

CRAIG HILL ACOUSTICS

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Cool Room Addition and Extended Operating Hours

Thursday, 02 December 2021

RE: Lot 11 DP 631221 - 10 Queen Elizabeth Drive, Coraki (NSW)

1.0 Introduction

A noise impact compliance test was previously conducted at 10 Queen Elizabeth Drive, Coraki (NSW) on Tuesday, 30 March 2021 to determine compliance with item 38 of conditions of consent dated 9 December 2020.

The applicant is proposing to extend our opening hours and add a cool room to the existing premises.

Existing operating hours: Mondays to Sundays inclusive: 6 am to 7 pm.

Proposed operating hours: Monday to Friday: 5:30 am to 7:30 pm and Saturday/Sunday: 6:30 am - 7:30 pm.

Cool room construction located internally with the compressor mounted externally.

Compressor: Kirby Compressor KN028MH1-1: 71.9 LWA / 54.1 SPL @ 3m.

Background levels measured previously would be suitable to establish design levels for additional operating hours and plant.

Figure 1.0 Building 1 location of café (takeaway food)



1.1 Description of activities:

Opening hours 5.30am-7.30 pm, 7 days.

1.2 Noise generating activities:

(i) Kitchen exhaust fan:

Food services for takeaways: Kitchen exhaust fan 1100-1900 hrs not required for early mornings.

(ii) Refrigeration:

(a) Existing refrigeration is internal and not audible outside the building.

(b) New cool room compressor : Kirby Compressor KN028MH1-1: 71.9 LWA / 54.1 SPL @ 3m.

(iii) Toilet exhaust

Toilet exhaust is via a domestic ceiling exhaust and not audible outside the building.

(iv) Kitchen activities

Set up / cooking washing up / cleaning.

No rear open door or external opening for noise to escape therefore noise from kitchen activities would not be audible at nearest noise sensitive place.

(v) New cool room

Options 1 and 2 shown in item 8.

2.0 Methodology

Intrusive tests (LAeq) were conducted at the boundary of the nearest noise sensitive places with exhaust fan on high.

Ambient levels (LA90) were established on Sunday 28, March 2021 between 0530-1930 hrs (DST) for an example of worst case.

3.0 Criteria

Noise from all plant would be required to be within the criteria of LAeq = ambient LA90+5.

4.0 Testing Equipment

The following equipment was utilised during the test assessments: Svantec Type 1, Sound and Vibration Analyser Model 949 Serial No 6023. calibrated June 2019.

BSWA Sound Level Calibrator Serial No 490190. calibrated June 2020.

The above equipment complies with the requirements of Australian Standards 1259.2 1990, Sound Level Meters, Part 2 Integrating – Averaging, as required by the Australian Standards.

Equipment was calibrated before the tests and checked after and found to be within the acceptable drift.

The above equipment complies with the requirements in **IEC 61672**.

5.0 Surroundings testing locations

S1: Boundary of 8 Donaldson Street.

S2: Boundary 35 Belmore Street.

Figure 5.0 Google earth



6.0 Tests

Attended monitoring: Tests previously conducted Tuesday, 30 March 2021.

7.0 Ambient and Design levels

Ambient levels based on previous test.

Table 7.0 Test results

Start time hrs (dst)	LA90 (15min)	Criteria LAeq=LA90+5
5.30	30	35
19:30	38	43

For the purpose of the new cool room equipment the criteria of 35 LAeq (ambient +5) will be adopted.

8.0 PREDICTIONS / Options

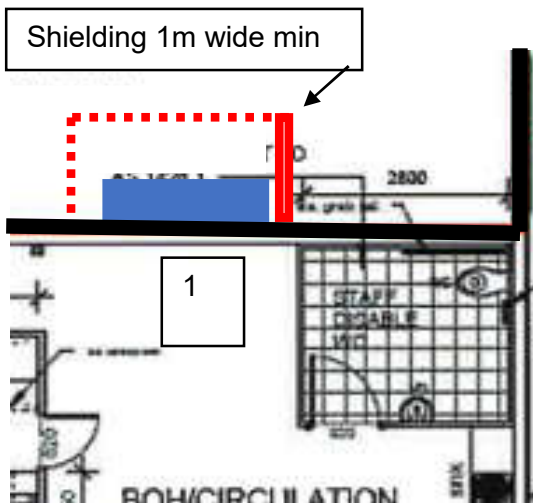
8.1 Option 1

Table 8.1 option 1

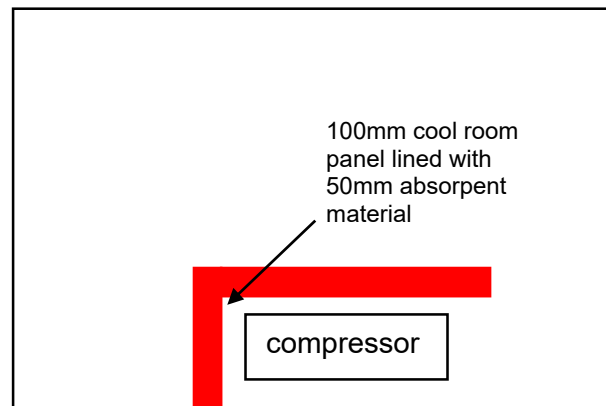
Receiver	Source @ 1m	Characteristic	Adjust character Correct LAeq 1m	Correction LAeq 1m	No of events 15 min	Duration of event correct 15min	adjusted source distance	minus Distance attenuation	Building shielding inside outside	Adj building shield	barrier correction or building	adjbarrier correction	Sleeping rooms 35 LAeq	Other rooms 45 LAeq			
R1 option 1																	
coolroom	72	0	72	-8	64	1	900	0	64	7.5	46	0	46	5	41	40	40
Total													41	40	40		
criteria													35	35	35		
>criteria													6	11	6		
comply													NO	NO	NO		

Summary: Noise from the compressor would exceed the criteria by 11 dB(A) therefore shielding would be required as indicated in diagram 8.1 below.

Diagram 8.1 Shielding option 1



Plan View Option 1



East elevation

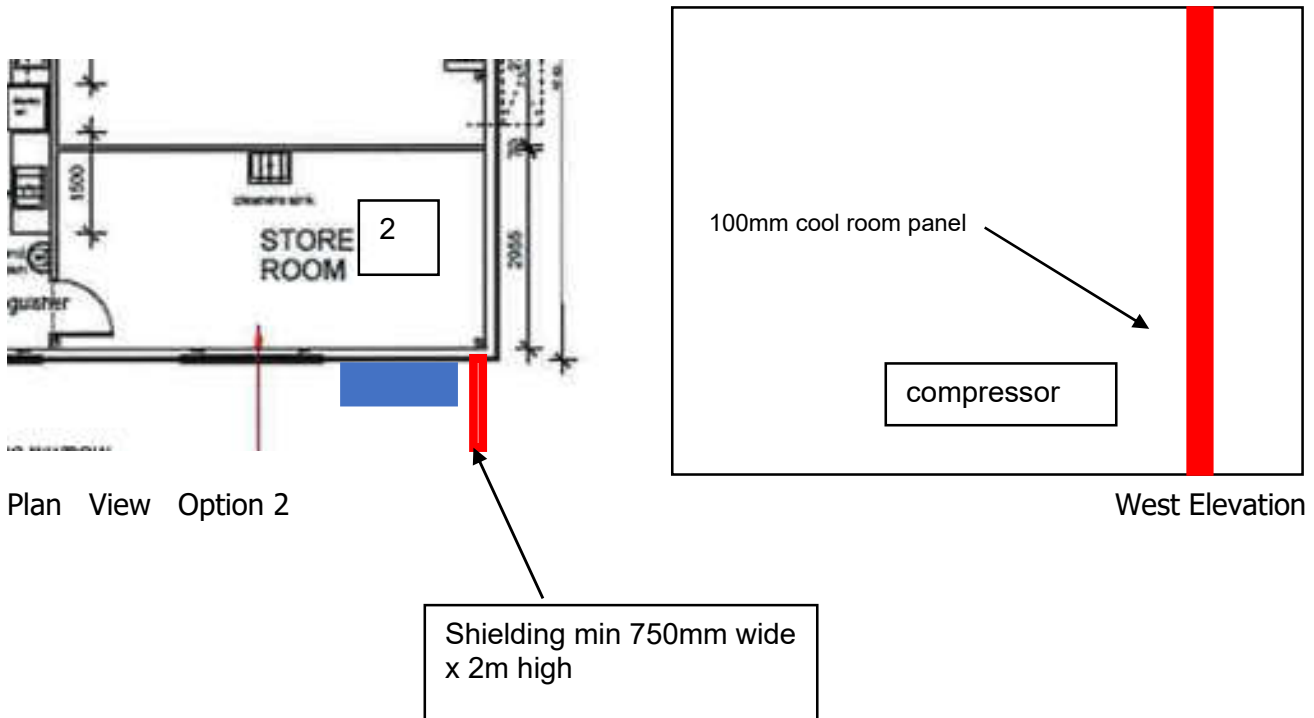
8.2 Option 2

Table 8.2 Option 2

Receiver	Source @ 1m	Characteristic	Adjust character Correct LAeq 1m	Correction LAeq 1m	No of events 15 min	Duration of event correct 15min	adjusted source distance	minus Distance attenuation	Building shielding inside outside	Adj building shield	barrier correction or building	adjbarrier correction	Sleeping rooms 35 LAeq	Other rooms 45 LAeq			
R1 option 2																	
coolroom	72	0	72	-8	64	1	900	0	64	10	44	0	44	5	39	33	33
Total															39	33	33
criteria															35	35	40
>criteria															4	0	-5
comply															NO	yes	yes

Summary: Noise from the compressor would exceed the criteria by 4 dB(A) therefore shielding would be required as indicated in diagram 8.2 below.

Diagram 8.2 Shielding option 2



9.0 Conclusions

Based on the proposed shielding for the new cold room motors and extended operating hours noise from the subject premises would not exceed the required criteria.

Compliance of kitchen exhaust fan subject to not being operated before 7.30 am in the morning and maintenance of constructed attenuator to be kept in good order.

9.1 External Criteria

Criteria: 35 LAeq ambient +5dB(A).

Predictions conducted indicates compliance for all external areas.

9.2 Sleeping rooms

Criteria: 35 LAeq for sleeping rooms 9 hour night criteria:

Predictions conducted indicates compliance for all bedrooms would be achieved.

9.3 Other habitable areas

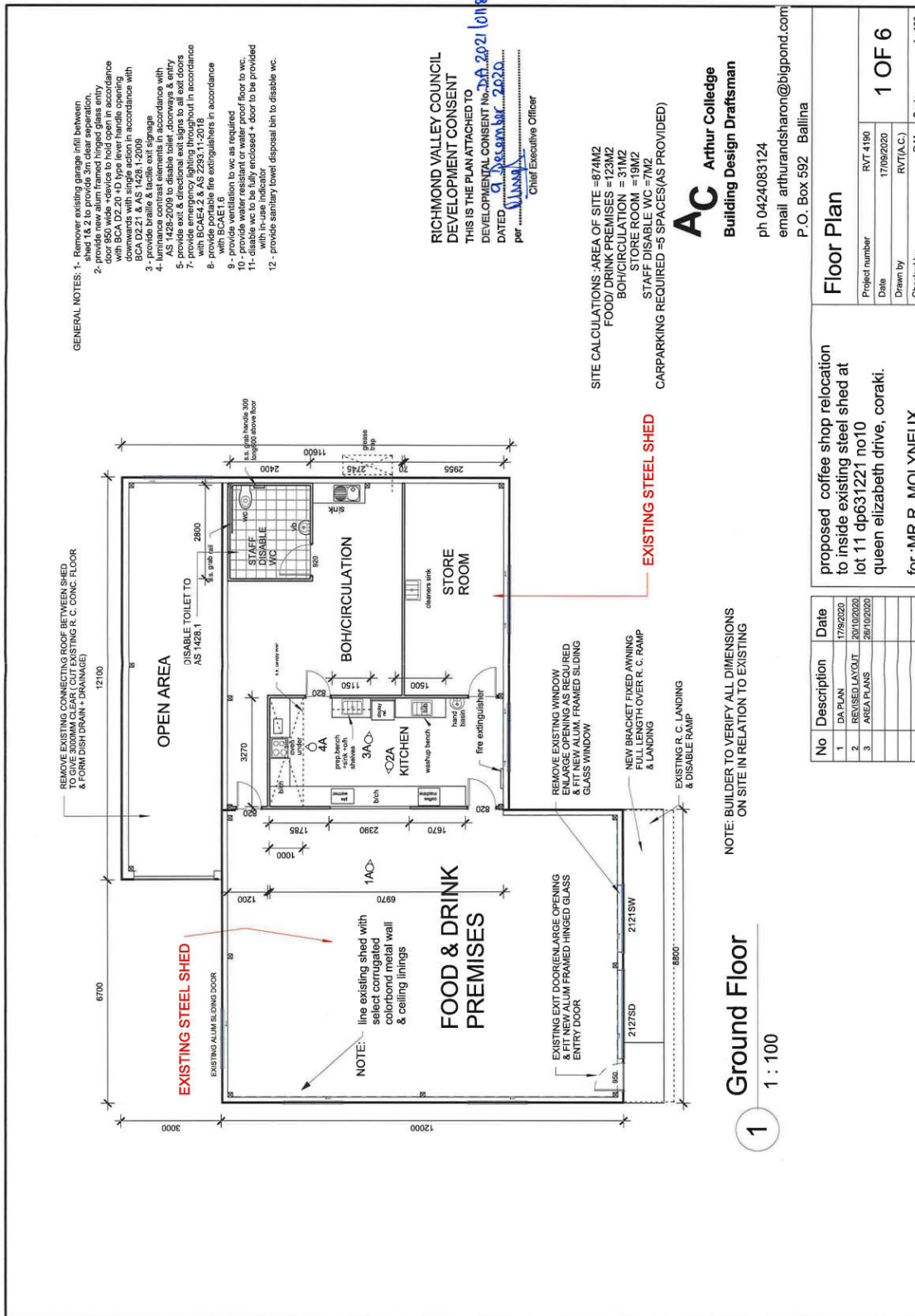
Criteria: 40LAeq other habitable rooms criteria:

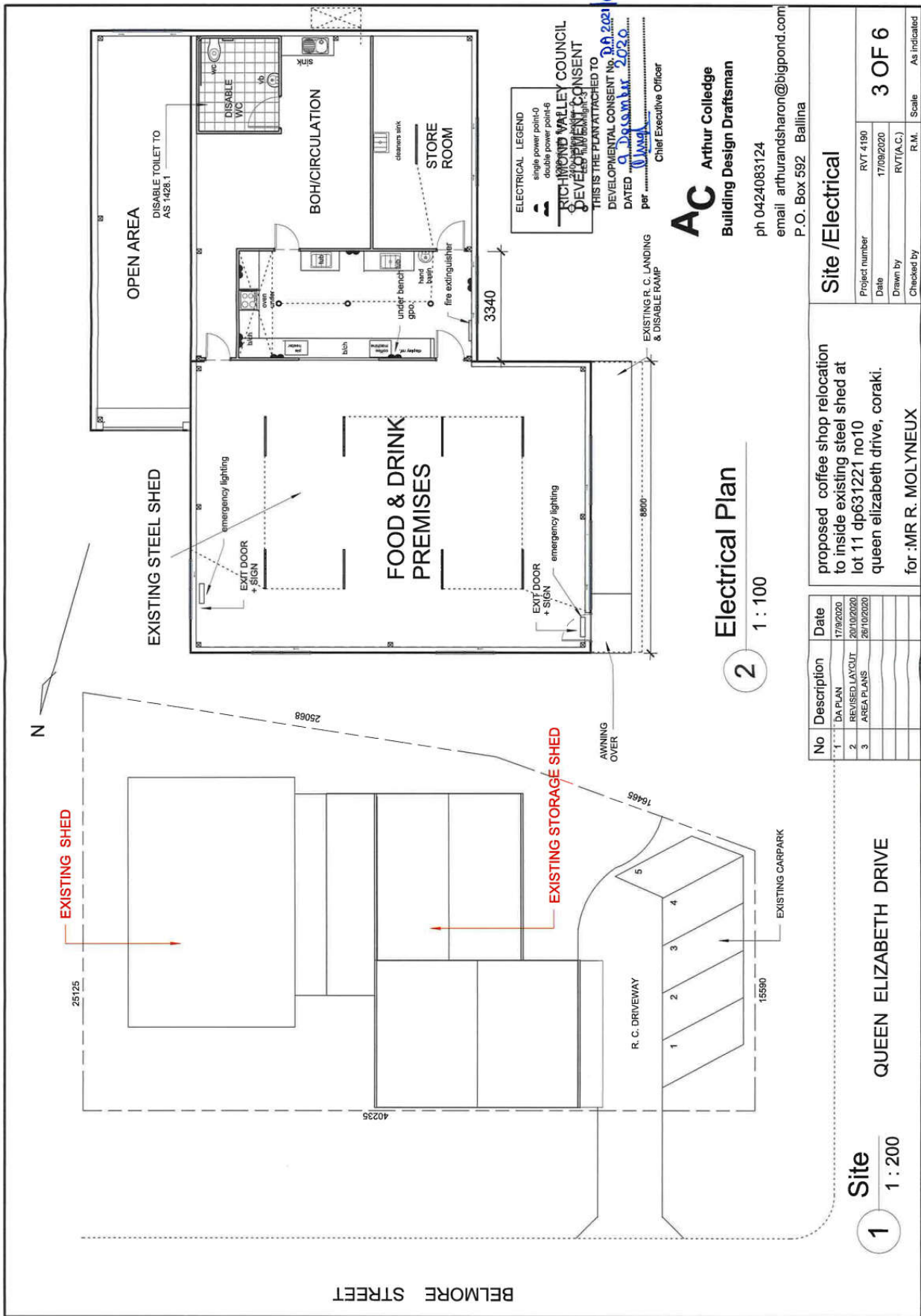
Predictions conducted indicates compliance for all other habitable rooms would be achieved.

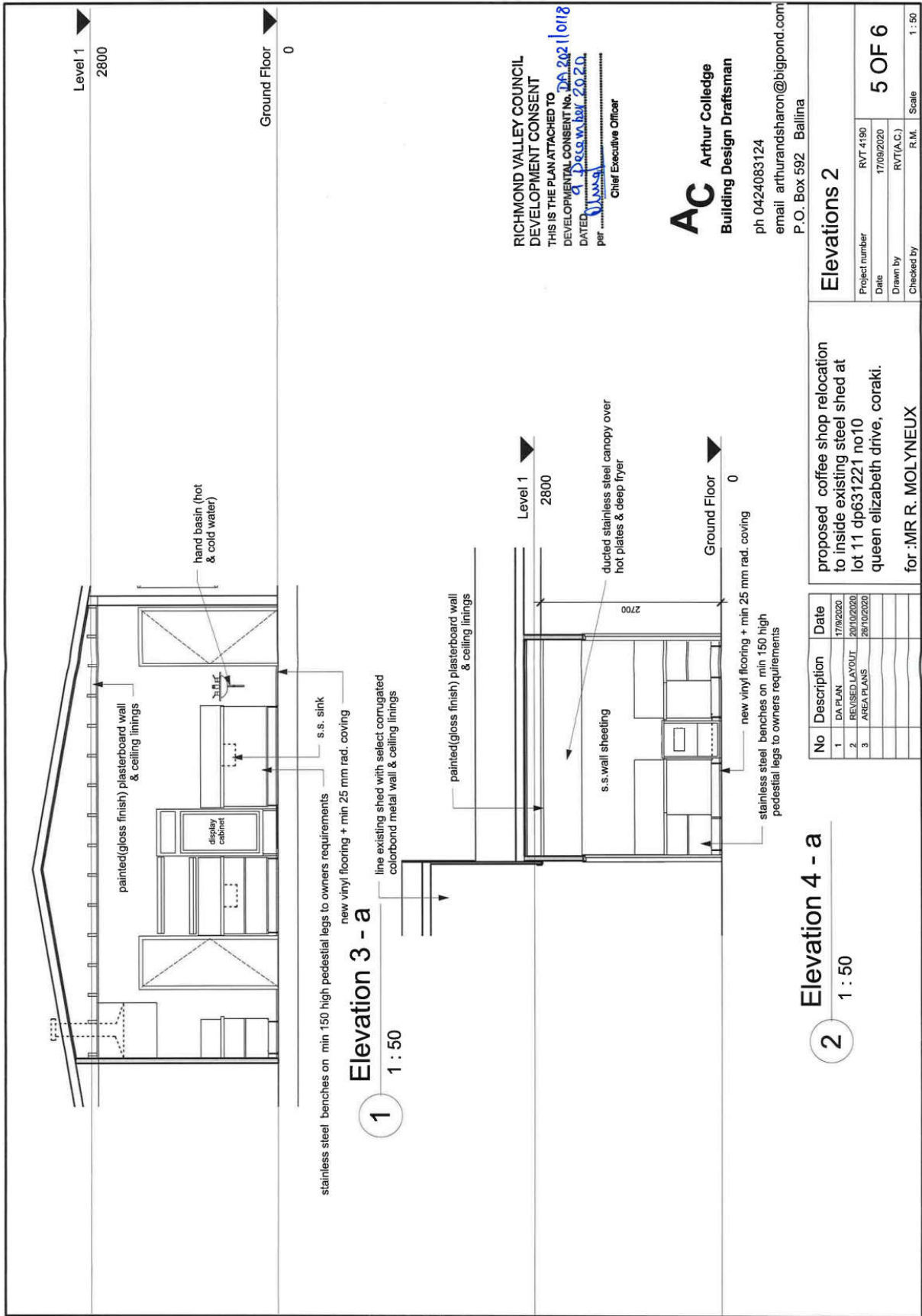
Regards

Craig Hill (Manager)

Attachment A: Plans







No	Description	Date
1	DA PLAN	17/02/2020
2	REVISED LAYOUT	20/10/2020
3	AREA PLANS	26/10/2020

proposed coffee shop relocation to inside existing steel shed at lot 11 dp631221 no 10 queen elizabeth drive, coraki.
for: MR R. MOLYNEUX

Elevations 2	
Project number	RVT 4190
Date	17/09/2020
Drawn by	RVT(A.C.)
Checked by	R.M.
Scale	1:50

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