PROPOSED RESIDENTIAL FLAT BUILDING

44-48 Rodley Avenue, Penrith, NSW, 2750





ABN 41 159 480 056 NOMINATED ARCHITECT: P Mor

UE	DATE	AMENDMENT	Ledenda / Norea.
1	2021-03-04	DA SUBMISSION	BR BEDROOM GAS GAS CUPBOARD RWORAINWATER OUTLET
}	2021-06-22	DA SUBMISSION	COM COMMS CUPBOARD GD GRATED DRAIN SWP STORM WATER PIT DP DOWNPIPE GEX GARRAGE EXHAUST TOH TOP OF HOR
;	2021-09-22	DA SUBMISSION	E ELECTRICAL CUPBOARD MBX MAILBOX TOW TOP OF WALL
			FHR FIRE HOSE REEL RL RELATIVE LEVEL TTI TACTILE INDICATORS

NORTH

Dbc:wwjep1(3652)2: 9765802: Morson\19043 - 44-48 Rodley Ave\19043 - 44-48 Rodley Ave_DA_RH20210921.vt Version: 1, Version Date: 13/10/2021

PROJECT PROPOSED RESIDENTIAL FLAT BUILDING ADDRESS 44-48 Rodley Avenue, Penrith, NSW, 2750

PROJECT No. 19043 MORSON GROUP SCALE: As indicated

COS AREA 1:300

CLIENT

Inglow Investments Two

DEVELOPMENT DETAILS

Site Area		1672m ²
Gross Floor Area (GFA)		2958m ²
Zoning	R4 High Density	Residential
	Allowable	Proposed
Floor Space Ratio (FSR)*	n/a	1.77:1
Total Storeys	5	5

Communal Open Space	25%	257.4m ²	15%
Deep Soil Zones	7%	267.2m ²	16%
	*I F		

*SEPP 65 REQUIREMENT REFER SHEET DA02 FOR DETAILS

UNITS TYPES				
Туре	Count			
2 BED	25			
2 BED Adaptable	1			
3 BED	2			
3 BED Adaptable	1			

TOTAL APARTMENTS: 29

GROSS FLOOR AREA			
Level	Area		
GROUND LEVEL	482.1 m ²		
LEVEL 1	678.5 m ²		
LEVEL 2	678.5 m ²		
LEVEL 3	678.5 m ²		
LEVEL 4	440.9 m ²		
•	2958 / m ²		

COMMON OPEN SPACE					
Name	Area	% of Site			
COS	257.4 m ²	15.40			
257.4 m ² 15.40					

DEEP SOIL AREA					
Name	Area	% the Site			
6m	267.2 m ²	15.98			
4m	176.7 m ²	10.57			
3m	27.9 m ²	1.67			
2m	79.4 m ²	4.75			
	551.3 m ²	32.97			

LANDSCAPE SCHEDULE				
Area	% the Site			
495.3 m ²	29.62			
495.3 m ²	29.62			

CAR SPACES REQUIRED				
2 Bed units: 26	26			
3 Bed units: 3	6			
Visitors (1/5)	5			
Visitors				
Service vehicles (1/40)	1			
Washing bay (1/50)				
Grand total	38			

CAR SPACES - TYPES				
Туре	Number			
Class 1a - 2500w x 5400d (Resident)	29			
Class 1a - 2500w x 5400d (Visitor)	6			
Class 4 - 2400w x 5400d (Disabled)	3			
	38			

SHEET SIZE: A1 SHEET VIEW AND SCHEDULES



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ISSI	JE DATE	AMENDMENT	LEGENDS / NOTES:	PBOJECT			SHEET (
A	2021-03-04	DA SUBMISSION	BR BEDROOM GAS GAS CUPBOARD RWORAINWATER OUTLET	PROPOSED RESIDENTIAL E	FLAT BUILDING 19043		SIZE: A1
В	2021-06-22	DA SUBMISSION	DP DOWNPIPE GEX GARBAGE EXHAUST TOH TOP OF HOB		CLIENT	ACN 157 480 056, ABN 41 157 480 056	
C	2021-09-22	DA SUBMISSION	E ELECTRICAL CUPBOARD MBX MAILBOX TOW TOP OF WALL	44-48 Bodiev Avenue, Penrith, NSW	2750 Inglow Investments Two		SCALE:
			FHR FIRE HOSE REEL RL RELATIVE LEVEL TTI TACTILE INDICATORS		, · · · · · · · · · · · · · · ·	PO Box 170, Potts Point, NSW 1335	

Document 1, Version Date: 13/10/2021

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Document: Sec. D: 9765802. Morson: 19043 - 44-48 Rodley Ave\19043 - 44-48 Rodley Ave_DA_RH20210921.vvt Version: 1, Version Date: 13/10/2021



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GROUND LEVEL				
	ISSUE No.	В		



Doc<u>1110972021</u> St3519. 9765802. Moreon/19043 - 44-48 Rodley Ave\19043 - 44-48 Rodley Ave_DA_RH20210921.rvt Version: 1, Version Date: 13/10/2021

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Doc<u>1110972021</u> S20172. 9765802;Morson/19043 - 44-48 Rodley Ave\19043 - 44-48 Rodley Ave_DA_RH20210921.rvt Version: 1, Version Date: 13/10/2021



Doc<u>1110972021</u> S20178. 9765802;Morson/19043 - 44-48 Rodley Ave\19043 - 44-48 Rodley Ave_DA_RH20210921.rvt Version: 1, Version Date: 13/10/2021



Doc<u>1110972021</u> \$2012. 9765802;Morson/19043 - 44-48 Rodley Ave\19043 - 44-48 Rodley Ave_DA_RH20210921.rvt Version: 1, Version Date: 13/10/2021

Г	LEVEL	4
		-



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MSC1 Dulux Eternity Titanium Pearl Satin 90087728

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TFW1 Render Painted Finish Dulux Handmade Linen Quarter A213

Timber Louvres with Fly Wire

SHEET SHEET NORTH FACADE

DA18 ISSUE No. С

29 AIR- CON UNITS Powder Coated Louvre Screen to hide AC units	SPL 44 600



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TFW1 Render Painted Finish Dulux Handmade Linen Quarter A213

Timber Louvres with Fly Wire

SHEET SHEET SOUTH FACADE

[°]DA19 ISSUE No. В

	(CR2)	<u></u>	29 AIR- CON UNITS AC units from the s Powder Coated Louvre Screen to hide AC units	ol vieble reet level ISE 44.000
	(R1) (FBK2) (FBK3)			STL 41500
				CR1
	(FBK2)			
RODLEY AVE	(IWIT)			
	(FBK1)			

29 AIR- CON UNITS



MFW1





SHEET SHEET NAME: WEST FACADE

DA20 ISSUE No. С





ABN 41 159	480 056 NOMINATED ARCHITECT: P Morson(8100)						
ISSUE DATE	AMENDMENT	LEGENDS / NOTES:		PROJECT			
A 2021-03-0	4 DA SUBMISSION	BR BEDROOM GAS GAS CUPBOARD RWORAINWATER OUTLET		PROPOSED RESIDENTIAL ELAT BUILDING	19043		SIZE A1 NAM
B 2021-09-2	2 DA SUBMISSION	DP DOWNPIPE GEX GARRAGE EXHAUST TOH TOP OF HOR			CLIENT	ACN 157 480 056, ABN 41 157 480 056	
		E ELECTRICAL CUPBOARD MBX MAILBOX TOW TOP OF WALL	0 1 2 3 4 5 7 10	ADDRESS 44-48 Bodley Avenue Penrith NSW 2750	Indiaw Investments Two		SCALE:
		EHR FIRE HOSE REFL BI RELATIVE LEVEL TTL TACTILE INDICATORS	COALE 1:100@41 (1:000@40)	HT TO HOULD I WEINE, T CHINA, NOW, 2100	ingiow investments 1wo	PO Box 170, Potts Point, NSW 1335	AS Indicated

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TFW1 Render Painted Finish Dulux Handmade Linen Quarter A213

Timber Louvres with Fly Wire



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Г	ISSUE	DATE	AMENDMENT	LEGENDS / NOTES:		PROJECT			QUEET	CUE
- E	A 20	021.02.04	DA SURMISSION	BR BEDROOM GAS GAS CUPBOARD RWORAINWATER OUTLET			100/201100. 100/23		SHEET	SHEE
	A 21	021-00-04	DA SODIVISSION	CONCOMING CURPOURD OD CRATER ROAD CONCOMINATER DT		I PROPOSED RESIDENTIAL ELAT BUILDING	13043	MICHAN IN MORSON REGISTRATION NUMBER 8100	SIZE: A1	NAM
	B 20	121-06-22	DA SUBMISSION	COM COMINS COPBOARD GD GRATED DRAIN SWP STORM WATER PT				ACN 159 480 056 ARN 41 159 480 056	4	
– L	0 20	021 00 22	DA CODIMICCION	DP DOWNPIPE GEX GARBAGE EXHAUST TOH TOP OF HOB		ADDRESS	CLIENT		00415	
	C 20	021-09-22	DA SUBMISSION	E ELECTRICAL CUPROARD MRX MAILBOX TOW TOP OF WALL	0 1 2 3 4 5 / 10m				SCALE:	
	·	021 00 22	Bit COBINICCION			44-48 Rodley Avenue, Penrith, NSW, 2/50	Inglow Investments 1 wo	BO Rey 170 Belly Robel NEW 1225	1 . 100	
				FHR FIRE HUSE REEL RL RELATIVE LEVEL TTT TACTILE INDICATORS	SCALE 1:100@A1 (1:200@A3)		•	FO BOX 170, FOIS FOIL, NAW 1333	1.100	

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<u>г</u>	ISSUE	DATE	AMENDMENT	LEGENDS / NOTES:		PROJECT			OUEET	0.11
Ē	A	2021-03-04	DA SUBMISSION	BR BEDROOM GAS GAS CUPBOARD RWORAINWATER OUTLET		PROPOSED RESIDENTIAL ELAT BUILDING	19043		SIZE: A1	NAN
- [В	2021-06-22	DA SUBMISSION	DP DOWNPIPE GEX GARBAGE EXHAUST TOH TOP OF HOB			CLIENT	ACN 157 480 056, ABN 41 157 480 056	0.22.711	
- [С	2021-09-22	DA SUBMISSION	E ELECTRICAL CUPBOARD MBX MAILBOX TOW TOP OF WALL	0 1 2 3 4 5 7 10m	44-48 Bodlev Avenue Penrith NSW 2750	Indiow Investments Two		SCALE:	
- Г				FHR FIRE HOSE REEL RL RELATIVE LEVEL TTI TACTILE INDICATORS	SCALE 1:100@A1 (1:200@A3)		inglott infocution to The	PO Box 170, Potts Point, NSW 1335	1.100	

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	A 2021-03-0	4 DA SUBMISSION	BR BEDROOM GAS GAS CUPBOARD RWORAINWATER OUTLET	1		DRODOGED RECIDENTIAL EL AT RUIL DING	19043			
	B 2021-06-2	2 DA SUBMISSION	COM COMMS CUPBOARD GD GRATED DRAIN SWP STORM WATER PIT					MORSON REGISTRATION NUMBER 8100 ACN 159 480 056, ABN 41 159 480 056	SIZE. AI	INAIV
	C 2021-09-2	2 DA SUBMISSION	E ELECTRICAL CUPBOARD MBX MAILBOX TOW TOP OF WALL	1	0 1 2 3 4 5 7 10m	ADDRESS 44 49 Redley Avenue Benrith NSW 2750	CLIEN I		SCALE:	
			FHR FIRE HOSE REEL RL RELATIVE LEVEL TTI TACTILE INDICATORS		SCALE 1:100@A1 (1:200@A3)	44-46 Houley Avenue, Feinili, Now, 2750	ingiow investments 1 wo	PO Box 170, Potts Point, NSW 1335	1:100	

Document: Sec. B: 9765802. Worson: 19043 - 44-48 Rodley Ave\19043 - 44-48 Rodley Ave\19043 - 44-48 Rodley Ave_DA_RH20210921.rvt Version: 1, Version Date: 13/10/2021

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Shadow Diagrams - 1pm 1:400 Shadow Diagrams - 2pm 1:400

Shadow Diagrams - 12pm 1:400



Shadow Diagrams - 3pm

1:400
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ABN 41 159 480 056 NOMINATED ARCHITECT: P Morson(8100)

[ISSUE	DATE	AMENDMENT	LEGENDS / NOTES:	•	PBOJECT		SHEET	
- [A	2021-03-04	DA SUBMISSION	BR BEDROOM GAS GAS CUPBOARD RWORAINWATER OUTLET		PROPOSED RESIDENTIAL ELAT BUILDING	19043	MORSON NOMINATED ARCHITECT - P F MORSON REGISTRATION NUMBER 8100	A1 NAME:
- [В	2021-06-22	DA SUBMISSION	CUM CUMMIS CUPBICARD GU GRATELI DRAIN SWP STORM WATER PTI DP DOWNPIPE GEX GARRAGE EXHAUST TOH TOP OF HOR	NORTH		CLIENT	ACN 159 480 056, ABN 41 159 480 056	
- [С	2021-09-22	DA SUBMISSION	E ELECTRICAL CUPBOARD MBX MAILBOX TOW TOP OF WALL	\bigcirc	44-48 Rodley Avenue, Penrith, NSW, 2750	Indow Investments Two		0
.[FHR FIRE HOSE REEL RL RELATIVE LEVEL TTI TACTILE INDICATORS				PO Box 170, Potts Point, NSW 1335 1.400	*

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SOLAR STUDY	DA25
	ISSUE No.
	С
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2 Level 1 - 10AM - 1sqm at 1m









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EYE OF THE SUN - COVER SHEET

Project No.

PROPOSED RESIDENTIAL FLAT BUILDING

Project Address

44-48 Rodley Avenue, Penrith, NSW, 2750



ACN 159 480 056, ABN 41 159 480 056 E: info@morsongroup.com.au P: (02) 9380 4946 P: PO Box 170, Potts Point, NSW, 1335

Client Inglow Investments Two

Project Status DA SUBMISSION

19043



	EOS - SHEET LIST											
Number	Name	Current Revision Date	Revision									
EOS00	EYE OF THE SUN - COVER SHEET	2021-09-22	В									
EOS01	EYE OF THE SUN - WEST (SHEET 1-7)	2021-09-22	В									
EOS02	EYE OF THE SUN - WEST (SHEET 2-7)	2021-09-22	В									
EOS03	EYE OF THE SUN - WEST (SHEET 3-7)	2021-09-22	В									
EOS04	EYE OF THE SUN - WEST (SHEET 4-7)	2021-09-22	В									
EOS05	EYE OF THE SUN - WEST (SHEET 5-7)	2021-09-22	В									
EOS06	EYE OF THE SUN - WEST (SHEET 6-7)	2021-09-22	В									
EOS07	EYE OF THE SUN - WEST (SHEET 7-7)	2021-09-22	В									
EOS15	EYE OF THE SUN - SUN LIGHT ACCESS SCHEDULE	2021-03-04	А									

EOS00

B

ISSUE NO.

EYE OF THE SUN - WEST (SHEET 1-7)

Project No.

PROPOSED RESIDENTIAL FLAT BUILDING

Project Address

44-48 Rodley Avenue, Penrith, NSW, 2750



ACN 159 480 056, ABN 41 159 480 056 E: info@morsongroup.com.au P: (02) 9380 4946 P: PO Box 170, Potts Point, NSW, 1335

Project Status DA SUBMISSION

19043





FROM THE SUN - 9.00AM JUN



EYE OF THE SUN - WEST (SHEET 2-7)

Project No.

PROPOSED RESIDENTIAL FLAT BUILDING

Project Address

44-48 Rodley Avenue, Penrith, NSW, 2750



ACN 159 480 056, ABN 41 159 480 056 E: info@morsongroup.com.au P: (02) 9380 4946 P: PO Box 170, Potts Point, NSW, 1335

Project Status DA SUBMISSION

19043





FROM THE SUN - 10.00AM JUN



EYE OF THE SUN - WEST (SHEET 3-7)

Project No.

Project

PROPOSED RESIDENTIAL FLAT BUILDING

Address

44-48 Rodley Avenue, Penrith, NSW, 2750



ACN 159 480 056, ABN 41 159 480 056 E: info@morsongroup.com.au P: (02) 9380 4946 P: PO Box 170, Potts Point, NSW, 1335

DA SUBMISSION Project Status

19043





FROM THE SUN - 11.00AM JUN



EYE OF THE SUN - WEST (SHEET 4-7)

Project No.

PROPOSED RESIDENTIAL FLAT BUILDING

Project Address

44-48 Rodley Avenue, Penrith, NSW, 2750



E: info@morsongroup.com.au P: (02) 9380 4946 P: PO Box 170, Potts Point, NSW, 1335

Inglow Investments Two

Client

Project Status DA SUBMISSION

19043



FROM THE SUN - 12.00PM JUN



EYE OF THE SUN - WEST (SHEET 5-7)

Project No.

PROPOSED RESIDENTIAL FLAT BUILDING

Project Address

44-48 Rodley Avenue, Penrith, NSW, 2750

Project Status DA SUBMISSION

19043



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client Inglow Investments Two



FROM THE SUN - 1.00PM JUN



EYE OF THE SUN - WEST (SHEET 6-7)

Project No.

PROPOSED RESIDENTIAL FLAT BUILDING

Project Address

44-48 Rodley Avenue, Penrith, NSW, 2750

Project Status DA SUBMISSION

19043



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client Inglow Investments Two



FROM THE SUN - 2.00PM JUN



EYE OF THE SUN - WEST (SHEET 7-7)

Project No. **19043**

PROPOSED RESIDENTIAL FLAT BUILDING

Project Address

44-48 Rodley Avenue, Penrith, NSW, 2750





E: info@morsongroup.com.au P: (02) 9380 4946 P: PO Box 170, Potts Point, NSW, 1335

client Inglow Investments Two



FROM THE SUN - 3.00PM JUN

EOS07

В

ISSUE NO.

EYE OF THE SUN - SUN LIGHT ACCESS SCHEDULE

Project No. 19043

PROPOSED RESIDENTIAL FLAT BUILDING



Project Address

44-48 Rodley Avenue, Penrith, NSW, 2750

Project Status DA SUBMISSION

Client Inglow Investments Two

	SOLA	AR ACCESS - CC	OMPLIANCE TABLE	
No.	Туре	Solar & Daylight Access	Time	Hours
GROUNI) LEVEL			
01	2 BED Adaptable	Yes	From 9:00am to 3:00pm	6:00 hours
02	3 BED Adaptable	Yes	From 9:00am to 3:00pm	6:00 hours
03	2 BED	No	From 12:00pm to 1:30pm	1:30 hours
04	2 BED	No	-	0:00 hours
LEVEL 1				
11	2 BED	Yes	From 9:00am to 3:00pm	6:00 hours
12	2 BED Adaptable	Yes	From 9:00am to 3:00pm	6:00 hours
13	2 BED	Yes	From 9:00am to 3:00pm	6:00 hours
14	2 BED	Yes	From 9:00am to 3:00pm	6:00 hours
15	2 BED	No	From 2:00pm to 3:00pm	1:00 hours
16	2 BED	No	-	0:00 hours
17	2 BED	Yes	From 9:00am to 11:00am	2:00 hours
LEVEL 2	-			
21	2 BED	Yes	From 9:00am to 3:00pm	6:00 hours
22	2 BED	Yes	From 9:00am to 3:00pm	6:00 hours
23	2 BED	Yes	From 9:00am to 3:00pm	6:00 hours
24	2 BED	Yes	From 9:00am to 3:00pm	6:00 hours
25	2 BED	No	From 2:00pm to 3:00pm	1:00 hours
26	2 BED	No	-	0:00 hours
27	2 BED	Yes	From 9:00am to 11:00am	2:00 hours
LEVEL 3				
31	2 BED	Yes	From 9:00am to 3:00pm	6:00 hours
32	2 BED	Yes	From 9:00am to 3:00pm	6:00 hours
33	2 BED	Yes	From 9:00am to 3:00pm	6:00 hours
34	2 BED	Yes	From 9:00am to 3:00pm	6:00 hours
35	2 BED	No	From 2:00pm to 3:00pm	1:00 hours
36	2 BED	No	-	0:00 hours
37	2 BED	Yes	From 9:00am to 11:00am	2:00 hours
LEVEL 4				,
41	3 BED	Yes	From 9:00am to 3:00pm	6:00 hours
42	3 BED	Yes	From 9:00am to 3:00pm	6:00 hours
43	2 BED	Yes	From 10:00am to 3:00pm	5:00 hours
44	2 BED	Yes	From 9:00am to 3:00pm	6:00 hours
UNITS: 2	9		·	72.4%

EOS15

A

ISSUE NO.

PROPOSED RESIDENTIAL DEVELOPMENT 44-48 RODLEY AVENUE, PENRITH STORMWATER CONCEPT DESIGN





PREPARED BY:

SGC Consulting Engineers Suite 5.03, Level 5 156 Pacific Highway ST. LEONARDS, NSW 2065 T: +61 2 8883 4239 Email: office@sgce.com.au Web: www.sgce.com.au

Document Set ID: 9765802 Version: 1, Version Date: 13/10/2021 LOCALITY PLAN NOT TO SCALE

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ARCHITECT:



INGLOW INVESTMENTS TWO P/L

CLIENT:

SHEET No.	DWG No.	TITLE	REV
1	SW100	COVER SHEET	G
2	SW200	STORMWATER CONCEPT DESIGN – BASEMENT 2 PLAN	G
3	SW201	STORMWATER CONCEPT DESIGN - GROUND FLOOR PLAN	G
4	SW202	STORMWATER CONCEPT DESIGN - ROOF PLAN	G
5	SW300	STORMWATER CONCEPT DESIGN - DETAILS SHEET	G
6	SW400	EROSION AND SEDIMENT CONTROL - PLAN AND DETAILS	G
7	SW500	MUSIC MODEL CATCHMENT PLAN	G

DRAWINGS LIST

Referenc

20200104



					Reference	Coordination Drawing			ENGINEERS		QUALITY	CONTROL		WARNING: THE DE
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PUMP-OUT PIT NOTE:

INSTALL WITH THE FOLLOWING ITEMS: - 900SQ HEAVY DUTY STEEL GRATED LID FOR ACCESS AND MAINTENANCE PURPOSES. -CONFINED SPACE SIGN ABOVE PUMP OUT PIT FOR PUBLIC AWARENESS AND WARNING. -STEP IRONS. REFER TO DETAILS. -PUMPOUT PIT CONTROL BOX (CTRL) TO MANUFACTURERS SPECIFICATIONS. LOCATIONS TO BE CONFIRMED WITH ARCHITECT. -PUMPS TO OPERATE IN ALTERNATE MODE TO INCREASE LIFESPAN -INSTALL VISIBLE FLASHING LIGHT SYSTEM IN

CASE OF PUMP FAILURE -INSTALL 1x DRN 300/2/65 A1DT/50 FROM ZENIT WATER SOLUTIONS OR SIMILAR 3 PHASE PUMPS WITH 10L/s OUTFLOW FOR 8m HEAD

SUBSOIL DESIGN CALCS: THE AREA OF DRIVEWAY RAMP IS COVERED

THEREFORE IN ACCORDANCE WITH AS3500, THE MINIMUM PUMPOUT PIT SIZE IS 3m³.

NOTES

BASEMENT DRAINAGE DESIGN SUBJECT TO GEOTECHNICAL INVESTIGATION AND STRUCTURAL DESIGN OF WALLS AND SLABS IN CC STAGE.

ALL SUBSOIL DRAINAGE (SSD) TO BE 100AG AND ALL DISH DRAIN OUTLETS (DDO) TO BE $ot \emptyset$ 100mm U.N.O

NOTE: ALL STORMWATER PUMPS TO BE CLASS 1 ZONE 2 FLAME SAFE TO ELECTRICAL CONSULTANT'S REQUIREMENTS.



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- SHALL BE AN APPROVED MATERIAL (EG. HUMES PROPEX SILT STOP) STANDING 300mm ABOVE GROUND & EXTENDING 150mm BELOW GROUND.
- BY SEDIMENT FENCING MATERIAL.
- LOWER SIDE OF THE SEDIMENT FENCE.
- PROVIDE A BUFFER ZONE TO THE CONSTRUCTION SITE.
- DRAWING. CONTRACTOR SHALL ENSURE ALL DROPPABLE SOIL & SEDIMENT IS REMOVED PRIOR TO CONSTRUCTION TRAFFIC EXITING SITE. CONTRACTOR SHALL ENSURE ALL CONSTRUCTION TRAFFIC ENTERING & LEAVING THE SITE DO SO IN A FORWARD DIRECTION.

- APPROVED BY LOCAL COUNCIL









MUSIC MODEL SITE AREA BREAK UP

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		Treatment Train Effectiveness - (85/60/45)			
			Sources	Residual Load	% Reduction
		Flow (ML/yr)	0.736	0.692	6
		Total Suspended Solids (kg/yr)	54.5	6.65	87.8
<u>www</u>		Total Phosphorus (kg/yr)	0.145	0.0579	60.2
		Total Nitrogen (kg/yr)	1.61	0.7	56.5
 Bioretention	(85/60/45)	Gross Pollutants (kg/yr)	20	0	100
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Document Transmittal

Project No. 19043

PROPOSED RESIDENTIAL FLAT BUILDING

Project Address

44-48 Rodley Avenue, Penrith, NSW, 2750

Project Status DA SUBMISSION

ACN 159 480 056, ABN 41 159 480 056 E: info@morsongroup.com.au P: (02) 9380 4946 P: PO Box 170, Potts Point, NSW, 1335

client Inglow Investments Two

Revision	Description	Date)	Issued to	0	Issued by
DA SL	JBMISSION	2021-0	3-04			RH
DA SL	JBMISSION	2021-0	6-22			RH
DA SL	JBMISSION	2021-0	9-22			RH
DA SL	JBMISSION	2021-1	0-12			RH
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DA01	VIEW AND SCHEDULES	С	2021-	09-22		
DA02	3D VIEWS	В	2021-	06-22		
DA03	3D VIEWS	С	2021-	09-22		
DA04	STATEMENT OF DESIGN & ENVIRONMENTAL EFFECTS	Α	2021-	03-04		
DA05	Compliance SEPP65 - Design Criteria & Objectives	А	2021-	03-04		
DA06	SITE ANALYSIS - CONTEXT STUDY	Α	2021-	03-04		
DA07	SITE PLAN	Α	2021-	03-04		
DA08	SITE ANALYSIS - STREETSCAPE / FORM STUDY	Α	2021-	03-04		
DA09	DEMOLITION PLAN	A	2021-	03-04		
DA10	BASEMENT 2	В	2021-	06-22		
DA11	BASEMENT 1	С	2021-	09-22		
DA12	GROUND LEVEL	В	2021-	06-22		
DA13		C	2021-	09-22		
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DA21	CBOSS SECTION 1	C	2021-	09-22		
DA23	CROSS SECTION 2	C	2021-	09-22		
DA24	LONG SECTION	C	2021-	09-22		
DA25	SOLAR STUDY	С	2021-	09-22		
DA26	SHADOW DIAGRAMS - 50-54_Rodley Av	Α	2021-	03-04		
DA27	SECTION 1-50	В	2021-	06-22		
DA28	MATERIAL SCHEDULE	Α	2021-	03-04		
DA29	WINDOW SCHEDULE	А	2021-	03-04		
DA30	No. 40-42 PROPOSED RESIDENTIAL FLAT BUILDING	А	2021-	03-04		
DA31	SOLAR ACCESS 1sqm at a height of 1m	В	2021-	10-12		
EOS00	EYE OF THE SUN - COVER SHEET	В	2021-	09-22		
EOS01	EYE OF THE SUN - WEST (SHEET 1-7)	В	2021-	09-22		
EOS02	EYE OF THE SUN - WEST (SHEET 2-7)	В	2021-	09-22		
EOS03	EYE OF THE SUN - WEST (SHEET 3-7)	В	2021-	09-22		
E0504	EYE OF THE SUN - WEST (SHEET 4-7)	В	2021-	09-22		
E0505		B	2021-	09-22		
E0500		B	2021-	09-22		
E0907		Δ	2021-	03-04		
E0500	EYE OF THE SUN - EAST (SHEET 2-7)	Δ	2021-	03-04		
E0503	EYE OF THE SUN - FAST (SHEET 2-7)	A	2021	03-04		
E0S11	EYE OF THE SUN - EAST (SHEET 4-7)	A	2021-	03-04		
EOS12	EYE OF THE SUN - EAST (SHEET 5-7)	A	2021-	03-04		
EOS13	EYE OF THE SUN - EAST (SHEET 6-7)	A	2021-	03-04		
EOS14	EYE OF THE SUN - EAST (SHEET 7-7)	Α	2021-	03-04		
EOS15	EYE OF THE SUN - SUN LIGHT ACCESS SCHEDULE	Α	2021-	03-04		

REPORT R200541R1

Revision 1

Road Noise and Race Track Impact Assessment Proposed Residential Development 44 - 48 Rodley Avenue, Penrith

PREPARED FOR:

Inglow Investment Two Pty Ltd

C/o Morson Group PO Box 170 POTTS POINT NSW 2011

21 September 2021

PO Box 522 Wahroonga NSW 2076 P 02 9943 5057 F 02 9475 1019 mail@rodneystevensacoustics.com.au ocument Set ID: 9765802 ersion: 1, Version Date: 13/10/2021

Road Noise and Race Track Impact Assessment

Proposed Residential Development

44 - 48 Rodley Avenue, Penrith

PREPARED BY:

Rodney Stevens Acoustics Pty Ltd Telephone: 61 2 9943 5057 Facsimile 61 2 9475 1019 Email: info@rodneystevensacoustics.com.au Web: www.rodneystevensacoustics.com.au

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DOCUMENT CONTROL

Reference	Status	Date	Prepared	Checked	Authorised
R200541R1	Revision 0	16 December 2020	Desmond Raymond	Rodney Stevens	Rodney Stevens
R200541R1	Revision 1	21 September 2021	Dani Awad	Desmond Raymond	Rodney Stevens

Rodney Stevens Acoustics Report Number R200541R1 Revision 0

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1 INTRODUCTION

Rodney Stevens Acoustics Pty Ltd (here forth referred to as RSA) has been engaged by Morson Group to conduct a Road and Race Track Noise Impact Assessment for Development Application (DA) lodgment of the proposed multi residential development, 44 - 48 Rodley Avenue, Penrith.

This report addresses the road traffic noise impacts from Mulgoa Road and the noise emitted from harness racing at the Penrith Showground on the amenity of the proposed multi-residential development. In addition, mechanical plant noise criteria have been established.

This assessment is to form part of the supporting documentation for the DA submission to Penrith City Council.

Specific acoustic terminology is used in this report. An explanation of common acoustic terms is provided in Appendix A

2 PROPOSED DEVELOPMENT

2.1 Site Location

The proposed residential development site is located at 44 - 48 Rodley Avenue, Penrith, it is bounded by residential premises to the north and east, the Penrith Showground to the south and Mulgoa Road to the west. The location of the proposed site and its surroundings is presented in Figure 2-1.

Figure 2-1 Site Location

Aerial image courtesy of Sixmaps © 2020

2.2 Proposed Development

The proposal is to demolish the existing residential dwellings at 44 - 48 Rodley Avenue, Penrith, and build a 5 storey multi-residential building. The architectural plans of the proposed residential development are presented in Appendix D.

3 EXISTING ACOUSTIC ENVIRONMENT

3.1 Unattended Noise Monitoring

In order to characterise the existing acoustical environment of the area, unattended noise monitoring was conducted between 8th December and 14th December 2020 at the logging locations shown in Figure 2-1. The first noise logger was located on the front yard of the site overlooking Mulgoa Road. The noise monitoring at this location is representative of the traffic noise the future facades will encounter

The second noise logger was located at the rear yard of the site. The noise monitoring at this location is representative of the acoustic environment at the project site.

Logger locations were selected with consideration to other noise sources, which may influence readings, security issues for noise monitoring equipment and gaining permission for access from other landowners.

Instrumentation for the survey comprised of 2 Rion NL42 environmental noise logger (serial numbers 572542 and 546395) fitted with microphone windshields. Calibration of the logger was checked prior to and following measurements. Drift in calibration did not exceed ± 0.5 dB(A). All equipment carried appropriate and current NATA (or manufacturer) calibration certificates.

3.2 Ambient Noise Level Results

In order to assess the acoustical implications of the proposed development on the levels of noise received at the neighboring residential premises, the measured data was processed according to the NSW Ambient Noise Levels.

		Noise Lev	/el – dBA re 20 µPa		
D	Day	Eve	ening	I	Night
RBL ¹	L _{Aeq} ²	RBL ¹	L _{Aeq} ²	RBL ¹	L _{Aeq} ²
39	49	40	51 ³	36	47

Table 3-1Ambient Noise Results

Note 1: The RBL noise level is representative of the average minimum background sound level (in the absence of the source under consideration), or simply the background level.

Note 2: The L_{Aeq} is essentially the average sound level. It is defined as the steady sound level that contains the same amount of acoustical energy as a given time-varying sound.

Note 3: The data has been filtered to remove excessive events on 13 December 2020

4 NOISE CRITERIA

4.1 Road Noise Criteria

The determination of an acceptable level of road noise affecting the internal residential spaces requires consideration of the activities carried out within the space and the degree to which noise will interfere with those activities.

As sleep is the activity most affected by traffic noise, bedrooms are considered the most sensitive internal living areas. Higher levels of noise are acceptable in living areas without interfering with activities such as reading, listening to the television etc. Noise levels in utility spaces such as kitchens, bathrooms, laundries etc. can be higher.

4.1.1 State Environmental Planning Policy (Infrastructure) 2007

Road Noise Criteria

The NSW Government's State Environmental Planning Policy (Infrastructure) 2007 (SEPP (Infrastructure) 2007) was introduced to facilitate the delivery of infrastructure across the State by improving regulatory certainty and efficiency. In accordance with the SEPP, Table 3.1 of the NSW Department of Planning and Infrastructure's "*Development near Rail Corridors and Busy Roads - Interim Guideline*" (the DP&I Guideline) of December 2008 provides noise criteria for residential and non-residential buildings. These criteria are summarised in Table 4-1.

Table 4-1 DP&I Interim Guideline Noise Criteria

Type of occupancy	Noise Level dB(A)	Applicable time period
Sleeping areas (bedroom)	35	Night 10 pm to 7 am
Other habitable rooms (excl. garages, kitchens, bathrooms & hallways)	40	At any time

Note 1: Airborne noise is calculated as L_{Aeq(15hour)} daytime and L_{Aeq(9hour)} night-time

The following guidance is also provided in the DP&I Guideline:

"These criteria apply to all forms of residential buildings as well as aged care and nursing home facilities. For some residential buildings, the applicants may wish to apply more stringent design goals in response to market demand for a higher quality living environment.

The night-time "sleeping areas" criterion is 5 dB(A) more stringent than the "living areas" criteria to promote passive acoustic design principles. For example, designing the building such that sleeping areas are less exposed to road or rail noise than living areas may result in less onerous requirements for glazing, wall construction and acoustic seals. 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, if they so desire, and also to meet the ventilation requirements of the Building Code of Australia."

The noise criteria presented in Section 4.1.1 and in Table 4-1 apply to a 'windows closed condition'. Standard window glazing of a building will typically attenuate noise ingress by 20 dB(A) with windows closed and 10 dB(A) with windows open (allowing for natural ventilation). Accordingly, the external noise threshold above which a dwelling will require mechanical ventilation is an $L_{Aeq(9hour)}$ of 55 dB(A) for bedrooms and $L_{Aeq(15hour)}$ of 60 dB(A) for other areas.

Where windows must be kept closed, the adopted ventilation systems must meet the requirements of the Building Code of Australia and Australian Standard 1668 – The use of ventilation and air conditioning in buildings.

4.2 Protection of the Environment Operations Act 1997

In accordance with the POEO Act, the proposed development should not cause "Offensive Noise" to the neighbouring residential receivers. The definition of "Offensive Noise" in the POEO Act is noise:

- a) that, by reason of its level, nature, character or quality, or the time at which it is made, or any other circumstances:
 - (i) is harmful to (or is likely to be harmful to) a person who is outside the premises from which it is emitted, or
 - (ii) interferes unreasonably with (or is likely to interfere unreasonably with) the comfort or repose of a person who is outside the premises from which it is emitted, or
- b) that is of a level, nature, character or quality prescribed by the regulations or that is made at a time, or in other circumstances, prescribed by the regulations.

As the POEO Act does not prescribe any numerical criteria to ensure that the development does not cause "Offensive Noise". Hence, appropriate noise guidelines and policies to assess mechanical plant noise have been prescribed in this assessment report to quantify if the operation of the project will cause "Offensive Noise".

4.3 Protection of the Environment Operations (Noise Control) 2008 – Item 52

Air conditioners and heat pump water heaters

1) A person must not cause or permit an air conditioner or heat pump water heater to be used on residential premises in such a manner that it emits noise that can be heard within a habitable room in any other residential premises (regardless of whether any door or window to that room is open):

- (a) before 8 am or after 10 pm on any Saturday, Sunday or public holiday, or
- (b) before 7 am or after 10 pm on any other day.

4.4 Operational Noise Project Trigger Noise Levels

Responsibility for the control of noise emissions in New South Wales is vested in Local Government and the EPA. The EPA oversees the Noise Policy for Industry (NPfI) October 2017 which provides a framework and process for deriving project trigger noise level. The NPfI project noise levels for industrial noise sources have two (2) components:

- Controlling the intrusive noise impacts for residents and other sensitive receivers in the short term; and
- Maintaining noise level amenity for particular land uses for residents and sensitive receivers in other land uses.

4.4.1 Intrusiveness Noise Levels

For assessing intrusiveness, the background noise generally needs to be measured. The intrusiveness noise level essentially means that the equivalent continuous noise level (LAeq) of the source should not be more than 5 dB(A) above the measured Rated Background Level (RBL), over any 15-minute period.

The amenity noise level is based on land use and associated activities (and their sensitivity to noise emission). The cumulative effect of noise from industrial sources needs to be considered in assessing the impact. The noise levels relate only to other industrial-type noise sources and do not include road, rail or community noise. The existing noise level from industry is measured.

If it approaches the project trigger noise level value, then noise levels from new industrial-type noise sources, (including air-conditioning mechanical plant) need to be designed so that the cumulative effect does not produce total noise levels that would significantly exceed the project trigger noise level.

4.4.3 Area Classification

The NPfl characterises the "Urban" noise environment as an area with an acoustical environment that:

- is dominated by 'urban hum' or industrial source noise,
- where urban hum means the aggregate sound of many unidentifiable, mostly traffic and/or industrial related sound sources
- has through-traffic with characteristically heavy and continuous traffic flows during peak periods
- is near commercial districts or industrial districts
- has any combination of the above.

The area surrounding the proposed development falls under the "Urban" area classification.

4.4.4 Project Specific Trigger Noise Levels

Having defined the area type, the processed results of the attended noise monitoring have been used to determine project specific project trigger noise level. The intrusive and amenity project trigger noise level for nearby residential premises are presented in Table 4-2. These project trigger noise levels are nominated for the purpose of assessing potential noise impacts from the proposed development.

For each assessment period, the lower (i.e. the more stringent) of the amenity or intrusive criteria are adopted. These are shown in bold text in Table 4-2.

			Mea	sured	Project specific Noise Levels	
Receiver	Time of Day	ANL ¹ L _{Aeq(15min)}	RBL ² LA90(15min)	L _{Aeq} Noise Level)	Intrusive LAeq(15min)	Amenity ³ L _{Aeq(15min)}
	Day	60	39	49	44	63
Residential	Evening	50	40	51	45	53
	Night	45	36	47	41	48

Table 4-2 Project Specific Trigger Noise Levels

Note 1: ANL = "Acceptable Noise Level" for residences in Urban Areas.

Note 2: RBL = "Rating Background Level".

Note 3: Assuming existing noise levels are unlikely to decrease in the future

5 NOISE IMPACT ASSESSMENT

5.1 Road Traffic Noise

5.1.1 Road Traffic Noise Intrusion Assessment

In order to ascertain the existing noise levels from the Mulgoa Road, the measured noise logger data was processed in accordance to the NSW Road Noise Policy assessment time periods. Table 5-1 details the traffic noise levels.

Table 5-1 Measured Traffic Noise Levels

	Noise Level – dB(A) re 20 µPa			
Logger Location —	L _{Aeq} (15hour) 07:00 - 22:00	L _{Aeq} (9hour) 22:00 to 07:00		
Rodley Avenue	63	48		

Traffic noise levels recorded by the noise logger have been corrected to account for the distance from the road to the proposed façade. These are representative of the noise levels the proposed façade will encounter.

5.2 Penrith Showground Race Track

In order to ascertain the noise emitted by Penrith Paceway, RSA has relied on attended measurements carried out on Thursday 2nd June 2016 between 6:00pm and 9:00pm at the location shown in Figure 4-2. Harness races take place every Thursday between 6:00 pm and 10:00 pm.

RSA has relied on this data as due to COVID-19 restrictions; the Paceway is operating at a limited capacity. The noise measurements conducted previously is considered an appropriate alternative and have been relied on for the noise impact from the track to the development.

A summary of the different noise sources and resulting noise levels is presented in Table 5-2

Table 5-2 Attended Noise Measurements

	Noise Level – dB(A) re 20 µPa			
Activity	L _{Aeq}			
PA Announcements	70			
Horses Warming Up	74			
Horses Lining Up with Gate Car	82			
Horses Racing	84			
Tractor	81			
Truck	78			

We note that all activities do not occur at the same time, the noise levels presented above were measured approximately 9 meters from the track's centre line and are representative of each activity pass by.

5.2.1 Paceway Noise Intrusion Assessment

The noise levels presented in Table 5-2 were used to calculate the overall noise emitted by a single race considering the time each activity takes place. Each race consists of the following:

- Horses come out on track and start warm up laps
- Horses line up at start line and wait for gate car
- Horses begins trotting behind gate car
- Races begins
- Race ends and horses exit track
- Tractor or truck combs the racing track

The PA announcements occur before, after and throughout the race. No PA announcements occur while the tractor or truck is smoothing the race track.

The following table shows the calculated noise levels at the facades of the proposed multi residential development.

Table 5-3	Calculated Noise Levels at Proposed Development
	Calculated Holee Ectole at 1 Topeced Development

Floor	Noise Level – dB(A) re 20 µPa		
	L _{Aeq}		
Ground	69		
Level 1	70		
Level 2 - 4	73		
Level 5	72		

5.3 Mechanical Plant Noise Emission

Calculations of the noise levels from the operation of the proposed mechanical plant have been carried out using the information in section 5.4. We have used the worst-case scenario where all plant is running at the same time. Calculations consider factors such as distance, shielding from buildings and barriers.

The following figure presents the proposed development and all sensitive receivers

Figure 5-1 Sensitive Receiver Location

5.3.1 Mechanical Plant Schedule

Morson Group has proposed 29 outdoor air-conditioning condenser units located on the rooftop that will service the development. It is proposed to use Daikin RXYMQ5AV4A condenser units or similar, the units will be installed on the roof top and the plant deck will be fitted with acoustic louvres. The rated sound power level of each unit is 71 dB(A).

5.3.2 Predicted Noise Levels

Predictive resultant noise levels have been calculated for all mechanical plant items. Noise emissions at the nearest residential receivers are presented in the table below. The predicted noise calculations consider the following:

- Heights of receivers are assumed to be 1.5 meters above respective level.
- All mechanical plant is operational at the same time (worst case scenario).
- 1.8-meter-high acoustic louvres are in place on the roof top (Refer to Appendix).
- Resulting noise levels have been calculated to the most affected point on the boundary of the affected receivers.

Receiver	Period	Calculated Noise Level L _{Aeq} – dB(A)	Criteria	Compliance
	Day	38	44	Yes
R1	Evening	38	45	Yes
	Night	38	41	Yes
R2	Day	20	44	Yes
	Evening	20	45	Yes
	Night	20	41	Yes
	Day	26	44	Yes
R3	Evening	26	45	Yes
	Night	26	41	Yes

Table 5-4 Predicted Noise Levels At Sensitive Receivers.

6 RECOMMENDED NOISE CONTROL TREATMENT

The calculation procedure establishes the required noise insulation performance of each surface component such that the internal noise level is achieved whilst an equal contribution of traffic noise energy is distributed across each component. Building envelope components with a greater surface area must therefore offer increased noise insulation performance.

The recommended acoustic treatment is based on the following floor finishes:

- Bedrooms: Carpet and underlay
- Living Room Hard Flooring
- Kitchen/Wet Areas: Tiles

The acoustic requirements shown in this report will increase further where the bedroom floor finishes are tiled or timber.

All recommendations must be checked by others to ensure compliance with other non-acoustic requirements that Council or other authority may impose (e.g. Thermal requirements for BASIX compliance).

6.1 Glazing

The R_w rating required for each window will vary from room to room. Recommendations for windows also apply to any other item of glazing located on the external facade of the building in a habitable room unless otherwise stated.

Note that the R_w rating is required for the complete glazing and frame assembly. The minimum glazing thicknesses will not necessarily meet the required R_w rating without an appropriate frame system. It will be

therefore necessary to provide a window glass and frame system having a laboratory tested acoustic performance meeting the requirements acoustic requirements.

The window systems must be tested in accordance with both of the following:

- Australian Window Association Industry Code of Practice Window and Door Method of Acoustic Testing; and
- AS 1191 Acoustics Method for laboratory measurement of airborne sound insulation of building elements.

It is necessary to submit such Laboratory certification for the proposed glazing systems (i.e. windows and framing systems) (e.g. NAL or CSIRO) for approval by RSA Acoustics prior to ordering or commitment.

The entire frame associated with the glazing must be sealed into the structural opening using acoustic mastics and backer rods. Normal weather proofing details do not necessarily provide the full acoustic insulation potential of the window system. The manufacturers' installation instructions for the correct acoustic sealing of the frame must be followed.

It is possible that structural demands for wind loading or fire rating or the like may require more substantial glass and framing assemblies than nominated above. Where this is the case the acoustic requirements must clearly be superseded by the structural or fire rating demands.

6.2 Rw Requirements for Glazing

Standard glazing may be installed on the northern and north-east and north-west facades, standard aluminium frames, quality seals (rubber seals) and 6mm glass panes should be installed to maintain a good degree of noise insulation. Other glazing systems may be available but their Rw rating must be reviewed prior to installation. No further acoustic requirements are needed.

Due to noise emissions from the activities carried out at Penrith Paceway, the apartments on the southern façade facing the racing track must be upgraded to maintain a good degree of noise isolation. The following upgrades are required.

The assessment has also considered noise attenuation provided by the multi-storey building on the South west.

Room	Windows	Glazed Doors
Ground Floor (South, South East & South west)		
Living Room	Rw 33	Rw 35
Bedroom	Rw 33	Rw 35
Levels 1 - 3 (South, South East & South west)		
Living Room	Rw 35	Rw 35
Bedroom	Rw 35	Rw 35
Level 4 (South, South East & South west)		
Living Room	Rw 38	Rw 38

Table 6-1 Required Glazing Upgrades

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1	1	7	1	7	1	1	1	7	5	J	'))

Room	Windows	Glazed Doors
Bedroom	Rw 38	Rw 38
Level 5 (South, South East & South west)		
Living Room	Rw 38	Rw 38
Bedroom	Rw 38	Rw 38

6.3 Mechanical Ventilation

The windows and doors can be opened for natural ventilation throughout the proposed development. If mechanical ventilation is needed it must be approved by Council and it should be implemented in accordance with the relevant regulations such as the National Construction Code (NCC Vol.1, Part 4.5 *Ventilation of rooms*) and AS1668.2-2002 *The use of ventilation and air conditioning* will be required.

7 CONCLUSION

Rodney Stevens Acoustics has conducted a review of the proposed multi-storey residential development at 44 - 48 Rodley Avenue, Penrith. The review has assessed the noise generated by Penrith Paceway on the site as well as traffic noise intrusion and compared it with the noise criteria required by in Penrith City Council and other relevant standards.

Noise emissions criteria for mechanical plant has been stablished in accordance with the EPA's Noise Policy for Industry intrusiveness and amenity. A further noise survey must be carried out once a mechanical plant schedule has been finalised.

Based on the noise impact study conducted, the proposed development is assessed to comply with the SEPP (Infrastructure) 2007 noise criteria with recommendations from this report. It is therefore recommended that planning approval be granted for the proposed development on the basis of acoustics.

Approved: -

Kodney O. Stermo

Rodney Stevens Manager/Principal

Appendix A Acoustic Terminology

- A-weighted sound pressure The human ear is not equally sensitive to sound at different frequencies. People are more sensitive to sound in the range of 1 to 4 kHz (1000 – 4000 vibrations per second) and less sensitive to lower and higher frequency sound. During noise measurement an electronic '*A-weighting*' frequency filter is applied to the measured sound level *dB*(*A*) to account for these sensitivities. Other frequency weightings (B, C and D) are less commonly used. Sound measured without a filter is denoted as linear weighted dB(linear).
- Ambient noise The total noise in a given situation, inclusive of all noise source contributions in the near and far field.

Community Includes noise annoyance due to:

- annoyance • character of the noise (e.g. sound pressure level, tonality, impulsiveness, low-frequency content)
 - character of the environment (e.g. very quiet suburban, suburban, urban, near industry)
 - miscellaneous circumstances (e.g. noise avoidance possibilities, cognitive noise, unpleasant associations)
 - human activity being interrupted (e.g. sleep, communicating, reading, working, listening to radio/TV, recreation).
- **Compliance** The process of checking that source noise levels meet with the noise limits in a statutory context.
- Cumulative noise The total level of noise from all sources.
- **Extraneous noise** Noise resulting from activities that are not typical to the area. Atypical activities may include construction, and traffic generated by holiday periods and by special events such as concerts or sporting events. Normal daily traffic is not considered to be extraneous.

Feasible and
reasonableFeasibility relates to engineering considerations and what is practical to
build; reasonableness relates to the application of judgement in arriving at
a decision, taking into account the following factors:

- Noise mitigation benefits (amount of noise reduction provided, number of people protected).
 - Cost of mitigation (cost of mitigation versus benefit provided).
 - Community views (aesthetic impacts and community wishes).
- Noise levels for affected land uses (existing and future levels, and changes in noise levels).

Impulsiveness Impulsive noise is noise with a high peak of short duration or a sequence of these peaks. Impulsive noise is also considered annoying.

level

Low frequency	Noise containing major components in the low-frequency range (20 to 250 Hz) of the frequency spectrum.
Noise criteria	The general set of non-mandatory noise levels for protecting against intrusive noise (for example, background noise plus 5 dB) and loss of amenity (e.g. noise levels for various land use).
Noise level (goal)	A noise level that should be adopted for planning purposes as the highest acceptable noise level for the specific area, land use and time of day.
Noise limits	Enforceable noise levels that appear in conditions on consents and licences. The noise limits are based on achievable noise levels, which the proponent has predicted can be met during the environmental assessment. Exceedance of the noise limits can result in the requirement for either the development of noise management plans or legal action.
Performance- based goals	Goals specified in terms of the outcomes/performance to be achieved, but not in terms of the means of achieving them.
Rating Background Level (RBL)	The rating background level is the overall single figure background level representing each day, evening and night time period. The rating background level is the 10^{th} percentile min L _{A90} noise level measured over all day, evening and night time monitoring periods.
Receptor	The noise-sensitive land use at which noise from a development can be heard.
Sleep disturbance	Awakenings and disturbance of sleep stages.
Sound and decibels (dB)	Sound (or noise) is caused by minute changes in atmospheric pressure that are detected by the human ear. The ratio between the quietest noise audible and that which should cause permanent hearing damage is a million times the change in sound pressure. To simplify this range the sound pressures are logarithmically converted to decibels from a reference level of $2 \times 10-5$ Pa. The picture below indicates typical noise levels from common noise sources.

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dB is the abbreviation for decibel - a unit of sound measurement. It is equivalent to 10 times the logarithm (to base 10) of the ratio of a given sound pressure to a reference pressure.

Sound power The sound power level of a noise source is the sound energy emitted by Level (SWL) the source. Notated as SWL, sound power levels are typically presented in dB(A).

Sound Pressure The level of noise, usually expressed as SPL in dB(A), as measured by a Level (SPL) standard sound level meter with a pressure microphone. The sound pressure level in dB(A) gives a close indication of the subjective loudness of the noise.

Statistic noise Noise levels varying over time (e.g. community noise, traffic noise, construction noise) are described in terms of the statistical exceedance level.

> A hypothetical example of A weighted noise levels over a 15-minute measurement period is indicated in the following figure:

Key descriptors:

- Maximum recorded noise level. LAmax
- L_{A1} The noise level exceeded for 1% of the 15 minute interval.

levels

L_{A10} Noise level present for 10% of the 15-minute interval. Commonly referred to the average maximum noise level.

L_{Aeq} Equivalent continuous (energy average) A-weighted sound pressure level. It is defined as the steady sound level that contains the same amount of acoustic energy as the corresponding time-varying sound.

 L_{A90} Noise level exceeded for 90% of time (background level). The average minimum background sound level (in the absence of the source under consideration).

ThresholdThe lowest sound pressure level that produces a detectable response (in
an instrument/person).

TonalityTonal noise contains one or more prominent tones (and characterised by
a distinct frequency components) and is considered more annoying. A 2 to
5 dB(A) penalty is typically applied to noise sources with tonal
characteristics

Rodney Stevens Acoustics Report Number R200541R1 Revision 1 Document Set ID: 9765802 Version: 1, Version Date: 13/10/2021 ((((((())))

Ambient Logger Data

44-48 Rodley Ave, Penrith

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44-48 Rodley Ave, Penrith

Ambient Logger Data

44-48 Rodley Ave, Penrith

Sunday 13/12/20

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Traffic Logger Data

44-48 Rodley Ave, Penrith

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14:00

15:00

13:00

8:00

9:00 00:0 11:00 12:00 Time 24hrs → L1 → L10 → L90 → Leq 17:00 18:00 19:00 20:00 21:00

16:00

1:00

2:00 3:00 4:00 5:00 6:00 7:00

0:00

22:00 23:00]

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Traffic Logger Data

44-48 Rodley Ave, Penrith

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Traffic Logger Data

44-48 Rodley Ave, Penrith

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Appendix C Calibration Certificate

Sound Level Meter IEC 61672-3.2013 Calibration Certificate

Calibration Number C19006

Client Details	Rod I M St I	Iney Stevens Acoustics Pty Ltd Iajura Close ves NSW 2075		
Equipment Tested/ Model Number :		n NL-42EX		_
Instrument Serial Number :		46395		
Microphone Serial Number :		589		
Pre-amplifier Serial Number	: 230	57		
Pre-Test Atmospheric Conditions		Post-Test Atmospheric Condit	tions	_
Ambient Temperature : 22.3°C		Ambient Temperature :	23.5°C	
Relative Humidity : 54.1%		Relative Humidity :	54.2%	
Barometric Pressure : 99.64kPa		Barometric Pressure :	99.63kPa	
Calibration Technician : Vicky Jaiswal		Secondary Check: Lewis Boom	กลท	-
Calibration Date : 10 Jan 2019		Report Issue Date : 11 Jan 2019		
Approved Signatory	A	D.	Ken Willia	ms
Clause and Characteristic Tested R	esult	Clause and Characteristic Tested	Rest	ult
12: Acoustical Sig. tests of a frequency weighting	Pass	17: Level linearity incl. the level range co	ontrol Pas	15
13: Electrical Sig. tests of frequency weightings P		18: Toneburst response	Pas	15
14: Frequency and time weightings at 1 kHz Pa		19: C Weighted Peak Sound Level	Pas	18
15: Long Term Stability	Pass	20: Overload Indication	Pas	68.
16: Level linearity on the reference level range	Pass	21: High Level Stability	Pas	88

The sound level meter submitted for testing has successfully completed the class 2 periodic tests of IEC 61672-3 2013, for the environmental conditions under which the tests were performed.

However, no general statement or conclusion can be made about conformance of the sound level meter to the full requirements of IEC 61672-1.2013 because evidence was not publicly available, from an independent testing organisation responsible for pattern approvals, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1.2013 and because the periodic tests of IEC 61672-3.2013 cover only a limited subset of the specifications in IEC 61672-1.2013.

Least Uncertainties of Measurement -					
Acoustic Tests 31.5 Hz to 8kHz 12.5kHz 16kHz Electrical Tests	=0.15dB =0.21dB =0.29dB	Environmental Conditions Temperature Relative Humiday Barometric Pressure	+0.2°C +2.4% +0.0154Pa		
31.5 Hz to 20 kHz	+0.1208				

All uncertainties are derived at the 95% confidence level with a civerage factor of 2.

This calibration certificate is to be read in conjunction with the calibration test report.

Acoustic Research Labs Pty Ltd is NATA Accredited Laboratory Number 14172 Accredited for compliance with ISO/IEC 17025 - calibration

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards

NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration and inspection reports.

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Sound Level Meter IEC 61672-3.2013

Calibration Certificate

Calibration Number C19390

Client Details	Rodi 1 Ma St Iv	ney Stevens Acoustics Pty Ltd ajura Close es Chase NSW 2075		
Equipment Tested/ Model Number :	Rion	NL-42EX		
Instrument Serial Number :	0057	72542		
Microphone Serial Number :	1703	370		
Pre-amplifier Serial Number :	7288	80		
Pre-Test Atmospheric Conditions		Post-Test Atmospheric Cone	ditions	1
Ambient Temperature : 23.7°C		Ambient Temperature	: 23.	8°C
Relative Humidity : 38,9%		Relative Humidity	: 38.	0%
Barometric Pressure : 101.88kPa		Barometric Pressure	: 101	.88kPa
Calibration Technician : Lucky Jaiswal		Secondary Check: Eloise Burn	rows	
Calibration Date : 3 Jul 2019		Report Issue Date : 8 Jul 2019		
Approved Signatory :	the		Ker	h Williams
Clause and Characteristic Tested Re		Clause and Characteristic Tested	1	Result
12: Acoustical Sig. tests of a frequency weighting PA		17: Level linearity incl. the level range control		Pass
13: Electrical Sig. tests of frequency weightings Plant		18: Toneburst response		Pass
14: Frequency and time weightings at 1 kHz P	255	19: C Weighted Peak Sound Level		Pass
15: Long Term Stability P	6355	20: Overload Indication		Pass
16: Level linearity on the reference level range P	4255	21: High Level Stability		Pass

The sound level meter submitted for testing has successfully completed the class 2 periodic tests of IEC 61672-3/2013, for the environmental conditions under which the tests were performed.

However, no general statement or conclusion can be made about conformance of the sound level meter to the full requirements of IEC 61672-1 2013 because evidence was not publicly available, from an independent testing organisation responsible for pattern approvals, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1 2013 and because the periodic tests of IEC 61672-3 2013 cover only a limited subset of the specifications in IEC 61672-1 2013

	Le	ast Uncertainties of Measurement -	
Acoustic Tests		Environmental Conditions	
31.5 Hz to 8kHz	+0.15dB	Temperature	10.2°C
12 5411:	±0.2dB	Relative Humiday	+2.4%
16k11=	+0.29dB	Barometric Pressure	+0.015kPa
Electrical Tests			
31 5 H: to 20 kH:	=11 1 1 dill		

All uncertainties are derived at the 95% confidence level with a coverage factor of 2.

This calibration certificate is to be read in conjunction with the calibration test report

Acoustic Research Labs Pty Ltd is NATA Accredited Laboratory Number 14172 Accredited for compliance with ISO/IEC 17025 - calibration

The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/national standards

NATA is a signatory to the ILAC Musual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration and inspection reports.

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Appendix E Roof Top Mechanical Plant

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