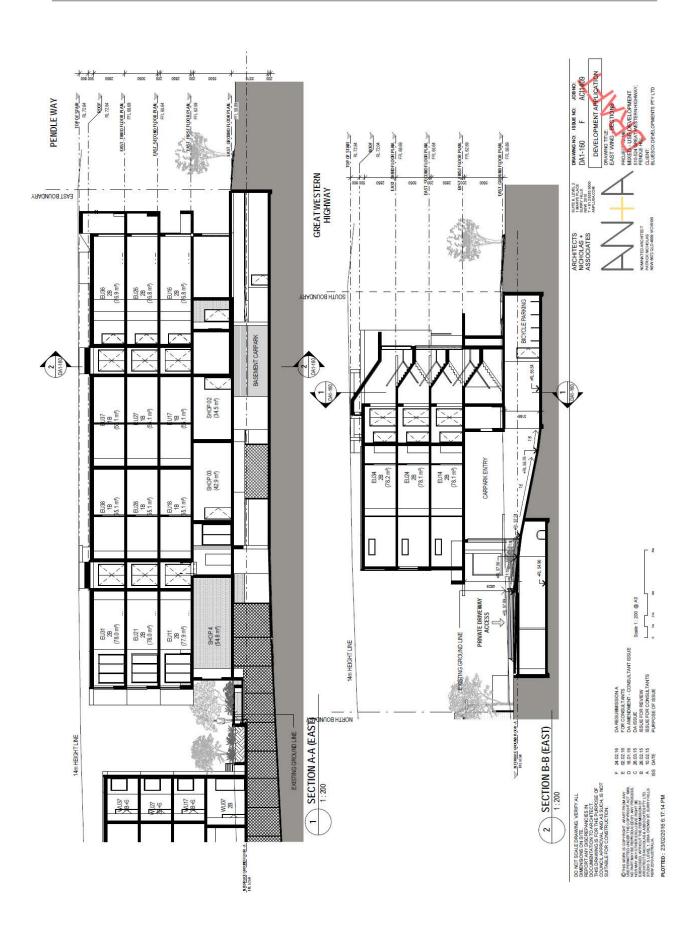


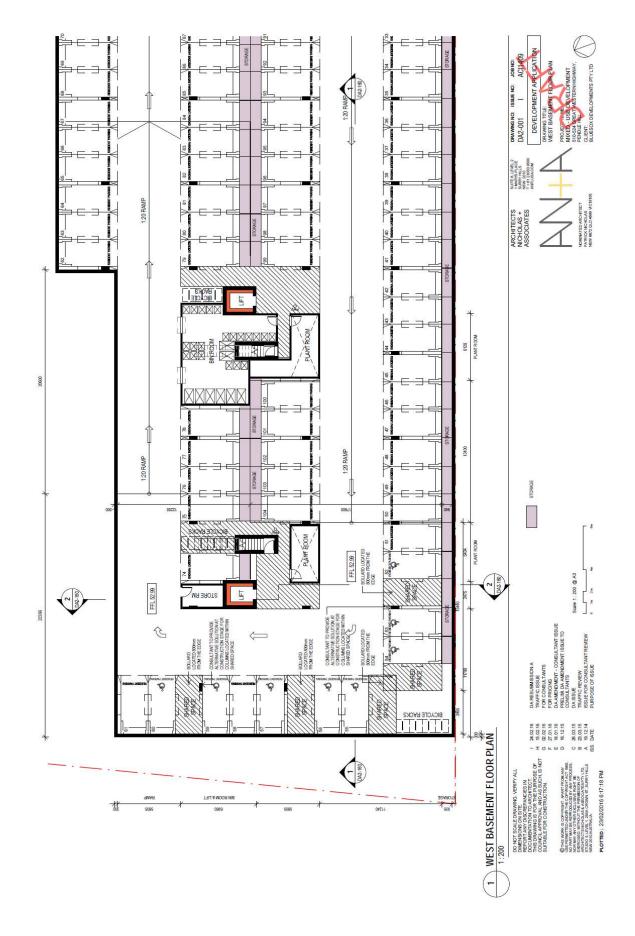


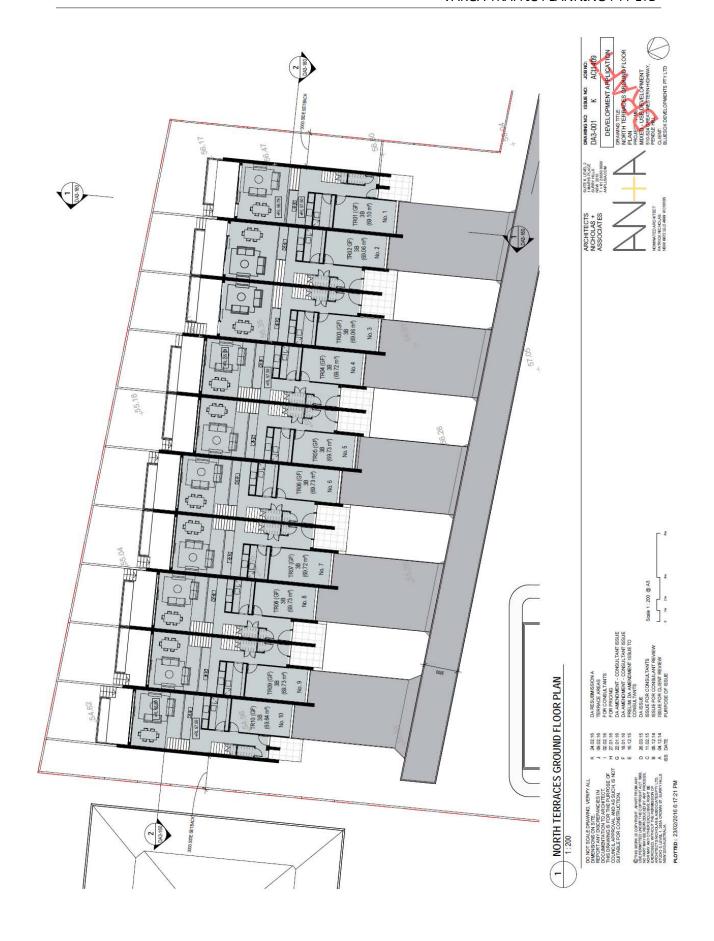












3. TRAFFIC ASSESSMENT

Road Hierarchy

The road hierarchy allocated to the road network in the vicinity of the site by the Roads and Maritime Services is illustrated on Figure 3.

M4 Western Motorway is classified by the RMS as a *State Road* and provides the key eastwest road link in the area, linking Strathfield and Glenbrook. It typically carries three traffic lanes in each direction in the vicinity of the site, with opposing traffic flows separated by a central median island.

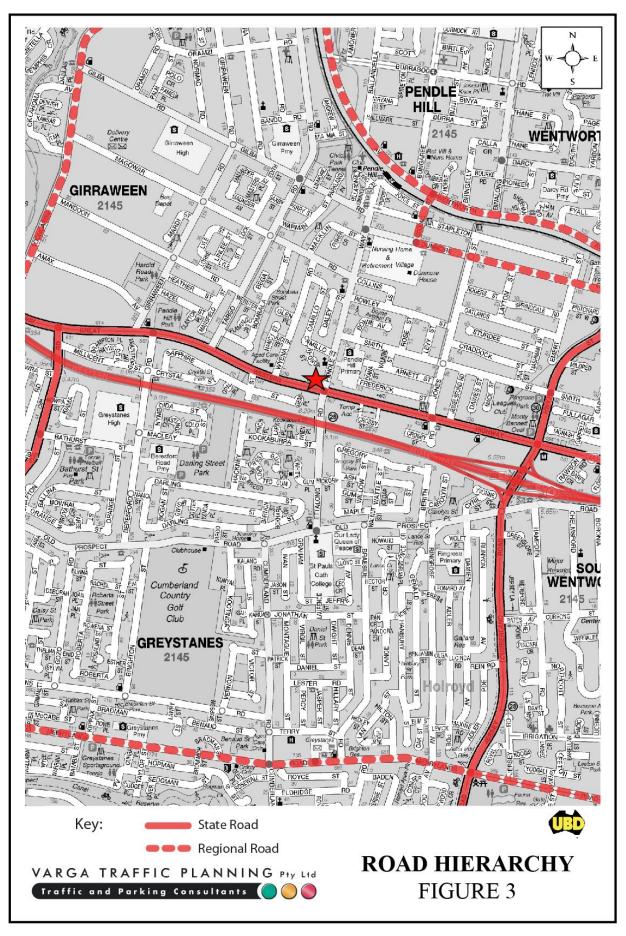
Great Western Highway is classified by the RMS as a *State Road* and provides the secondary east-west road link in the area, linking Parramatta and western suburban areas. It typically carries three traffic lanes in each direction in the vicinity of the site, with opposing traffic flows separated by a central median island. Clearway restrictions apply along both sides of the road

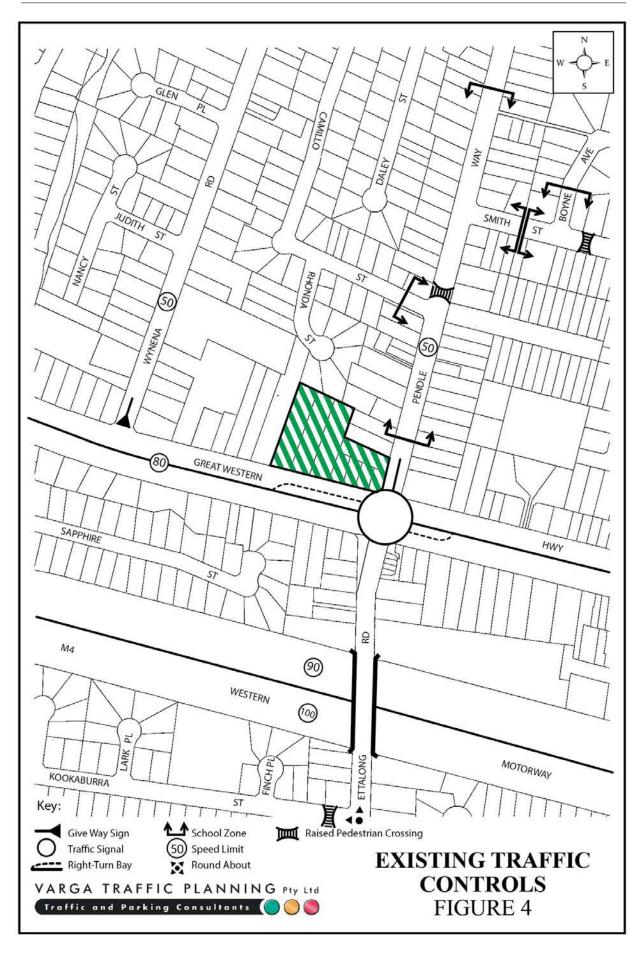
Pendle Way is a local, unclassified road which is primarily used to provide vehicular and pedestrian access to frontage properties. Kerbside parking is generally permitted along both sides of the road.

Existing Traffic Controls

The existing traffic controls which apply to the road network in the vicinity of the site are illustrated on Figure 4. Key features of those traffic controls are:

- a 100 km/h SPEED LIMIT which applies to westbound traffic on M4 Motorway
- a 90km/h SPEED LIMIT which applies to eastbound traffic on M4 Motorway
- a 80 km/h SPEED LIMIT which applies to Great Western Highway





- a 50 km/h SPEED LIMIT which applies to Pendle Way and all other local roads in the area
- TRAFFIC SIGNALS in Pendle Way where it intersects with Great Western Highway
- SCHOOL ZONE restrictions in Pendle Way.

Projected Traffic Generation

The traffic implications of development proposals primarily concern the effects of the *additional* traffic flows generated as a result of a development and its impact on the operational performance of the adjacent road network.

An indication of the traffic generation potential of the development proposal is provided by reference to the Roads and Maritime Services publication *Guide to Traffic Generating Developments, Section 3 - Landuse Traffic Generation (October 2002)* document.

The RMS *Guidelines* are based on extensive surveys of a wide range of land uses and nominates the following traffic generation rates which are applicable to the development proposal:

High Density Residential Flat Buildings in Sub-Regional Centres

0.29 peak hour vehicle trips per dwelling

Medium Density Residential

0.4-0.5 peak hour vehicle trips per dwelling (up to 2 bedrooms)

0.5-0.65 peak hour vehicle trips per dwelling (3 or more bedrooms)

The RMS *Guidelines* do not nominate a traffic generation rate for small, local shops, restaurants/cafés referring only to major regional shopping centres incorporating supermarkets and department stores. For the purpose of this assessment therefore, the traffic generation rate of "2.0 peak hour vehicle trips per 100m² GFA" nominated in the RMS *Guidelines* for *commercial premises* has been adopted in respect of these components of the development proposal.

Application of the above traffic generation rates to the various components of the development proposal yields a traffic generation potential of approximately 30 vehicle trips per hour during commuter peak periods as set out below:

Projected Future Traffic Generation

Residential Terraces (10 Terraces):

Residential Apartments (64 apartments):

Retail Shops (197m²):

Restaurant/Café (60m²):

18.6 peak hour vehicle trips

3.9 peak hour vehicle trips

1.2 peak hour vehicle trips

TOTAL TRAFFIC GENERATION POTENTIAL:

30.2 peak hour vehicle trips

That projected future level of traffic generation potential should however, be offset or *discounted* by the volume of traffic which could reasonably be expected to be generated by the existing uses of the site, in order to determine the *nett increase* (or decrease) in traffic generation potential of the development proposal.

Application of the *dwelling house* traffic generation rate nominated in the RMS *Guidelines* to the two dwelling houses previously on the site yields a traffic generation potential of approximately 2 peak hour vehicle trips.

The RMS *Guidelines* do not nominate a traffic generation rate for the existing towbar/trailer dealership and repair station. For the purpose of this assessment therefore, the traffic generation rate of "0.7 peak hour vehicle trips per 100m² site area" nominated in the RMS *Guidelines* for "motor showrooms" has been adopted. Accordingly, the existing towbar/trailer dealership with a site area of approximately 3,600m² is anticipated to generate up to 25 peak hour vehicle trips.

On the above basis, it is likely that the proposed development will result in a *nett increase* in the traffic generation potential of the site of approximately 3 peak hour vehicle trips as set out below:

Projected Nett Increase in Peak Hour Traffic Generation Potential of the Site as a Consequence of the Development Proposal

Projected Future Traffic Generation Potential:

Less Existing Traffic Generation Potential:

-26.9 vehicle trips

NETT INCREASE IN TRAFFIC GENERATION POTENTIAL:

3.3 vehicle trips

That projected *nett increase* in the traffic generation potential of the site as a consequence of the development proposal is minimal and will clearly not have any unacceptable traffic implications in terms of road network capacity.

4. PARKING IMPLICATIONS

Existing Kerbside Parking Restrictions

The existing kerbside parking restrictions which apply to the road network in the vicinity of the site are illustrated on Figure 5 and comprise:

- TRANSIT LANE restrictions along both sides of Great Western Highway during commuter peak periods
- NO PARKING restrictions along both sides of Pendle Way on the approach to Great Western Highway, including sections that only apply during the commuter peak periods
- generally UNRESTRICTED kerbside parking along the intermediate sections of Pendle
 Way
- BUS ZONES at regular intervals along both sides of Great Western Highway and also Pendle Way.

Off-Street Car Parking Provisions

The off-street car parking requirements applicable to the development proposal are specified in *Holroyd Development Control Plan 2013, Part A, No. 3 – Car Parking* document in the following terms:

Multi Dwelling Housing

	minimum	maximum
3 bedroom	1.2 spaces per dwelling	2.0 spaces per dwelling
Visitor	0.2 spaces per dwelling	0.5 spaces per dwelling

Residential Flat Buildings in B6 Zone (including Shop Top Housing)

	minimum	maximum
Studio/1 bedroom apartments:	0.8 spaces per dwelling	1.0 spaces per dwelling
2 bedroom apartments:	1.0 spaces per dwelling	1.5 spaces per dwelling
3 bedroom apartments:	1.2 spaces per dwelling	2.0 spaces per dwelling
Visitor:	0.2 spaces per dwelling	0.5 spaces per dwelling

In addition to the above, a dedicated carwash bay must be provided

Commercial in B6 Zone (including retail remises, business premises and office premises) minimum maximum

Ground Floor 1 space per $20m^2$ 1 space per $10m^2$

Food and Drink Premises and Registered Clubs in B6 Zone

1 space per 10m² GFA, no maximum

Application of the above car parking requirements to the various components of the development proposal yields a minimum off-street car parking requirement of 105 spaces as set out below:

	minimum	maximum
Residential Terraces (10 terraces):	12.0 spaces	20.0 spaces
Terrace Visitors:	2.0 spaces	5.0 spaces
Residential Apartments (64 apartments):	61.8 spaces	90.5 spaces
Apartment Visitors:	12.8 spaces	32.0 spaces
Retail Shops (197m ²):	9.9 spaces	19.7 spaces
Restaurant/Café (60m ²):	6.0 spaces	n/a
TOTAL PARKING REQUIRED:	104.5 spaces	167.2 spaces

The above requirements are satisfied by the proposed provision of:

- a single-level basement car parking area beneath the shop top housing and the residential apartment building comprising 74 residential spaces (including 10 disabled parking spaces for the 10 adaptable units), 14 visitor spaces (including 1 disabled space), 16 retail/restaurant spaces (including 1 disabled space) and 1 dedicated carwash bay, plus
- an enclosed single car garage for each of the 10 residential terraces along with a private driveway that is also capable of accommodating an additional parked car for either residents or visitors, corresponding to a potential of 20 spaces.

The geometric design layout of the proposed car parking facilities have been designed to comply with the relevant requirements specified in the Standards Australia publication Parking Facilities Part 1 - Off-Street Car Parking AS2890.1:2004 and Parking Facilities Part 6 - Off-Street Parking for People with Disabilities AS2890.6:2009 in respect of ramp gradients, parking bay dimensions and aisle widths.

The vehicular access arrangements have been designed to accommodate the *swept turning path* requirements of the B99 design vehicle as specified in *AS2890.1:2004*, allowing them to circulate the internal ramps without difficulty, and to enter and exit the site in a forward direction at all times. In this regard, the proposed car parking layout has been satisfactorily designed to comply with *AS2890.1:2004 Clause 2.5.2 (C)*, and *swept turning path* diagrams have been prepared to show a B99 vehicle can satisfactorily pass a B85 vehicle at *all* ramp junctions.

Off-Street Bicycle Parking Provisions

The off-street bicycle parking requirements applicable to the development proposal are specified in the same section of the aforementioned *DCP* document in the following terms:

Residential Flat Buildings

1 bedroom apartments:	0.5 spaces per dwelling
2 bedroom apartments:	0.5 spaces per dwelling
3+ bedroom apartments:	0.5 spaces per dwelling
Visitors:	0.1 spaces per dwelling

Ground Floor – Business Zones

Employees: 1.0 spaces per 300m² GLFA Visitors: 1.0 spaces per 2,500m² GLFA

Application of the above bicycle parking requirements to the residential, retail and commercial components of the development proposal yields an off-street bicycle parking requirement of 39 spaces as set out below:

	Resident/Staff	Visitors/Patrons
Residential Terraces (10 terraces):	0.0 spaces	0.0 spaces
Residential Apartments (64 apartments):	32.0 spaces	6.4 spaces
Retail Shops (197m ²):	0.7 spaces	0.1 spaces
Restaurant/Café (60m²):	0.2 spaces	0.0 spaces
TOTAL:	32.9 spaces	6.5 spaces

The proposed development makes provision for a total of 44 off-street bicycle parking spaces throughout the basement car parking area, thereby satisfying Council's bicycle parking requirements.

Loading/Servicing Provisions

The proposed new mixed-use building is expected to be serviced by a variety of commercial vehicles up to and including 10.5m long rigid trucks. The loading dock is proposed to be located on the ground floor level adjacent to the western side of the basement entry/exit ramp. The manoeuvring areas have been designed to accommodate the swept turning path requirements of these 10.5m long rigid trucks, allowing them to enter and exit the site in a forward direction at all times.

The geometric design layout of the proposed loading facilities have been designed to comply with the relevant requirements specified in the Standards Australia publication *Parking Facilities Part 2 - Off-Street Commercial Vehicle Facilities AS2890.2* in respect of ramp gradients and service area requirements for rigid trucks up to 10.5m long.

In summary, the proposed parking and loading facilities satisfy the relevant requirements specified in both Council's DCP as well as the Australian Standards and it is therefore concluded that the proposed development will not have any unacceptable parking or loading implications.



ACOUSTIC NOISE & VIBRATION SOLUTIONS P/L

Suite 603, Level 6 Compass Centre Bankstown, NSW 2200 ABN: 37 169 392 456
Phone: 9793 1393 Fax: 9708 3113 Email: info@acousticsolutions.com.au

Acoustic Report - Traffic Noise & Mechanical Ventilation -

For proposed development at

No. 510-524 Great Western Highway, Pendle Hill

Prepared By: Domeniki Tsagaris (M.I.E.Aust), B.E. (UNSW)

Australian Acoustical Society (Sub).

Approved By: Moussa Zaioor (M.I.E. Aust), CPENG,

Australian Acoustical Society (Member).

Date: February 18, 2016 Reference No.: 2014-614



DOCUMENT CONTROL

Date	Revision History	Prepared By:	Reviewed and Authorised by:
03/12/2014	Initial Report	Domeniki Tsagaris	Moussa Zaioor
15/12/2014	Version 1	Domeniki Tsagaris	Moussa Zaioor
10/02/2015	Version 2	Domeniki Tsagaris	Moussa Zaioor
13/02/2015	Version 3	Domeniki Tsagaris	Moussa Zaioor
01/04/2015	Version 4	Domeniki Tsagaris	Moussa Zaioor
18/02/2016	Final Report	Domeniki Tsagaris	Moussa Zaioor



TABLE OF CONTENTS

	Contents	Page
	ocument Control	
1.0	ble of Contents Scope of Work	
PAR	Τ 1 – TRAFFIC NOISE	4
2.0	Noise Survey and Instrumentation	4
3.0	Acoustical Study (AS/NZS 2107:2000)	6
4.0	Acoustical Study (AS 3671-1989) & Clause 102 of the State Environmental	
Plann	ning Policy – (Infrastructure) 2007	7
5.0	Sleep Arousal	8
6.0	External Building Recommendations for Windows, Doors, Walls & Roof	8
PAR	Τ 2 – NOISE IMPACT FROM MECHANICAL PLANT & EQUIPMENT &	
LOA	DING DOCK	9
7.0	Noise from Proposed Loading Dock Use	9
8.0	Noise Impact from Proposed Mechanical Plant & Equipment	10
8.2	Car Park Mechanical Ventilation	11
8.4	Driveway Ramp Roller Door	12
9.0	Discussion and Conclusion	13
10.0	Appendix	14



1.0 Scope of Work

The aim of this report is to determine the building materials to be used and the construction methods to be adopted such that the proposed development at No. 510-524 Great Western Hwy, Pendle Hill is built to achieve acceptable internal noise levels.

Noise intrusion levels are to be within the limits adopted by the Building Code of Australia, AS 3671 'Road Traffic Noise Intrusion – Building Siting and Construction', AS 2107 'Acoustics – Recommended Design Sound Levels and Reverberation Times', Clause 102 of the State Environmental Planning Policy – (Infrastructure) 2007, the Department of Planning's document titled "Development Near Rail Corridors and Busy Roads – Interim Guidelines", EPA Industrial Noise Policy and Council Conditions/Requirements, such that all habitable rooms in the proposed development shall be designed to limit internal noise levels.

This report will also address the noise impact from the proposed mechanical plant & equipment associated with the proposed development, as well as the use of the Loading Dock, as per NSW Industrial Noise Policy.

The site is located on the corner of Great Western Hwy and Pendle Way, Pendle Hill (Figure 1 – Site Location). The architectural plans by Architects Nicholas & Associates are for the proposed development of ten (10) terraces, one (1) mixed use building and one (1) residential building (Figure 2- Proposed Development).

PART 1 – TRAFFIC NOISE

2.0 Noise Survey and Instrumentation

On December 9th, 2014, Acoustic Solutions went to the above address to carry out acoustic measurements near the proposed building line facing the Great Western Highway (Figure 3 – Noise Reading Location). The unattended environment noise monitoring was conducted for four (4) days from Tuesday 9th December to Friday 12th December, 2014.

Unattended noise monitoring was conducted for a further (3) days from Friday the 6th February, 2015 to Monday 9th February, 2015 to complete the required 7 day noise readings as per council requirements.

All sound pressure levels are rounded to the nearest whole decibel. All measurements were taken in accordance with the Australian Standards AS 1055 "Acoustics- Description and Measurements of Environmental Noise".



The noise survey was conducted to determine a conservative reading of the existing day and evening noise levels [15hrs- 7:00 -22:00] $L_{(A90, 15 \text{ minutes [1hr]})}$ and $L_{(Aeq, 15 \text{ minutes [1 hr]})}$ and to determine a conservative reading of existing night and early morning noise levels [9hrs-22:00-7:00] $L_{(A90, 15 \text{ minutes [1hr]})}$ and $L_{(Aeq, 15 \text{ minutes [1 hr]})}$.

The measurement procedure and the equipment used for the noise survey are described below. All sound level measurements and analysis carried throughout this report are carried with Svantek 957 Noise and vibration level meter which has the following features:

- Type 1 sound level measurements meeting IEC 61672:2002
- General vibration measurements (acceleration, velocity and displacement) and HVM meeting ISO 8041:2005 standard
- Three parallel independent profiles
- 1/1 and 1/3 octave real time analysis
- Acoustic dose meter function
- FFT real time analysis (1920 lines in up to 22.4 kHz band)
- Reverberation Time measurements (RT 60)
- Advanced Data Logger including spectra logging
- USB Memory Stick providing almost unlimited logging capacity
- Time domain signal recording
- Advanced trigger and alarm functions
- USB 1.1 Host & Client interfaces (real time PC "front end" application supported)
- RS 232 and IrDA interfaces
- Modbus protocol

Machine was calibrated prior to reading. Light wind and rain were recorded during the noise measuring period and therefore those readings have been disregarded. The Full Average Statistical Noise Parameters $L_{(Aeq, 15 \text{ minutes})}$, $L_{(A90, 15 \text{ minutes})}$, $L_{(A10, 15 \text{ minutes})}$, $L_{(A1, 15 \text{ minutes})}$ are presented in Figure 4 – Noise Survey. A Summary of those readings is presented in the table below:

Table 2.1- Summary of Noise Readings 9th December – 12th December, 2014 & 6th February – 10th February, 2015

At Point A	L _(Aeq, 15 minutes)	L _(A90, 15 minutes)	
Day & Evening Time – 7:00am- 10:00pm	67 dB(A)	57 dB(A)	
Night & Early Morning Time – 10:00pm-7:00am	63 dB(A)	50 dB(A)	



3.0 Acoustical Study (AS/NZS 2107:2000)

The above standard has formulated the criteria for developments situated in urban areas. The levels have been derived from relevant Australian Standards, the measurements and analysis of noise conditions in other similar developments and standards established in completed projects.

As traffic noise levels are not constant, a Leq noise level descriptor is used when assessing this type of noise source. The Leq is the mean energy level of noise being measured and has been found to accurately describe the level of annoyance caused by traffic noise.

It is usual practice, when we find it necessary to recommend internal sound levels in buildings to refer to Australian/New Zealand Standard AS/NZS 2107:2000 "Acoustics – Recommended Design Sound Levels and Reverberations times for Building Interiors".

This standard provides recommended noise levels for steady state such as noise from building services and quasi-steady state sounds, such as traffic and industrial noise. The noise levels recommended in AS/NZS 2107:2000 take into account the function of the area and apply to the sound level measured within the space unoccupied although ready for occupancy.

The standard recommends the following noise levels for residential buildings.

AUSTRALIAN STANDARD AS/NZS 2107:2000 RECOMMENDED DESIGN NOISE LEVELS, LAeq

Type of occupancy	Recommended Design Sou	ınd Level
Activity	Satisfactory	Maximum
Houses in areas with negligible trai	nsportation	
Sleeping Areas	25	35
Houses and Apartments near min	nor roads	
Living Areas	30	40
Sleeping Areas	30	35
Work Areas	35	40
Apartment common areas (e.g. foyer, lift lobby)	45	55
Houses and Apartments near ma	jor roads	
Living Areas	35	45
Sleeping Areas	30	40
Work Areas	35	45
Apartment common areas (e.g. fover, lift lobby)	45	55



4.0 <u>Acoustical Study (AS 3671-1989) & Clause 102 of the State Environmental Planning Policy – (Infrastructure) 2007</u>

Australian Standard 3671 "Traffic noise intrusion building siting and construction" is used to determine the type of building materials required to satisfactorily attenuate traffic noise so that internal traffic noise levels recommended in Australian Standard 2107-2000 "Recommended design sound levels and reverberations for building interiors" and Clause 102 of the State Environmental Planning Policy – (Infrastructure) 2007, can be achieved.

By taking in to consideration that the proposed development is considered to be "sensitive to traffic noise or vehicle emissions", it must be "appropriately located and designed, or include measures, to ameliorate potential traffic noise or vehicle emissions within the site of the development" arising from the Great Western Highway.

Under Clause 102, where the development is for residential use and is located in or adjacent to a relevant road corridor, a consent authority must not grant consent unless it is satisfied that appropriate measures will be taken to ensure that the following LAeq levels are not exceeded:

- in any bedroom in the building 35dB(A) at any time between 10.00p.m. and 7.00a.m.
- anywhere else in the building (other than a garage, kitchen, bathroom or hallway) 40dB(A) at any time.

Maximum design sound level is defined as the level of noise that has been found to be acceptable by most people for the environment in question and also to be not intrusive. In this assessment, satisfactory design sound levels were used where practically possible.

In accordance with Section 3.4.2.6 of AS 3671 the traffic noise attenuation (TNAc) required for each building component (walls, windows, ceiling,...etc) is determined from the following equation:

$$TNAc = TNR + 10 \log 10 [(Sc/Sf)x (3/h) x 2T60 x C]$$
.....4.1

Where TNAc = the traffic noise attenuation required of the component, in decibels.

TNR = the traffic noise reduction, determined in Clause 3.3;

Sc/Sf = area ratio of the component

h = ceiling height of room, in metres

T60 = reverberation time of room, in seconds

C = number of components.



The tables provided in the relative Australian standards for selecting building materials (walls, windows, ceiling etc) are expressed in terms of their Rw (weighted sound reduction index) or STC. Section 3.4.3.1 defines the relation between Rw and TNAc calculated in [4.1] as follows:

This formula approximate all allowances made for the spectral composition of the noise.

5.0 Sleep Arousal

Section 5.4 of the NSW Road Noise Policy mentions the Environment Protection Authority NSW 1999 guideline which aims at limiting the level of sleep disturbance due to environmental noise. It states that the $L_{A1,\ 1\ minute}$ level of any noise should not exceed the ambient L_{AF90} noise level by more than 15dB. This guideline takes into account the emergence of noise events, but does not directly limit the number of such events or their highest level, which are also found to affect sleep disturbance.

Applying the above thus the sleep disturbance criteria for the above project is $L_{A1, 1 \text{ minute}}$ and should not be exceeded by [L_{A90} =50 dB(A) plus 15]= 65 dB(A).

There are other studies on sleep disturbance like the one carried the enHealth Council (2004) and the guidelines published by the World Health Organisation (1999) were reviewed and analysed in terms of the guidance on noise exposure and sleep disturbance. The enHealth report states that:

6.0 External Building Recommendations for Windows, Doors, Walls & Roof

Building Component	Rw Rating to be
	Achieved
Windows & Sliders in Living/Dining/Kitchen & Bedroom Areas of	
Residential Units in East Building facing Great Western Hwy & Pendle Way	33-36
are to be 10mm laminated type with full perimeter Schlegel Q-Lon acoustic	33-30
seals (Ph: 8707-2000). (1)	
All other Windows & Sliders in Living/Dining/Kitchen & Bedroom Areas	
of Residential Units in East and Windows & Sliders in Commercial/Retail	30-32
Shops in East Building are to be 6mm laminated type with full perimeter	30-32
Schlegel Q-Lon acoustic seals (Ph: 8707-2000). (1)	

^{&#}x27; as a rule for planning for short-term or transient noise events, for good sleep over 8 hours the indoor sound pressure level measured as a maximum instantaneous value not exceed approximately 45 dB(A) $L_{A,(Max)}$ more than 10 or 15 times per night'.



Windows & Sliders in Living/Dining/Kitchen & Bedroom Areas of	
Residential Units in West Building <u>facing Great Western Hwy</u> are to be 10mm laminated type with full perimeter Schlegel Q-Lon acoustic seals (Ph:	33-36
8707-2000). (1)	
All other Windows & Sliders in Living/Dining/Kitchen & Bedroom Areas	
of Residential Units in West Building are to be 6mm laminated type with full	30-32
perimeter Schlegel Q-Lon acoustic seals (Ph: 8707-2000). (1)	30 32
Windows & Sliders in Living/Dining/Kitchen & Bedroom Areas of all	
North Terraces are to be minimum 4mm float and to be in accordance with AS	28-30
2047 (Windows in Buildings).	
Windows in Bathrooms/Ensuites/Laundries etc in East Building, West	
Building & North Terraces are unrestricted and to be in accordance with AS	-
2047 (Windows in Buildings). (1)	
External Walls in East Building, West Building & North Terraces are to be	
Double skin cavity brick walls, brick veneer minimum 270/250 mm double	4.4
brick/brick veneer construction or any other method of wall construction with	44
an Rw of 44.	
Roof in East Building, West Building & North Terraces is to be Galvanised	
Steel Roofing (0.5mm), on 10mm gypsum plaster board ceiling with 300mm	36-40
gaps & 50mm thick, 15kg/m³ mineral wool batts between ceiling joists. (2).	

NB: This report is to be read in conjunction with the BASIX certificate and any other related building

(2). All gaps are to be acoustically sealed.

PART 2 – NOISE IMPACT FROM MECHANICAL PLANT & EQUIPMENT & **LOADING DOCK**

7.0 Noise from Proposed Loading Dock Use

The mixed use development located on the eastern side of the proposed development will contain a loading dock for the commercial & retail premises located on the ground floor (Figure 5 – Loading Dock Location).

Noise produced by Delivery Trucks accessing the Loading Dock may impact the nearest residential receiver at No. 4 Pendle Way, Pendle Hill. The proposed loading dock can accommodate a maximum of (1) truck at a time. The garbage bay is adjacent to the loading dock and garbage trucks accessing the loading dock will contribute as an additional noise source (Figure 5). Typical power levels for trucks operating next to the garbage bay and adjacent to the loading dock are presented below.

specification.

(1) No weep holes in windows/sliders. All gaps between window & door frames and the masonry walls are to be sealed using acoustic foam Hilti CP620 or similar. Glass wool batts can be applied prior to the application of the foam to seal larger gaps.



Loading dock and vehicle movement sound power levels, dB Leq

Octave Band Centre Frequency (Hz)

Source	63	125	250	500	1000	2000	4000
Garbage truck/semi trailer movement	114	116	111	106	104	103	102
5-10 tonne truck air brake	100	94	91	99	106	107	105
5-10 tonne truck movement	97	96	90	91	94	95	88
Van or small truck movements	95	90	89	88	89	91	86
Unloading of vehicles and bin/skip emptying	109	109	109	108	108	110	109

Figure 1 - Loading Dock Noise Levels

Noise emission from the loading dock will not exceed existing background noise levels by more than 5 db(A) at the nearest residential receiver (No. 4 Pendle Way, Pendle Hill) and will comply with the sleep arousal criteria provided the following:

- Loading docks are not used between 10:00pm and 7:00am
- Loading dock is to be roofed and roller doors to be closed upon loading and unloading.
- Loading dock to cease operation in hours between 10:00pm and 7:00a.m
- A 1.8m Sound Barrier Fence is to be installed along the southern boundary of No. 4 Pendle Way (Figure 5)

8.0 Noise Impact from Proposed Mechanical Plant & Equipment

The proposed development at No. 510-524 Great Western Highway will incorporate different mechanical plant and equipment for the ventilation of the basement car parks, basement roller doors, lift shafts and mechanical ventilation for the retail & residential properties. The operation of the above mechanical plant & equipment is governed under the NSW Industrial Noise Policy & the Protection of the Environment Operations Act.

8.1 Noise Criteria

The Protection of the Environment Operations Act 1997 (POEO Act) and the POEO (Noise Control) Regulation 2008 defines Offensive Noise as a noise which is likely to be harmful to, or to interfere unreasonably with people outside the premises from which the



noise is emitted. The interference or harm could come from the level, or the type of noise. The above Regulations prescribe particular times outside of which excessive noise is deemed to be offensive. The noise from any associated mechanical plant and/or equipment must be not audible at the nearest residential receiver between

- 10:00pm 7:00am Monday Saturday
- 10:00pm 8:00 Sunday & Public Holidays

The noise from the mechanical plant & equipment at the above address is governed under Section 2.1 of the NSW Industrial Noise policy. Noise intrusion from mechanical plant is generally considered acceptable if the weighted level of noise from the source measured over a 15 minutes interval does not exceed the background noise level by more than 5dB.

• L_{Aeq,15 minutes} < background levels + 5

Section 3.1 of the above policy defines the background level as $L_{A90,15 \text{ minutes}}$ which is the Noise exceeded 90% percent of a time period over which annoyance reactions may occur (taken to be in 15 minute periods).

8.2 Car Park Mechanical Ventilation

The proposed *basement parking* for the eastern and western buildings at No. 510-524 Great Western Hwy, are located below ground level and therefore natural ventilation will not be possible and a mechanical extraction system should be used. The mechanical ventilation system needs to achieve six air changes per hour for exhaust fume extract and ten air changes per hour for smoke clearance. Mechanical Ventilation may also be installed for the proposed residential and commercial properties in the development.

The maximums outdoor sound power level from a mechanical plant at any point is calculated using the formula $L_w = L_p + 20\log_{10}r + 8dB$ where r is the distance in meter to any residential boundary. It is the requirement that any supplier of any mechanical plant located outdoors meet the sound power reduction requirements.

For all mechanical ventilation equipment, a quiet fan is to be selected and the fan shaft is to be enclosed or the fan box is to be lined with 50mm thick insulation blankets (e.g. 50mm rigid grade fibre glass). Further assessment should be carried out after a mechanical services plan has been prepared by a qualified Mechanical Engineer and before the submission of a CC application. A qualified acoustical consultant may be required to progressively inspect the installation of various suppression components and certify to council that it meets installation.



8.3 Mechanical Ventilation for Residential Units

To achieve the indoor design sound levels required to habitable areas, it is assumed that the windows and doors are closed to avoid noise intrusion. For bedrooms noise levels should not exceed 35 dB(A) during the night and for all other habitable spaces noise levels should not exceed 40 dB(A) at any other time. For this reason it is necessary to provide quiet mechanical or natural ventilation systems to all habitable spaces.

Windows openable by 20% cause a 10 dB(A) reduction between the internal and external noise levels. The "Development near Rail Corridors and Busy Roads – Interim Guideline" states that "If internal noise levels with windows or doors open exceed the criteria by more than 10 dB(A), the design of the ventilation for these rooms should be such that occupants can leave windows closed, and also to meet the ventilation requirements of the Building Code of Australia."

Therefore, for the proposed development at No. 510-524 Great Western Hwy, Pendle Hill, along with the internal noise criteria and external noise levels recorded in Section 2 of this report, we recommend all residential units *facing* Great Western Hwy & Pendle Way have a mechanical or natural ventilation system installed. We recommend installing it near the entry and insulate the ducts with 50mm thick insulation blankets to minimise external noise propagation.

8.4 <u>Driveway Ramp Roller Door</u>

The proposed driveway ramp to enter and exit the underground basement parking for the eastern and western buildings at No. 510-524 Great Western Hwy, Pendle Hill will most likely include a roller door as a security measure for residents and visitors of the building.

Noise emitted by the use of the automatic door may have an adverse effect on the proposed residential units located above the basement. For the basement car park entry, owner is to choose a security gate for quiet operation.

Roller door is to be installed according to manufacturer's recommendations for the minimisation of airborne and structural noise to minimise the likelihood of any disturbance to the residential units located above the basement.

8.5 Noise Impact from Lift Shaft

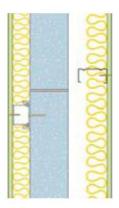
The proposed eastern and western buildings at No. 510-524 Great Western Hwy, Pendle Hill, will include lift shafts for the residential properties that are located adjacent to habitable areas within the residential units.



As per Section F5 of the BCA, Proposed Walls separating habitable areas in one sole occupancy unit from a plant room or lift shaft must be of discontinuous construction and achieve an $R_w \ge 50 dB$.

Internal walls separating a habitable area from a lift shaft are to be constructed as per the Hebel wall system below or any other form of discontinuous construction that achieves $Rw \ge 50$.

- 10mm Gyprock Plasterboard
- 28mm Furring Channel with Furring Channel Clip
- 50mm (540 g/m²) Bradford Glasswool Insulation
- 75mm Hebel PowerPanel
- 20mm gap
- 64mm Steel Stud
- 50mm (540 g/m²) Bradford Glasswool Insulation
- 10mm Gyprock Plasterboard



9.0 <u>Discussion and Conclusion</u>

The construction of the proposed development at No. 510-524 Great Western Highway, Pendle Hill, if carried out as recommended in the plans and specifications and including the acoustic recommendations in this report, will meet the required noise reduction levels as required in Clause 102 of the State Environmental Planning Policy – (Infrastructure) 2007, NSW Road Noise Policy, Australian Standards AS 3671 'Traffic Noise Intrusion Building Siting and Construction', AS 2107 'Acoustics – Recommended Design Sound Levels and Reverberation Times', the Department of Planning's document titled "Development Near Rail Corridors and Busy Roads – Interim Guidelines", NSW Industrial Noise Policy and Council Conditions/Requirements.

Should you require further explanations, please do not hesitate to contact us.

Yours Sincerely,

M. Zaioor

M.S. Eng'g Sci. (UNSW).

M.I.E.(Aust), CPEng

Australian Acoustical Society (Member)



10.0 Appendix

Figure 1 - Loading Dock Noise Levels Figure 2 - Site Location Figure 3 - Proposed Development Figure 4 - Noise Reading Location Figure 5 - Noise Survey	10		
	15 16 17		
		Figure 6 - Loading Dock Location	





Figure 2 - Site Location





Figure 3 – Proposed Development





Figure 4 - Noise Reading Location



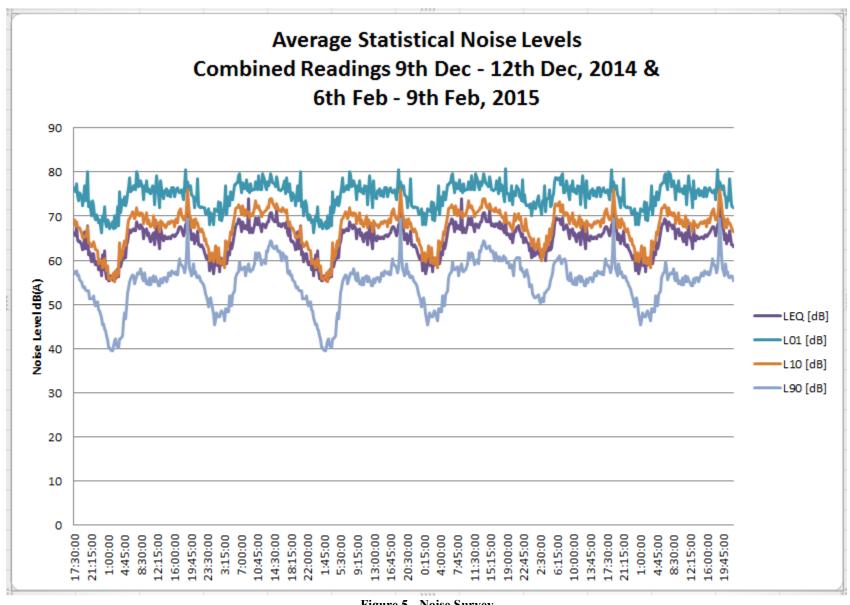


Figure 5 - Noise Survey



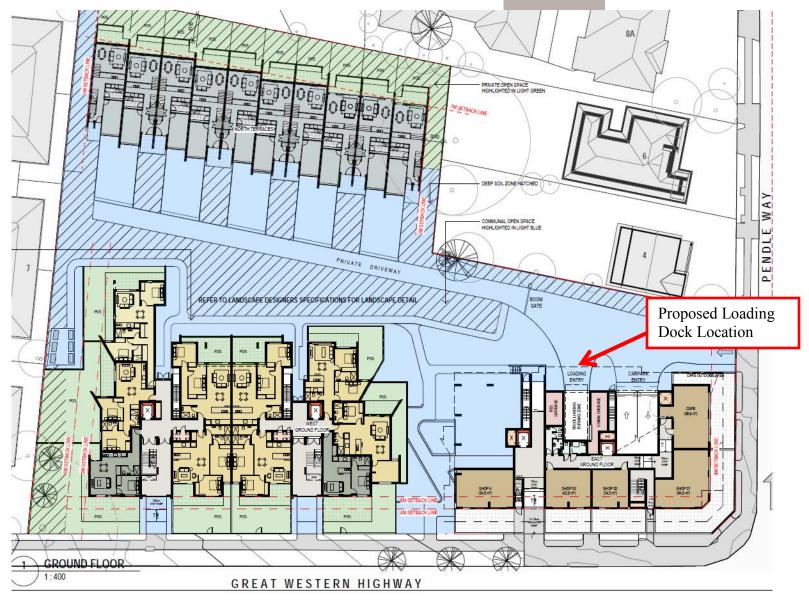


Figure 6 - Loading Dock Location