Surf COAST SHIRE

Office Use Only Application No.: Date Lodged: / /

Application to **AMEND a Planning Permit**

Planning Enquiries
Web: www.surfcoast.vic.gov.au

If you need help to complete this form, read MORE INFORMATION at the end of this form.

▲ Any material submitted with this application, including plans and personal information, will be made available for public viewing, including electronically, and copies may be made for interested parties for the purpose of enabling consideration and review as part of a planning process under the *Planning and Environment Act 1987*. If you have any questions, please contact Council's planning department.

▲ This form cannot be used to:
- amend a permit or part of a permit if the Victorian Civil and Administrative Tribunal (VCAT) has directed under section 85 of the Act that the responsible authority must not amend that permit or that part of the permit (as the case requires); or
- amend a permit issued by the Minister under Division 6 of Part 4 of the Act (these applications must be made to the Minister under section 97I of the Act).

▲ **Questions marked with an asterisk (*) must be completed.**

i Click for further information.

SURF COAST SHIRE
FILE: .....
FOLIO: .....
14 JUN 2017
OFFICER: .....
FILE COPY ☐ DUPLICATE COPY ☐

The Land i

Address of the land. Complete the Street Address and one of the Formal Land Descriptions.

Street Address *

Unit No.: 1 & 2 | St. No.: 40 | St. Name: The Esplanade

Suburb/Locality: Torquay | Postcode: 3228

Formal Land Description *
Complete either A or B.

▲ This information can be found on the certificate of title.

Lot No.: ○ [illegible] ○ [illegible] ○ [illegible] No.:

Crown Allotment No.: Section No.:

Parish/Township Name:

If this application relates to more than one address, attach a separate sheet setting out any additional property details.

Planning Permit Details i

What permit is being amended?*

Planning Permit No.: 12/0317

The Amended Proposal i

▲ You must give full details of the amendment being applied for. Insufficient or unclear information will delay your application.

What is the amendment being applied for?*

- Indicate the type of changes proposed to the permit.
- List details of the proposed changes.

If the space provided is insufficient, attach a separate sheet.

☐ [illegible]
☐ [illegible]
☑ [illegible]
☐ [illegible]

Details:

The application is to remove the fans and last vertical section of the duct work, replacing with a low profile weather guard plate.
The current fans will be redundant as there are new in-line eco quiet FanTech fans being installed inside the commercial units.
This ensures that:
a) there are no active mechanical exhaust components on the roofs
b) there is no noise generated above the residences
c) the external ductwork over unit 4 is per existing stamped planning consent.
d) the external ductwork over unit 3 is as originally installed before any occupants entered or purchased part of the building.

■ Provide plans clearly identifying all proposed changes to the endorsed plans, together with: any information required by the planning scheme, requested by Council or outlined in a Council checklist; and if required, include a description of the likely effect of the proposal.

14 JUN 2017

Applicant and Owner Details

Provide details of the applicant and the owner of the land.

Applicant *

The person who wants the permit.

*Please provide at least one contact phone number **

Where the preferred contact person for the application is different from the applicant, provide the details of that person.

Owner *

The person or organisation who owns the land

Where the owner is different from the applicant, provide the details of that person or organisation.

Declaration

This form must be signed by the applicant*

Remember it is against the law to provide false or misleading information, which could result in a heavy fine and cancellation of the permit.

I declare that I am the applicant; that all the information in this application is true and correct; that the owner (if not myself) has been notified of the permit application.

Signature:

Date: 14-06-2017 day / month / year

Need help with the Application?

If you need help to complete this form, read More Information at the end of this form or contact Council's planning department. General information about the planning process is available at planning.vic.gov.au

Contact Council's planning department to discuss the specific requirements for this application and obtain a checklist. Insufficient or unclear information may delay your application.

Has there been a pre-application meeting with a council planning officer?

No Yes If 'Yes', with whom?:

Date: day / month / year

Development Cost

Estimate cost of development*

If the permit allows ***development***, estimate the cost difference between the development allowed by the permit and the development to be allowed by the amended permit.

$1,800,000	$NA	$NA

Existing Conditions

Describe how the land is used and developed now *

For example, vacant, three dwellings, medical centre with two practitioners, licensed restaurant with 80 seats, grazing.

Provide a plan of the existing conditions if the conditions have changed since the time of the original permit application. Photos are also helpful.

Title Information

Encumbrances on title *

Provide a full, current copy of the title for each individual parcel of land forming the subject site.
The title includes: the covering 'register search statement', the title diagram and the associated title documents, known as 'instruments', for example, restrictive covenants.

Contact: John Cicero
Direct Line: (03) 9691 0204
Direct Email: jCicero@besthooper.com.au
Principal: John Cicero
Our Ref: JDC:GR:170760
Your Ref: E16/0118

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BEST HOOPER PTY LTD
ABN 58 905 248 984

21 July 2017

Attn: Bill Cathcart/Ben Schmeid
Surf Coast Shire
PO Box 350
TORQUAY VIC 3228
[redacted]

Dear Sirs,

RFI Request – Application No: 12/0317G
40 The Esplanade, Torquay

We have been instructed to act on behalf of Raiz Pty Ltd and Alveena Pty Ltd; the Applicants and registered proprietors of the above property to whom your correspondence dated 5 July 2017 was addressed requesting further information.

With reference to that correspondence and to the 9 bullet points summized by you as being the subject of our clients application we have now **enclosed** herewith a **Request for Amendment to an Application for a Planning Permit** along with amended plans for your urgent attention. **Please note that the specific amendment details are contained in a schedule to this form adopting the dot points in your correspondence as headings for ease of cross-reference.**

We advise further that as part of our clients' efforts to resolve any acoustic issues they have commissioned at their own expense further acoustic testing by SLR Consulting of the current ducting systems including the car park exhaust and kitchen exhaust system (after the internal alterations). Permission was sought by our office to obtain access to carry out testing within habitable rooms of the units of the complainant residents however such access was not granted on reasonable terms, or indeed, with any haste. Accordingly these tests were carried out on 15 July 2017 from outside the habitable room windows and the recommendations are

found within the report of Graeme Campbell dated 20 July 2017 which is now also **attached** hereto for your reference.

You will note that the amended plans also seek amendment of the endorsed acoustic notes by reference to the updated acoustic report given the most recent test results. As a result of the report findings the Applicants have also decided to amend the application (amongst other measures) by relocating the two retail air-conditioner condenser units to the garage basement. It was recommended by the expert that this will further assist in noise reduction. It is noted in the report that the kitchen exhaust fans since the variations made to their internals were now compliant and 'inaudible' during all periods and that no night time readings were given as the fans will not run from 10pm onwards. We believe that this is consistent with the most recent Marshall Day report obtained by Council.

As you may be aware, a Notice to Comply was issued on 6 July 2017 to our clients and we are instructed that the amendments that are proposed to the premises will ensure that if there is any non-compliance currently (which is not admitted) it will be addressed as a result of the amendments proposed. Accordingly we seek your urgent assessment of our clients application as amended.

We await your response.

Yours faithfully
BEST HOOPER

John Cicero
Principal

Request for Amendment to an Application for a Planning Permit

Under Section 50 or 57A of the *Planning and Environment Act 1987*

Office Use Only			
Receipt Code	230	Receipt Number	
Date received			

Contact Details

Did you lodge the original Planning Permit application?* ☐ Yes ☑ No

First Name* Last Name*

Company Name (if applicable) BEST HOOPER LAWYERS

[redacted]

Address to Which the Application Applies

Choose the type of formal land description*

☐ Street Address ☐ Lot/Plan ☐ Crown Allotment ☐ Other LOT 1 LP 3798

Street Address 40 THE ESPLANADE

Suburb* TORQUAY Post Code* 3228

Amendment Details

Planning application number* 12/0317G

What amendments are to be made to the application?*

REFER TO SCHEDULE 1 ATTACHED

1 Merrijig Drive / P.O. Box 350, TORQUAY, VIC, 3228
Ph: 03 5261 0600 / 1300 610 600 / Fax: 5261 0525
Email: info@surfcoast.vic.gov.au

Surf COAST SHIRE

Amendment Details

Does the proposed amendment breach, in any way, a registered covenant, section 173 agreement or restriction on title?*	☐ Yes ☒ No ☐ Not applicable (no such covenant, section 173 agreement or restriction applies)
State the estimated cost of the proposed development, which includes the amendments*	☒ Unchanged from initial application ☐ Changed from initial application
Has notice of the application been given (advertised)?*	☐ Yes ☒ No

Supporting Documents

Plans/Letter
If providing attachment electronically, please supply as: docx;jpeg;xls;doc;rtf
Please supply all plans affected by the proposed changes. Please make sure that all changes are clearly highlighted on any new plans submitted, as failure to do so is likely to result in delays. Highlight the changes by using different colours, highlighter pens or bubbles around amendments etc.

Payment Details

☐ IN PERSON N/A	Please bring your completed registration to the Surf Coast Shire Offices. You will have the option to pay by cash, cheque or credit card at the counter.
☐ BY CREDIT CARD OVER THE PHONE	Please email or post the form to the office. Council will contact you within 5 working days to organise payment over the phone.

Fees:

- Amendment to application before notice is given (Section 50) – **No fee**

- Amendment to application after notice have been given (Section 57A) if the development cost is less than $10,000 – **No fee**

- Amendment to application after notice has been given (Section 57A) all other applications – **Please contact Council to determine the appropriate fee and methods of payment available.**

For full details of fee requirements refer to the *Planning and Environment (Fees) Interim Regulations 2011*

Declaration (Please select)

☐ **I am the owner OR**
☒ **I have notified the owner of the proposed amendment**

I understand and acknowledge that:

- The information provided in this request is true and complete to the best of my knowledge
- Surf Coast Shire Council may refuse this request if it becomes evident that any information or supporting documents provided are incomplete or false.

☑ By ticking this checkbox I confirm that I have understood all the statements above*

Name of person completing this request* JOHN CICERO **Date** 20/7/17

Privacy Statement: The Surf Coast Shire considers that the responsible handling of personal information is a key aspect of democratic governance, and is strongly committed to protecting an individual's right to privacy. Council will comply with the Information Privacy Principles as set out in the Information Privacy Act, 2000. The information will not be disclosed to any other party unless Council is required to do so by law.

SCHEDULE 1

SUMMARY OF AMENDMENTS - APPLICATION NUMBER 12/0317G

(Numbered in order of appearance in SCS RFI request dated 5 July 2017)

1. ***CENTRAL EXHAUST DUCT***
   - The central duct termination point is now only 10mm higher than that shown on the endorsed plans (510mm rather than 500mm).
   - The length of ductwork leading horizontally to the termination point is in line 510mm total height (with no riser) and therefore approval for an increased height of 260mm from the 250mm height shown on endorsed plans is sought.
   - The duct now terminates 1430mm from the western edge of the upper level parapet, therefore approval for a reduced length in ductwork to termination of approximately 2020mm is sought (previously 3450mm).

2. ***SOUTHERN DUCT RELOCATION***
   The southern duct was relocated from in-line with the party wall dividing apartment 1 (south) and apartment 2 (central) to be directly south of this party wall, therefore moved approximately 400mm south at ground level.

3. ***SOUTHERN DUCT ROOF SITING AND TERMINATION POINT***
   - The southern duct deviates further south on a 45 degree angle along the first floor roof of apartment 1 and terminates approximately 1450mm south of the party wall at the upper level roof. This is now accurately reflected on the revised drawings.
   - Further to the above notes, the southern duct now terminates 755mm from the western parapet at a height of 465mm above the apartment 1 parapet

4. ***DUCT COLOUR***
   The ductwork colour has now been nominated on all relevant drawings. The ductwork is to be finished in Dulux - Lime White, to match the wall colour adjacent. This is in line with suggestions of Ben Schmeid of SCS on 6/2/17 *'To reduce the visual impact of the ducts they should be finished to match the building (this could be the same as the wall colour)'*.

5. ***EXHAUST USE***
   The southern duct on endorsed plans was previously marked as carpark exhaust, this is now a kitchen exhaust.
   (This was in the original Amended Application also and is unchanged)

6. ***NORTH DUCT DELETION***
   The northern duct has been deleted.
   (This was in the original Amended Application also and is unchanged)

7. ***NEW CARPARK EXHAUST DUCT***
   - The new carpark exhaust duct extends up the eastern wall of the carpark/basement external stair structure and terminates above the roof approximately 2.9m above finished ground level.
     (This was in the original Amended Application also and is unchanged).
     Note: Acoustic testing has been performed on this exhaust duct and compliant results

are contained in acoustic report of Graeme Campbell of SLR Consulting dated 20 July 2017.

- The acoustic notes previously marked on architectural drawings have been revised to refer to the recent SLR site investigation report. In particular the notation that *"External plant or duct terminations should be at least 5m away from habitable room windows or not be in direct line of sight of them"* has been addressed in the report as no longer being a recommendation/requirement for this duct given its acoustic results.

8. ***REMOVAL OF BOLLARD & AC INSTALLATION:***
   - As a result the findings and recommendations of the acoustic report of Graeme Campbell of SLR Consulting dated 20 July 2017, the 2 x retail A/C condenser units located at the rear of the tenancy and under the southern apartment are to be relocated to the basement with the other 2 x retail condenser units. It was a recommendation, not a requirement of the acoustic report but will result in further noise level reduction. **This is now indicated on the amended drawings. The relocated A/C units must also be wall mounted above bonnet height (min. 1.5m clear)**
   - Further to the above point, **the bollards at the end of carspace 07 have been removed from plans and not installed as the A/C units are wall mounted above bonnet height to retain the full parking space depth.**
     (This was as mentioned in previous correspondence)

9. ***REDESIGNATION OF AREA PREVIOUSLY MARKED K.P. TO DISH WASH***
   The restaurant room formally marked as K.P. Has been redesigned as 'DISH WASH'
   (This was as mentioned in previous correspondence)

20 July 2017

640.10563-L03-v1.1 Noise measurements 20170720.docx

[redacted]

Attention:

Dear

40 The Esplanade, Torquay
Noise Measurement of Mechanical Plant

1 Introduction

SLR Consulting Australia Pty. Ltd. (SLR) were retained to measure and assess the level of mechanical plant noise to apartments at 40 The Esplanade, Torquay. Previous measurements have been carried out but subsequently the kitchen exhaust fans have been replaced and re-located.

2 Measurement Procedure

Noise measurements were carried out on the evening of Saturday 15 July 2017 between 1900h and 1945h. The aim of the measurements was to measure the noise from the carpark exhaust fan outside the first floor apartment windows.

We were not able to access inside the apartments to carry out noise measurements, and so we measured outside the windows of the first floor apartments.

The day of our measurements was calm and dry and there was not a significant level of traffic noise audible at the rear of the property. We have used the Noise from Industry in Regional Victoria (NIRV) guideline recommended maximum noise levels (RMNL) as proposed by MDA that do not include any influence from background noise. These are as follows:

Table 1 NIRV RMNLs

Period	RMNL, dBA
Day weekday (0700h-1800h)	56
Saturday (1300h-1800h)	49
Sunday (0700h-1800h)	49
Evening (1800h-2200h)	49
Night (2200h-0700h)	44

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+61 3 9249 9400 +61 3 9249 9499
E: melbourne@slrconsulting.com www.slrconsulting.com
ABN 29 001 584 612

Noise measurements were carried out using a Rion NA28 sound level meter serial number 30642027 and it was checked for correct calibration using a Bruel & Kjaer calibrator type 4231, serial number 3007429.

Several items of mechanical plant were switched on and off to assess the contribution from each item and their combination.

The carpark exhaust fan operates when a sensor in the carpark is triggered which fortunately occurred when an apartment occupant left the property. The kitchen exhaust fans and restaurant air-conditioning were able to be switched on and off.

3 Measurement results

Measurements were carried out with the kitchen exhaust fans on and off, the restaurant condenser fans on and off, and the carpark exhaust fan on and off.

The measurement results are shown below in **Table 2**.

Table 2 Mechanical plant noise measurements

Condition/Position	Measured Noise Level, dBA, Leq	SEPP N-1 reflection adjustment	Effective Noise Level, dBA	NIRV Compliance Day/Evening/Night 56/49/44
Carpark OFF, Aircond OFF, Kitchen OFF				
Unit 3, Bed 2	50*	-2	48	
Unit 4, Bed 2	50*	-2	48	
Unit 5, Bed 2	-			
Carpark ON, Aircond OFF, Kitchen OFF				
Unit 3, Bed 2	51	-2	49	YES/YES/Likely
Unit 4, Bed 2	51	-2	49	YES/YES/Likely
Unit 5, Bed 2	49	-2	47	YES/YES/Likely
Carpark ON, Aircond ON, Kitchen ON				
Unit 3, Bed 2	56	-2	54	YES/NO/NO
Unit 4, Bed 2	55	-2	53	YES/NO/NO
Unit 5, Bed 2	50	-2	48	YES/YES/?
Carpark OFF, Aircond ON, Kitchen ON				
Unit 3, Bed 2	56	-2	54	YES/NO/NO
Unit 4, Bed 2	56	-2	54	YES/NO/NO
Unit 5, Bed 2	50	-2	48	YES/YES/?
Carpark OFF, Aircond OFF, Kitchen ON				
Unit 3, Bed 2	51	-2	49	YES/YES/?
Unit 4, Bed 2	51	-2	49	YES/YES/?
Unit 5, Bed 2	49	-2	47	YES/YES/?

*Noise likely due to refrigeration plant on roof of nearby commercial property, Farm Foods in Gilbert Street

The background noise with all plant off was 48 dBA outside the apartments and was likely due to mechanical plant on the nearby commercial roof to the west of the site. This noise source was previously identified during our measurements in February 2017, and would be contributing to the measured noise from the individual operation of the carpark and kitchen exhaust fans.

It can be seen from the results above that compliance is achieved for operation of the carpark and the kitchen exhaust fans during day, evening and likely night periods. The kitchen exhaust fans were not audible.

The carpark exhaust fan was only just audible at ground level at the rear of the property. The carpark exhaust fan is also unlikely to operate continuously for 30 minutes at night, in which case a further adjustment could be applied to reduce the effective noise level.

The carpark exhaust fan noise complies with the noise criteria and so the requirement for the duct to be at least 5m away and out of line-of-sight to an apartment window is not required.

The air-conditioning condenser fans were compliant during the day period but over during the evening and the night period. It should be noted that the restaurant air-conditioning system was initially operating without the external condenser fans running, and it was only when the temperature on the thermostat was increased significantly that the fans came on. It was the condenser fans running that were the only audible noise present.

If the restaurant air-conditioning condensers were relocated to the basement carpark then they would comply during the evening and night period.

Yours faithfully,
SLR Consulting Australia Pty. Ltd.

Graeme R. Campbell
Principal – Acoustics, Noise and Vibration

www.slrconsulting.com

SITE STATISTICS

SITE AREA:	626.11sqm
TOTAL BASEMENT AREA:	406.25sqm
TOTAL GF AREA:	354.27sqm
	(56.58%)
CAFE BAR AREA):	**34.8sqm**
RESTAURANT AREA:	**107.7sqm**
SANITARY FACILITY AREA:	**27.1sqm**
KITCHEN AREA:	**32.6sqm**
BIN AREA:	**6.9sqm**
STUDIO APARTMENT:	50.13sqm
TOTAL FF AREA:	392.63sqm
APARTMENT 01:	113.76sqm
AP. 1 BALCONY:	19.30sqm
APARTMENT 02:	107.69sqm
AP. 2 BALCONY:	17.43sqm
APARTMENT 03:	113.31sqm
AP. 3 BALCONY:	21.14sqm
STUDIO APARTMENT:	36.33sqm
TOTAL SF AREA:	247.64sqm
APARTMENT 01:	52.79sqm
AP. 1 BALCONY:	22.08sqm
APARTMENT 02:	69.01sqm
AP. 2 BALCONY:	27.42sqm
APARTMENT 03:	54.14sqm
AP. 3 BALCONY:	22.20sqm
TOTAL SITE COVERAGE:	460.80sqm
	(73.60%
TOTAL PERMEABLE AREA:	105.03sqm
	(16.75%)

ACOUSTIC NOTES:

REFER TO **SLR ACOUSTIC CONSULTING** - 640.10563-L03-v1.0 Noise measurements REPORT CONDUCTED: 15 JULY 2017 FOR NOISE MEASUREMENT PROCEDURES AND RESULTS

adapt ARCHITECTURE pty ltd

P.O. BOX 716
NEWLANDS VIC 3058
m: 0419 625 370
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a.r.b.v. No. 51409
a.c.n.: 164 575 633
a.b.n.: 98 164 575 633

CLIENT:
RAIZ & ALVEENA PTY LTD AND WHYTES

PROJECT TITLE:
PROPOSED RETAIL & RESIDENTIAL DEVELOPMENT

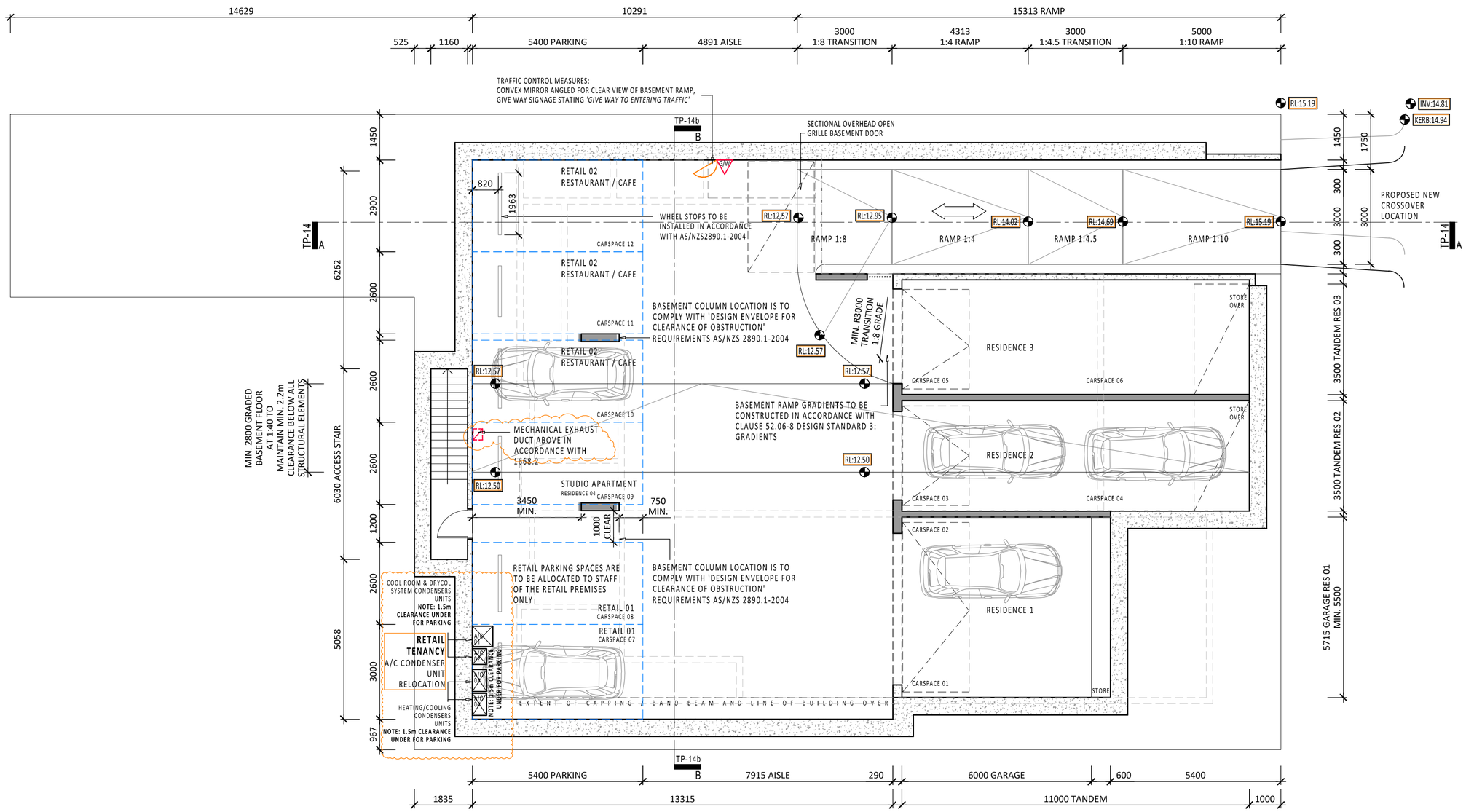
AT:
40 THE ESPLANADE
TORQUAY 3228

DRAWING TITLE:
TOWN PLANNING
SECTION 72 AMENDMENT

SITE PLAN

DATE:	REVISION:	No.	BY:
13.03.13	RETAIL AREAS REVISED. RLs NOTED.		
	ACOUSTIC REQUIREMENTS NOTED	A	NC
18.01.17	SECTION 57A	C	NC
27.04.17	SECTION 72. FAN REMOVED FROM ROOF	D	NC
18.07.17	SOUTHERN DUCT POSITION CORRECTED		
	FOLLOWING SITE INVESTIGATION, A/C		
	UNITS RELOCATED, DUCT COLOUR		
	SPECIFIED, ACOUSTIC NOTES UPDATED	E	NC

ISSUE DATE:	DRAWING REF.	DESIGNED:	DRAWING No.
18.07.17	SK13.1_REV E	NC	TP-06
SCALE:	JOB REF.	DRAWN:	REVISION:
1:100 @ A2	1624TORQU	NC	E



ACOUSTIC NOTES:

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PROJECT TITLE:
PROPOSED RETAIL & RESIDENTIAL DEVELOPMENT

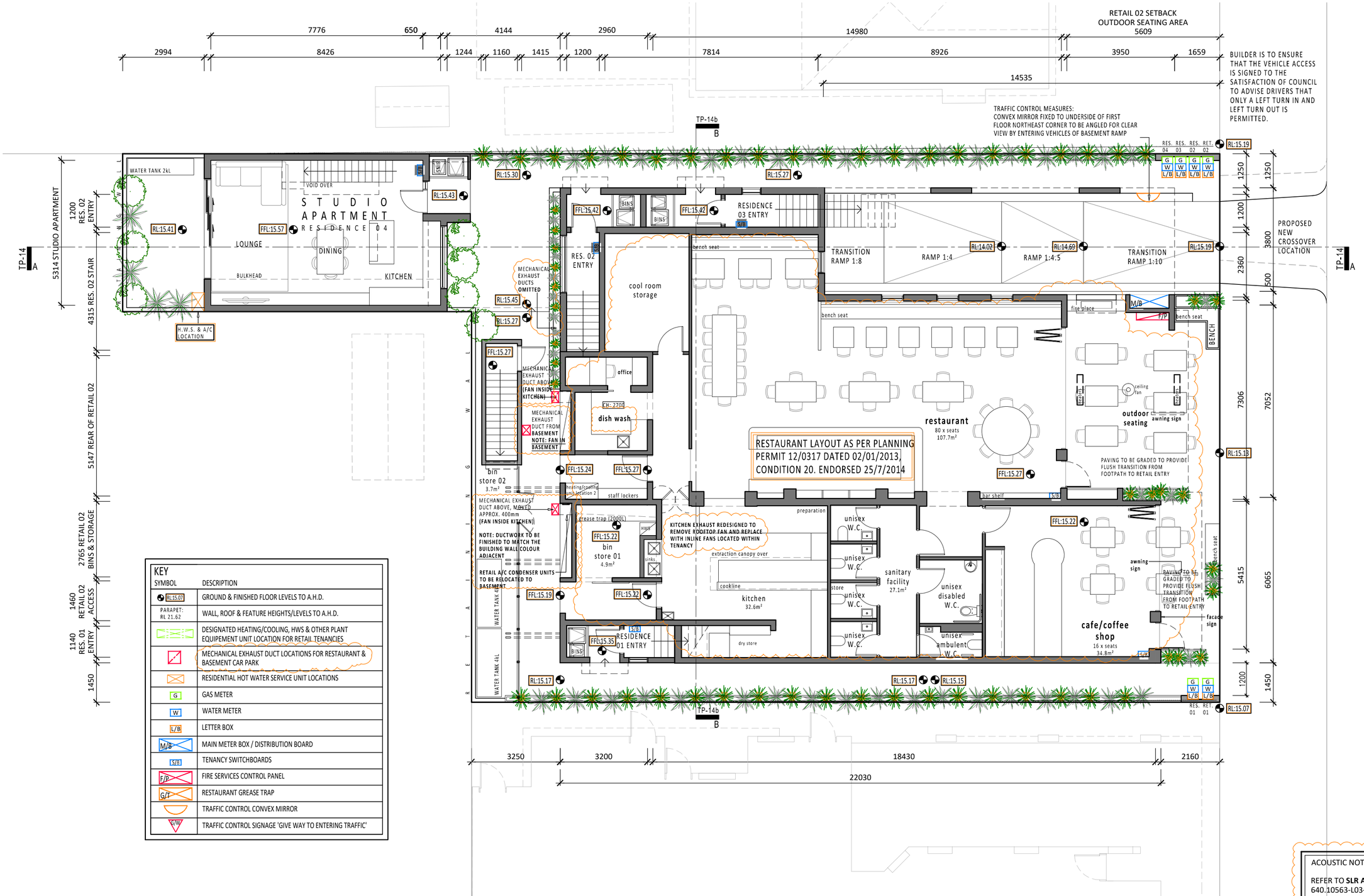
AT:
40 THE ESPLANADE TORQUAY 3228

DRAWING TITLE:
TOWN PLANNING
SECTION 72 AMENDMENT

BASEMENT FLOOR PLAN

DATE:	REVISION:	No.	BY:
13.03.13	LEVELS TO AHD, RAMP TO SUIT 52.06-08, BASEMENT WIDENED, MECH. EXHAUST, TRAFFIC & ACOUSTIC NOTED	A	NC
22.07.13	BASEMENT FLOOR GRADED	B	NC
18.01.17	SECTION 57A	C	NC
27.04.17	SECTION 72. FAN REMOVED FROM ROOF	D	NC
18.07.17	A/C UNITS RELOCATED + ACOUSTIC NOTES UPDATED	E	NC

ISSUE DATE: 18.07.17
DRAWING REF.: SK13.1_REV E
DESIGNED: NC
DRAWING No.: TP-08
SCALE: 1:100 @ A2
JOB REF.: 1624TORQU
DRAWN: NC
REVISION: E



KEY	
SYMBOL	DESCRIPTION
RL:15.07	GROUND & FINISHED FLOOR LEVELS TO A.H.D.
PARAPET: RL 21.62	WALL, ROOF & FEATURE HEIGHTS/LEVELS TO A.H.D.
	DESIGNATED HEATING/COOLING, HWS & OTHER PLANT EQUIPEMENT UNIT LOCATION FOR RETAIL TENANCIES
	MECHANICAL EXHAUST DUCT LOCATIONS FOR RESTAURANT & BASEMENT CAR PARK
	RESIDENTIAL HOT WATER SERVICE UNIT LOCATIONS
G	GAS METER
W	WATER METER
L/B	LETTER BOX
M/B	MAIN METER BOX / DISTRIBUTION BOARD
S/B	TENANCY SWITCHBOARDS
F/P	FIRE SERVICES CONTROL PANEL
G/T	RESTAURANT GREASE TRAP
	TRAFFIC CONTROL CONVEX MIRROR
GIVE WAY	TRAFFIC CONTROL SIGNAGE 'GIVE WAY TO ENTERING TRAFFIC'

ACOUSTIC NOTES:

REFER TO **SLR ACOUSTIC CONSULTING** - 640.10563-L03-v1.0 Noise measurements REPORT CONDUCTED: 15 JULY 2017 FOR NOISE MEASUREMENT PROCEDURES AND RESULTS

adapt ARCHITECTURE pty ltd

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AT:
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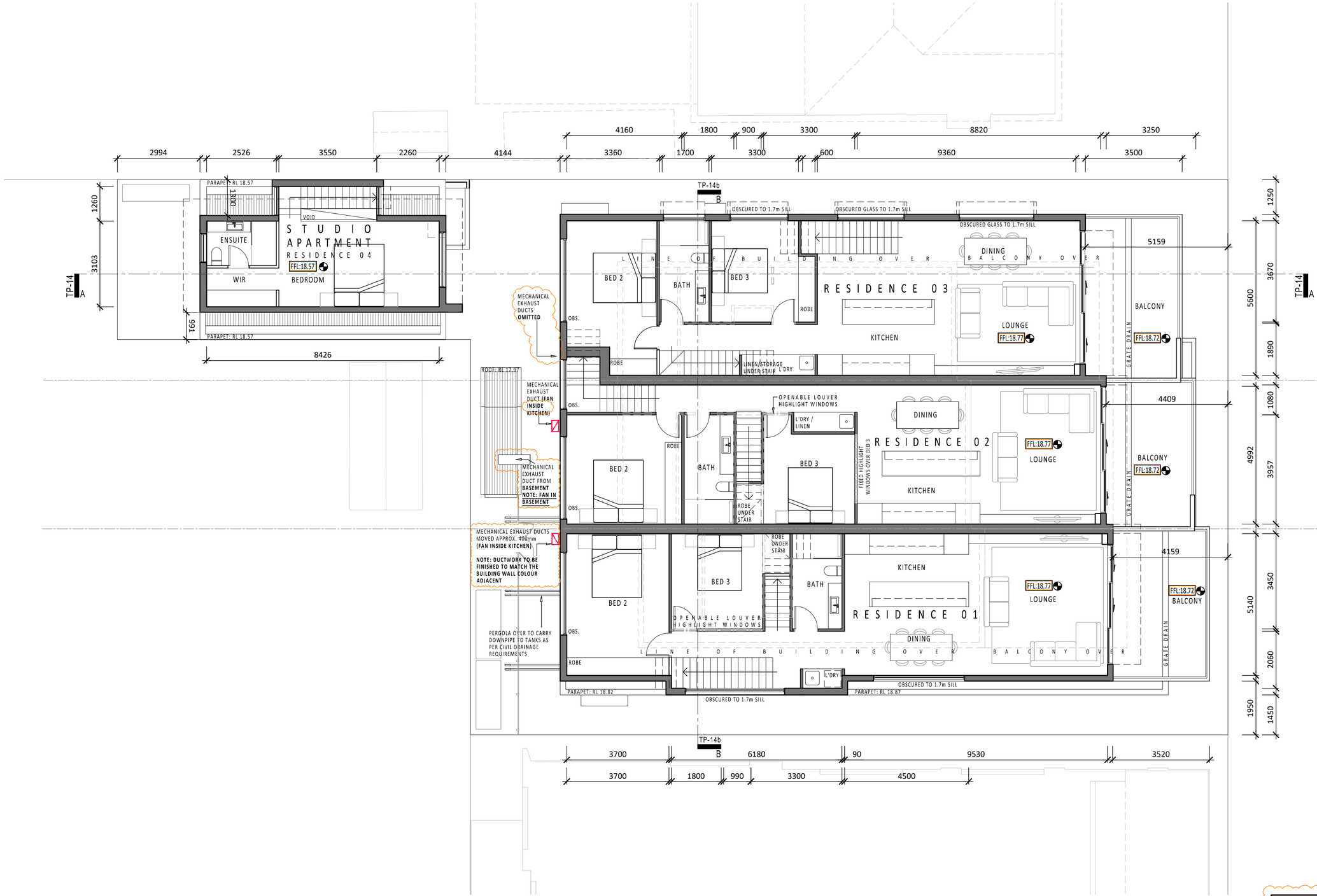
TORQUAY 3228

DRAWING TITLE:
TOWN PLANNING
SECTION 72 AMENDMENT

GROUND FLOOR PLAN

DATE:	NOTES:	No.	BY:
13.03.13	RETAIL AREAS REVISED. RLs NOTED.		
	ACOUSTIC REQUIREMENTS NOTED	A	NC
22.07.13	RET. 01 FLOOR LEVELS LOWERED	B	NC
18.01.17	SECTION 57A	C	NC
27.04.17	SECTION 72. FAN REMOVED FROM ROOF	D	NC
18.07.17	SOUTHERN DUCT POSITION		
	CORRECTED, A/C UNITS RELOCATED, DUCT COLOUR SPECIFIED, ACOUSTIC NOTES UPDATED	E	NC

ISSUE DATE:	DRAWING REF.	DESIGNED:	DRAWING No.
18.07.17	SK13.1_REV E	NC	TP-08
SCALE:	JOB REF.	DRAWN:	REVISION:
1:100 @ A2	1624TORQU	NC	E



ACOUSTIC NOTES:

REFER TO **SLR ACOUSTIC CONSULTING** - 640.10563-L03-v1.0 Noise measurements REPORT CONDUCTED: 15 JULY 2017 FOR NOISE MEASUREMENT PROCEDURES AND RESULTS

adapt ARCHITECTURE pty ltd

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CLIENT:
RAIZ & ALVEENA PTY LTD AND WHYTES

PROJECT TITLE:
PROPOSED RETAIL & RESIDENTIAL DEVELOPMENT

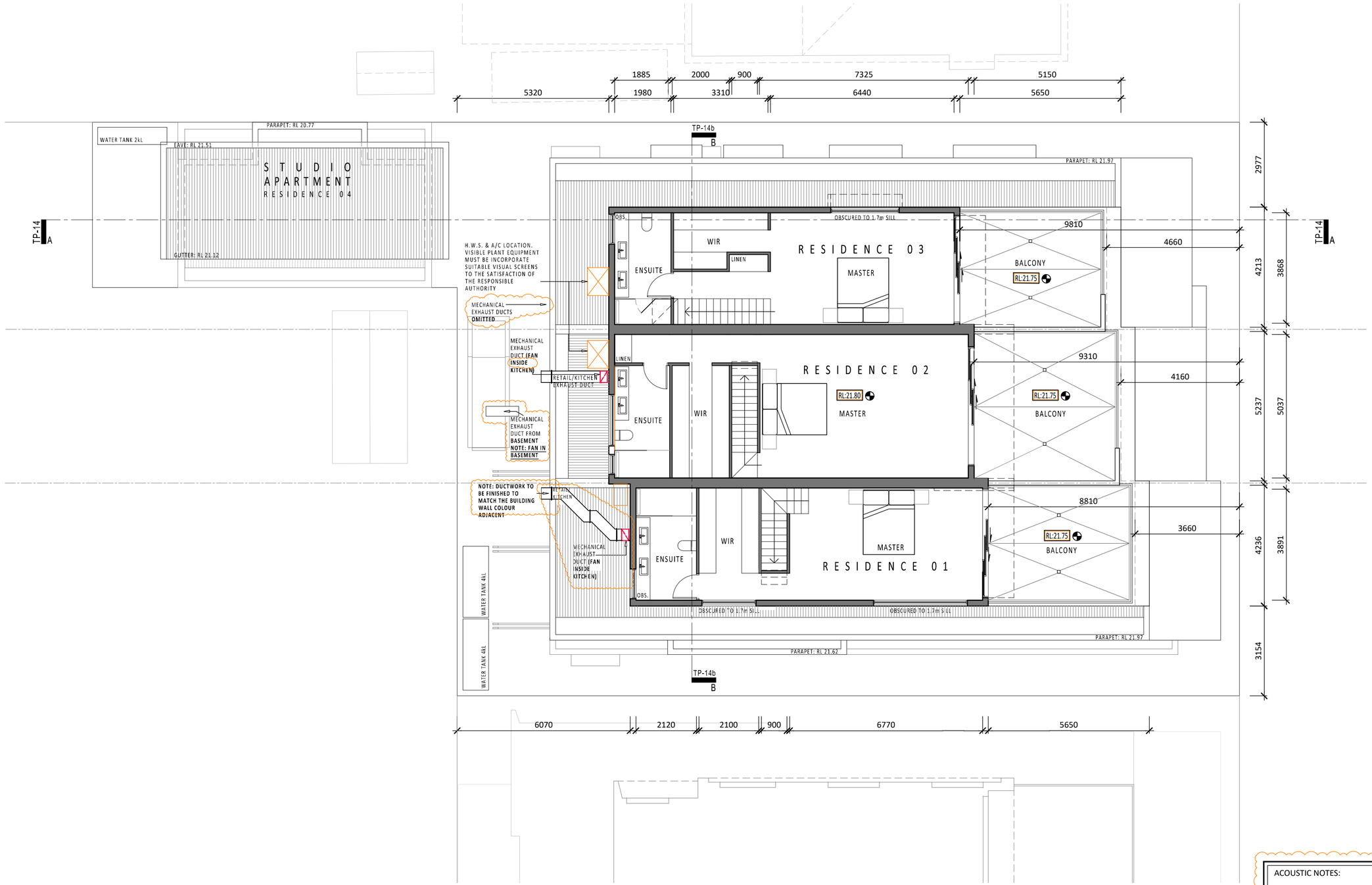
AT:
40 THE ESPLANADE TORQUAY 3228

DRAWING TITLE:
TOWN PLANNING
SECTION 72 AMENDMENT

FIRST FLOOR PLAN

DATE:	REVISION:	No.	BY:
13.03.13	MECHANICAL EXHAUST LOCATION		
	INDICATED. ACOUSTIC REQ'S NOTED	A	NC
18.01.17	SECTION 57A	C	NC
27.04.17	SECTION 72. FAN REMOVED FROM ROOF	D	NC
18.07.17	SOUTHERN DUCT POSITION CORRECTED		
	FOLLOWING SITE INVESTIGATION, DUCT		
	COLOUR SPECIFIED, ACOUSTIC NOTES		
	UPDATED	E	NC

ISSUE DATE:	DRAWING REF.	DESIGNED:	DRAWING No.
18.07.17	SK13.1_REV E	NC	TP-09
SCALE:	JOB REF.	DRAWN:	REVISION:
1:100 @ A2	1624TORQU	NC	E



ACOUSTIC NOTES:

REFER TO **SLR ACOUSTIC CONSULTING** - 640.10563-L03-v1.0 Noise measurements REPORT CONDUCTED: 15 JULY 2017 FOR NOISE MEASUREMENT PROCEDURES AND RESULTS

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PROJECT TITLE:
PROPOSED RETAIL & RESIDENTIAL DEVELOPMENT

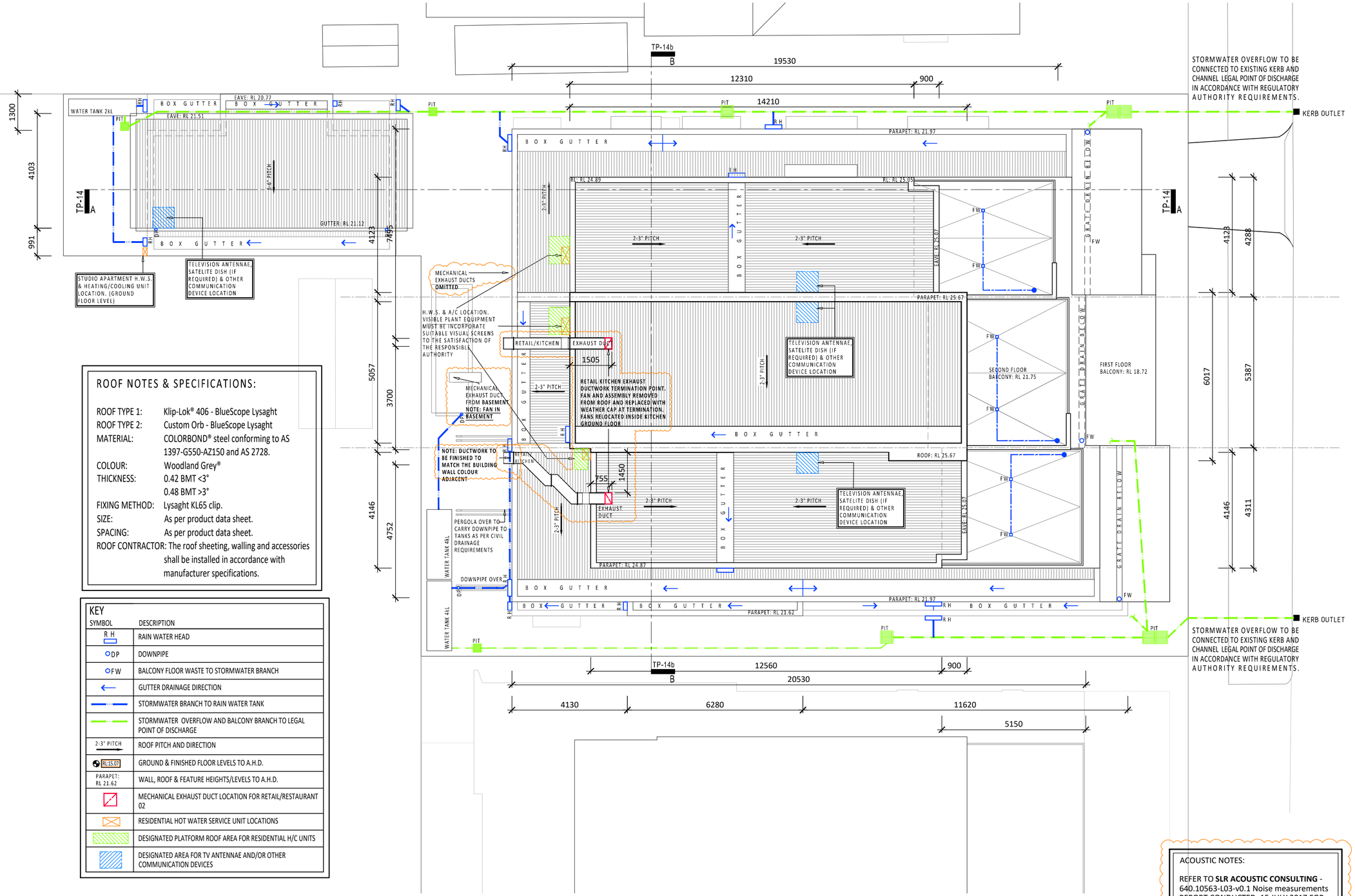
AT:
40 THE ESPLANADE
TORQUAY 3228

DRAWING TITLE:
TOWN PLANNING
SECTION 72 AMENDMENT

SECOND FLOOR PLAN

DATE:	REVISION:	No.	BY:
13.03.13	RETAIL AREAS REVISED. RLs NOTED.		
	ACOUSTIC REQUIREMENTS NOTED	A	NC
18.01.17	SECTION 57A	C	NC
27.04.17	SECTION 72. FAN REMOVED FROM ROOF	D	NC
18.07.17	SOUTHERN DUCT POSITION CORRECTED		
	FOLLOWING SITE INVESTIGATION, A/C		
	UNITS RELOCATED, DUCT COLOUR		
	SPECIFIED, ACOUSTIC NOTES UPDATED	E	NC

ISSUE DATE:	DRAWING REF.	DESIGNED:	DRAWING No.
18.07.17	SK13.1_REV E	NC	TP-10
SCALE:	**JOB REF.**	**DRAWN:**	**REVISION:**
1:100 @ A2	1624TORQU	NC	E



ROOF NOTES & SPECIFICATIONS:

ROOF TYPE 1:	Klip-Lok® 406 - BlueScope Lysaght
ROOF TYPE 2:	Custom Orb - BlueScope Lysaght
MATERIAL:	COLORBOND® steel conforming to AS 1397-G550-AZ150 and AS 2728.
COLOUR:	Woodland Grey®
THICKNESS:	0.42 BMT <3° 0.48 BMT >3°
FIXING METHOD:	Lysaght KL65 clip.
SIZE:	As per product data sheet.
SPACING:	As per product data sheet.
ROOF CONTRACTOR:	The roof sheeting, walling and accessories shall be installed in accordance with manufacturer specifications.

KEY

SYMBOL	DESCRIPTION
RH	RAIN WATER HEAD
DP	DOWNPIPE
FW	BALCONY FLOOR WASTE TO STORMWATER BRANCH
←	GUTTER DRAINAGE DIRECTION
	STORMWATER BRANCH TO RAIN WATER TANK
	STORMWATER OVERFLOW AND BALCONY BRANCH TO LEGAL POINT OF DISCHARGE
2-3° PITCH	ROOF PITCH AND DIRECTION
RL:15.07	GROUND & FINISHED FLOOR LEVELS TO A.H.D.
PARAPET: RL 21.62	WALL, ROOF & FEATURE HEIGHTS/LEVELS TO A.H.D.
	MECHANICAL EXHAUST DUCT LOCATION FOR RETAIL/RESTAURANT 02
	RESIDENTIAL HOT WATER SERVICE UNIT LOCATIONS
	DESIGNATED PLATFORM ROOF AREA FOR RESIDENTIAL H/C UNITS
	DESIGNATED AREA FOR TV ANTENNAE AND/OR OTHER COMMUNICATION DEVICES

ACOUSTIC NOTES:

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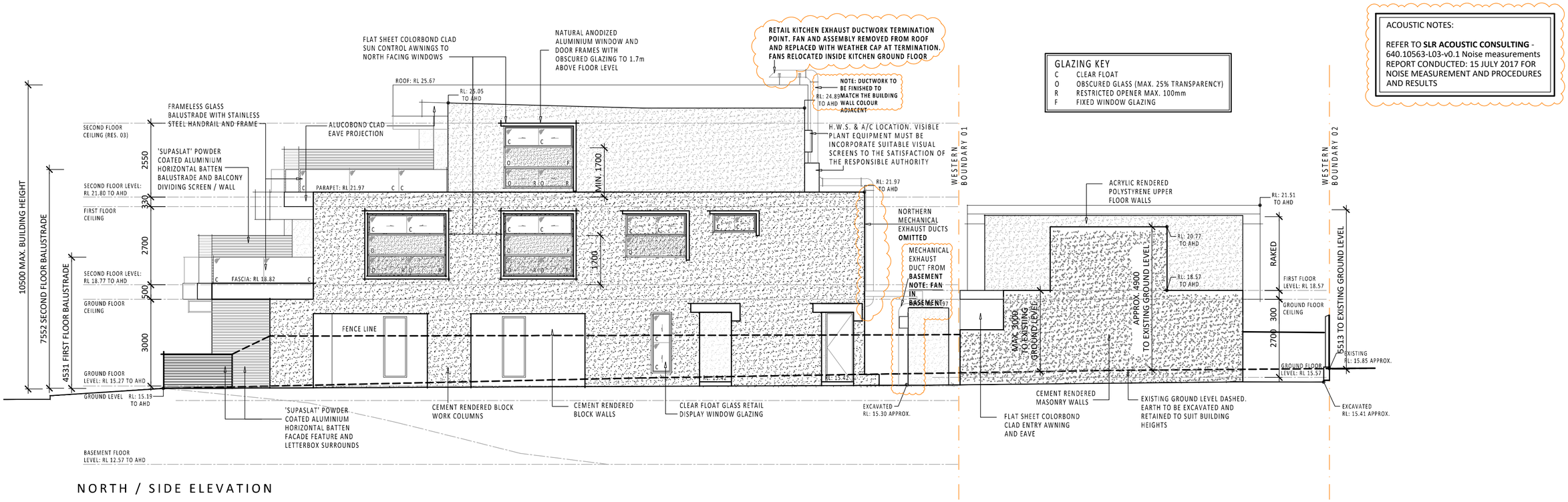
AT: 40 THE ESPLANADE TORQUAY 3228

DRAWING TITLE: TOWN PLANNING SECTION 72 AMENDMENT

ROOF PLAN

DATE:	REVISION:	No.	BY:
13.03.13	RETAIL AREAS REVISED. RLs NOTED.		
	ACOUSTIC REQUIREMENTS NOTED	A	NC
18.01.17	SECTION 57A	C	NC
27.04.17	SECTION 72. FAN REMOVED FROM ROOF	D	NC
18.07.17	SOUTHERN DUCT POSITION CORRECTED		
	FOLLOWING SITE INVESTIGATION, A/C		
	UNITS RELOCATED, DUCT COLOUR		
	SPECIFIED, ACOUSTIC NOTES UPDATED	E	NC

ISSUE DATE:	DRAWING REF.	DESIGNED:	DRAWING No.
18.07.17	SK13.1_REV E	NC	TP-11
SCALE: 1:100 @ A2	JOB REF. 1624TORQU	DRAWN: NC	REVISION: E



NORTH / SIDE ELEVATION

ACOUSTIC NOTES:

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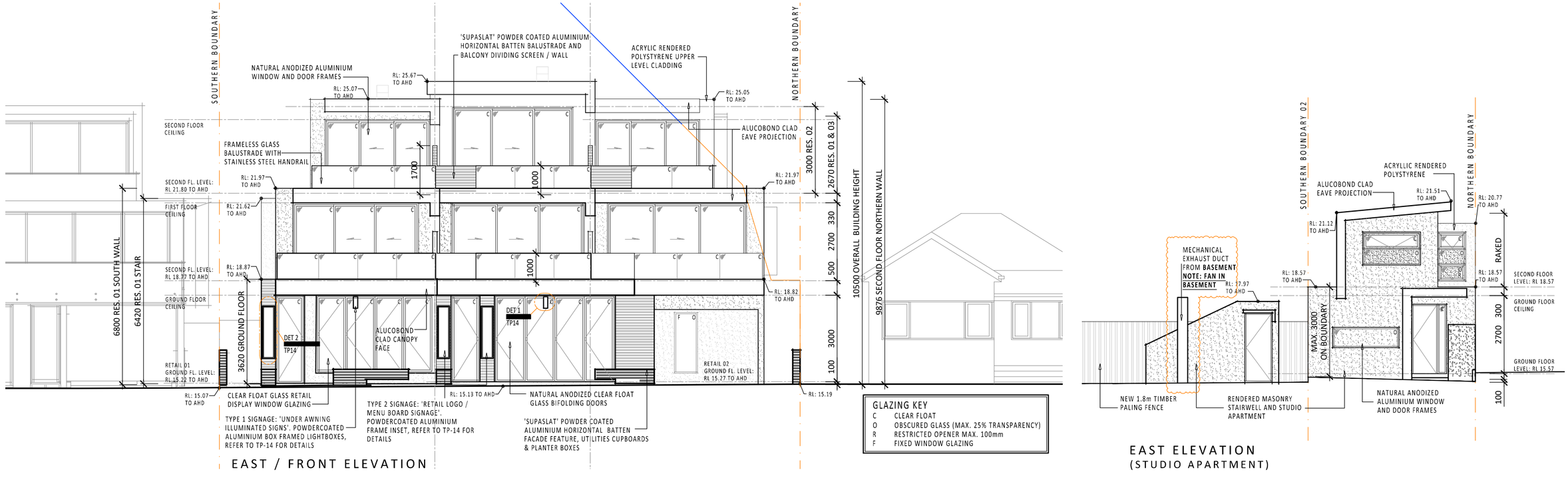

EAST / FRONT ELEVATION

EAST ELEVATION
(STUDIO APARTMENT)

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CLIENT:
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PROJECT TITLE:
PROPOSED RETAIL & RESIDENTIAL DEVELOPMENT

AT:
40 THE ESPLANADE
TORQUAY 3228

DRAWING TITLE:
TOWN PLANNING
SECTION 72 AMENDMENT

ELEVATIONS 01

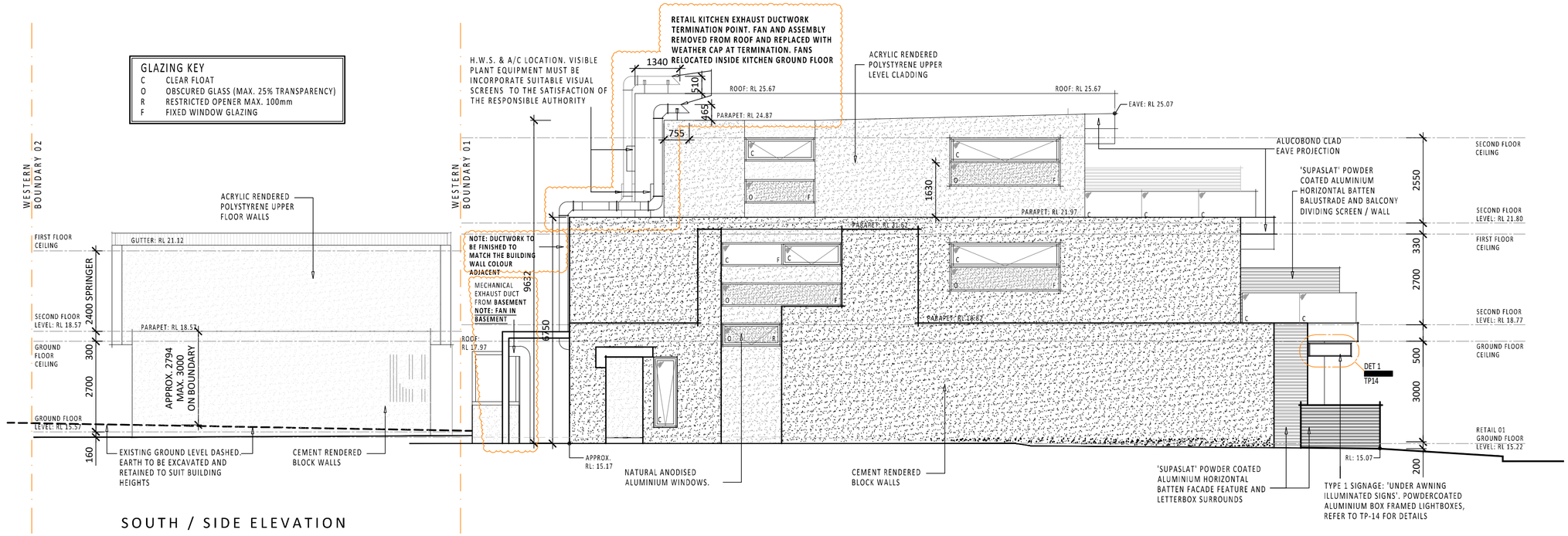
DATE:	REVISION:	No.	BY:
13.03.13	RETAIL AREAS REVISED. RLs NOTED.		
	ACOUSTIC REQUIREMENTS NOTED	A	NC
18.01.17	SECTION 57A	C	NC
27.04.17	SECTION 72. FAN REMOVED FROM ROOF	D	NC
18.07.17	SOUTHERN DUCT POSITION CORRECTED FOLLOWING SITE INVESTIGATION, A/C UNITS RELOCATED, DUCT COLOUR SPECIFIED, ACOUSTIC NOTES UPDATED	E	NC

ISSUE DATE:	DRAWING REF.	DESIGNED:	DRAWING No.
18.07.17	SK13.1_REV E	NC	TP-12
SCALE: 1:100 @ A2	JOB REF. 1624TORQU	DRAWN: NC	REVISION: E

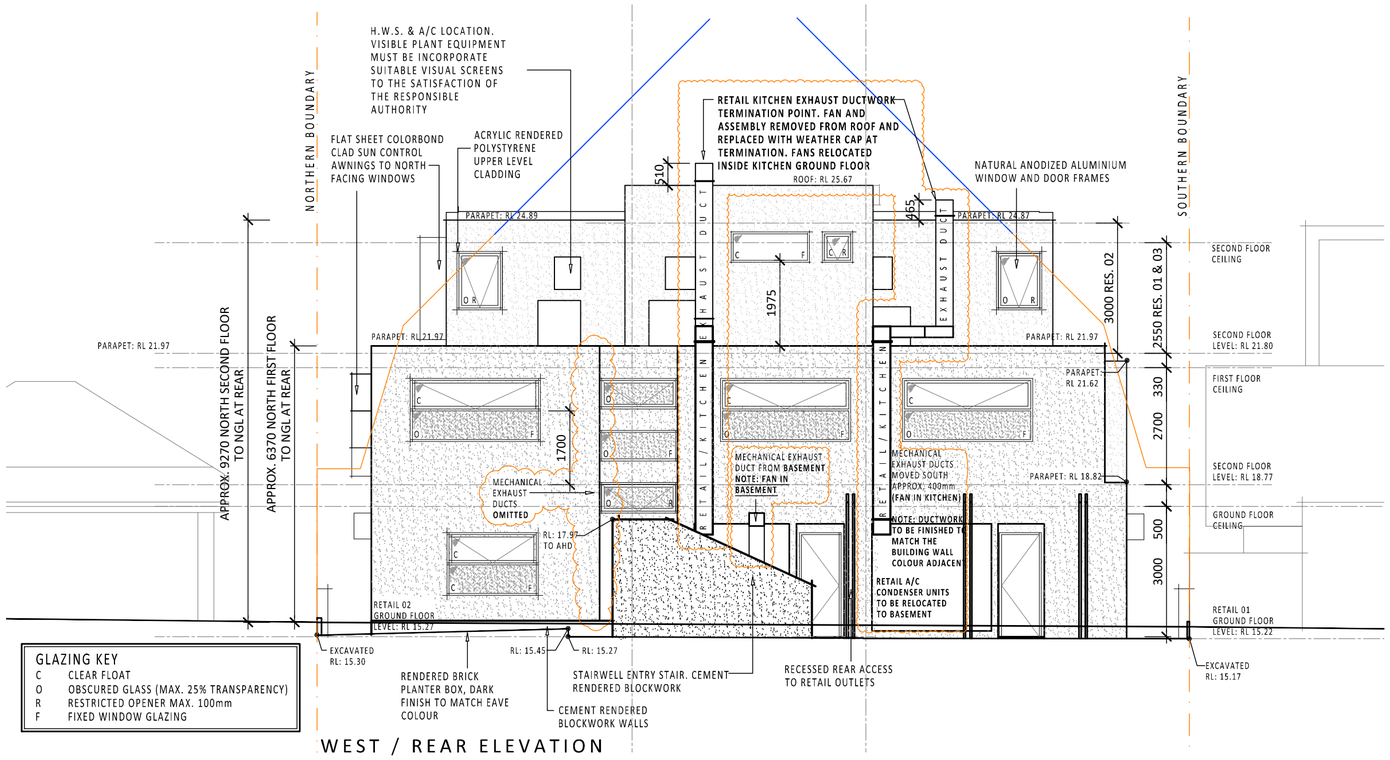
ACOUSTIC NOTES:

REFER TO **SLR ACOUSTIC CONSULTING** - 640.10563-L03-v1.0 Noise measurements REPORT CONDUCTED: 15 JULY 2017 FOR NOISE MEASUREMENT PROCEDURES AND RESULTS

GLAZING KEY
C CLEAR FLOAT
O OBSCURED GLASS (MAX. 25% TRANSPARENCY)
R RESTRICTED OPENER MAX. 100mm
F FIXED WINDOW GLAZING

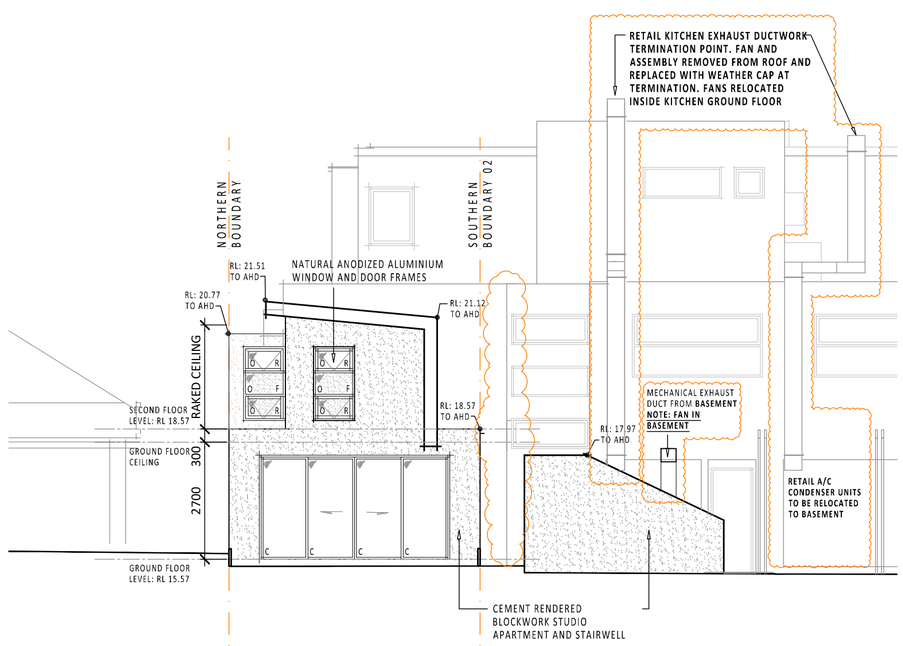


SOUTH / SIDE ELEVATION



GLAZING KEY
C CLEAR FLOAT
O OBSCURED GLASS (MAX. 25% TRANSPARENCY)
R RESTRICTED OPENER MAX. 100mm
F FIXED WINDOW GLAZING

WEST / REAR ELEVATION



WEST / REAR ELEVATION
(STUDIO APARTMENT)

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CLIENT:
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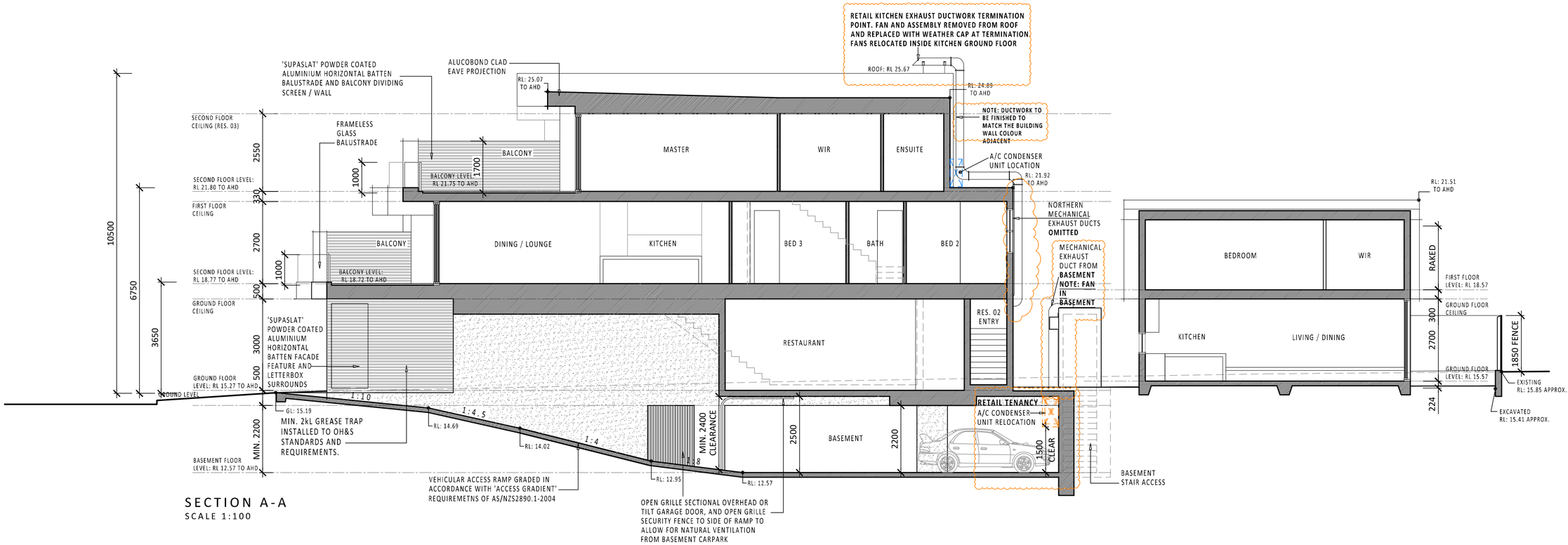
PROJECT TITLE:
PROPOSED RETAIL & RESIDENTIAL DEVELOPMENT
AT:
40 THE ESPLANADE TORQUAY 3228

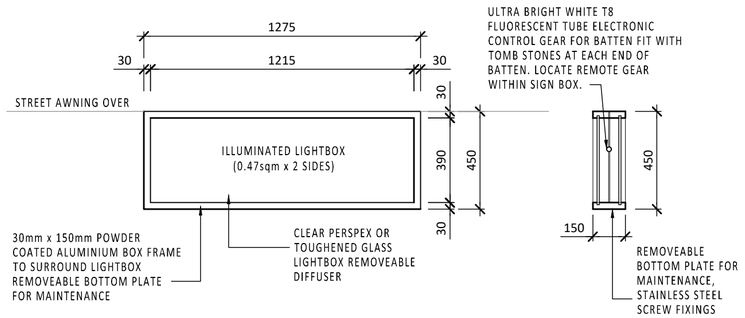
DRAWING TITLE:
TOWN PLANNING
SECTION 72 AMENDMENT
ELEVATIONS 02

DATE:	REVISION:	No.	BY:
13.03.13	RETAIL AREAS REVISED. RLs NOTED.		
	ACOUSTIC REQUIREMENTS NOTED	A	NC
18.01.17	SECTION 57A	C	NC
27.04.17	SECTION 72. FAN REMOVED FROM ROOF	D	NC
18.07.17	SOUTHERN DUCT POSITION CORRECTED		
	FOLLOWING SITE INVESTIGATION, A/C		
	UNITS RELOCATED, DUCT COLOUR		
	SPECIFIED, ACOUSTIC NOTES UPDATED	E	NC

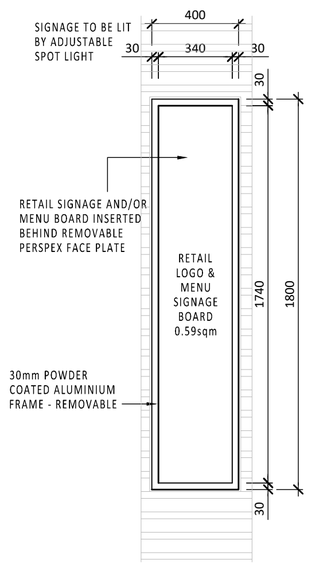
ISSUE DATE:	DRAWING REF.	DESIGNED:	DRAWING No.
18.07.17	SK13.1_REV E	NC	TP-13
SCALE: 1:100 @ A2	JOB REF. 1624TORQU	DRAWN: NC	REVISION: E



SECTION A-A
SCALE 1:100



DETAIL 01
SIGN TYPE 01
SCALE 1:20



DETAIL 02
SIGN TYPE 02
SCALE 1:20

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CLIENT:
RAIZ & ALVEENA PTY LTD AND WHYTES

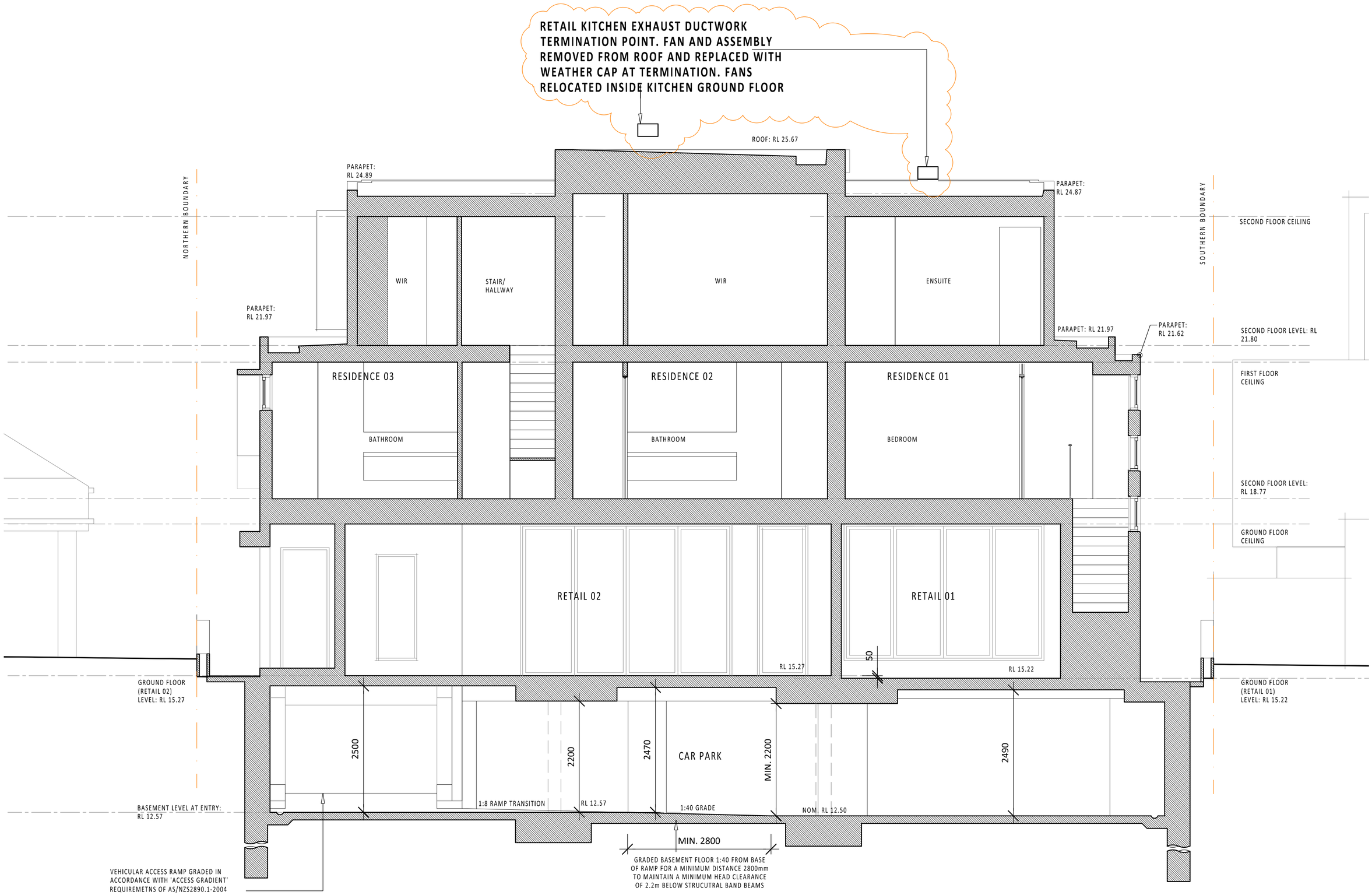
PROJECT TITLE:
PROPOSED RETAIL & RESIDENTIAL DEVELOPMENT
AT:
40 THE ESPLANADE TORQUAY 3228

DRAWING TITLE:
TOWN PLANNING
SECTION 72 AMENDMENT

SECTION A-A & DETAILS

DATE:	REVISION:	No.	BY:
13.03.13	RETAIL AREAS REVISED. RLs NOTED.		
	ACOUSTIC REQUIREMENTS NOTED	A	NC
18.01.17	SECTION 57A	C	NC
27.04.17	SECTION 72. FAN REMOVED FROM ROOF	D	NC
18.07.17	SOUTHERN DUCT POSITION CORRECTED		
	FOLLOWING SITE INVESTIGATION, A/C		
	UNITS RELOCATED, DUCT COLOUR		
	SPECIFIED, ACOUSTIC NOTES UPDATED	E	NC

ISSUE DATE: 18.07.17
DRAWING REF.: SK13.1_REV E
DESIGNED: NC
DRAWING No.: TP-14
SCALE: 1:100 @ A2
JOB REF.: 1624TORQU
DRAWN: NC
REVISION: E



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CLIENT:
RAIZ & ALVEENA PTY LTD AND WHYTES

PROJECT TITLE:
PROPOSED RETAIL & RESIDENTIAL DEVELOPMENT

AT:
40 THE ESPLANADE TORQUAY 3228

DRAWING TITLE:
TOWN PLANNING
SECTION 72 AMENDMENT

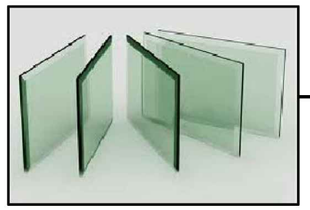
SECTION B-B

DATE:	REVISION:	No.	BY:
13.03.13	RETAIL AREAS REVISED. RLs NOTED.		
	ACOUSTIC REQUIREMENTS NOTED	A	NC
18.01.17	SECTION 57A	C	NC
27.04.17	SECTION 72. FAN REMOVED FROM ROOF	D	NC
18.07.17	SOUTHERN DUCT POSITION CORRECTED		
	FOLLOWING SITE INVESTIGATION, A/C		
	UNITS RELOCATED, DUCT COLOUR		
	SPECIFIED, ACOUSTIC NOTES UPDATED	E	NC

ISSUE DATE: 18.07.17
DRAWING REF.: SK13.1_REV E
DESIGNED: NC
DRAWING No.: TP-14a
SCALE: 1:50 @ A2
JOB REF.: 1624TORQU
DRAWN: NC
REVISION: E

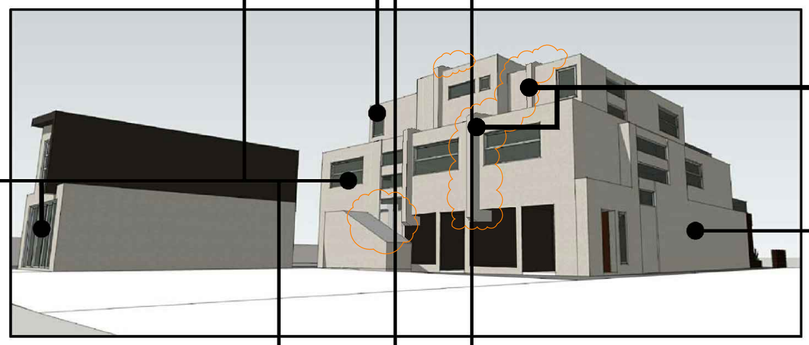
POWDERCOATED ALUMINIUM BATTENS (*'SUPASLAT'*):
- BALCONY DIVIDING SCREENS
- BALUSTRADE
- RETAIL FACADE FEATURES
- PLANTER BOXES
- BENCH SEATS

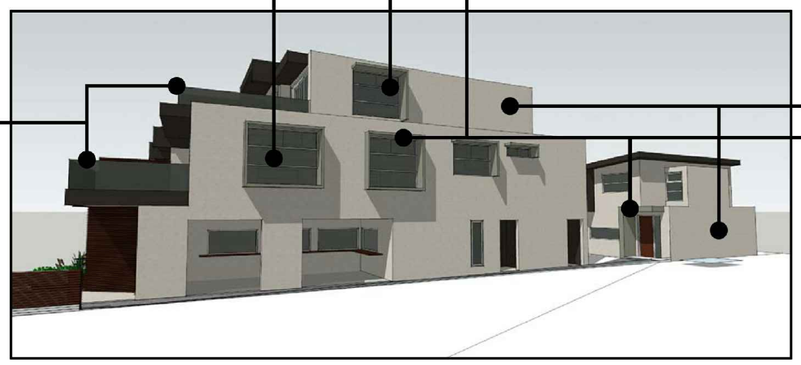
NATRUAL ANODISED ALUMINIUM:
- WINDOWS & DOOR FRAMES



CLEAR FLOAT GLASS:
- BALUSTRADE
- WINDOWS
- DOORS & WINDOWS

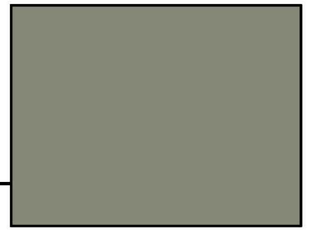
STAINLESS STEEL:
- BALUSTRADE FRAME
- HANDRAILS (RECTANGULAR SECTION)





ALUCOBOND SOLID GREY BROWN 337:
- EAVES
- FASCIAS

DULUX - LIMEWHITE :
- ALL RENDERED SURFACES
- EXTERNAL DUCTWORK



COLORBOND BUSHLAND FLAT SHEET:
- SHADE AWNING FRAMES (TO NORTH FACING WINDOWS)
- AWNING SIGN FRAME CALDDING

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CLIENT:
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PROJECT TITLE:
PROPOSED RETAIL & RESIDENTIAL DEVELOPMENT

AT:
40 THE ESPLANADE TORQUAY 3228

DRAWING TITLE:
TOWN PLANNING
SECTION 72 AMENDMENT
FINISHES & COLOUR SCHEME

DATE:	REVISION:	No.	BY:
18.01.17	EXHAUST DUCT LOCATION AMENDED.	C	NC
27.04.17	SECTION 72. FAN REMOVED FROM ROOF	D	NC
18.07.17	SOUTHERN DUCT POSITION CORRECTED FOLLOWING SITE INVESTIGATION, DUCT COLOUR SPECIFIED	E	NC

ISSUE DATE:	DRAWING REF.	DESIGNED:	DRAWING No.
18.07.17	SK13.1_REV E	NC	TP-17
SCALE:	JOB REF.	DRAWN:	REVISION:
1:100 @ A2	1624TORQU	NC	E

Contact: John Cicero
Direct Line: (03) 9691 0204
Direct Email: JCicero@besthooper.com.au
Principal: John Cicero
Our Ref: JDC:170760
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BEST HOOPER PTY LTD
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31 August 2017

Surf Coast Shire
PO Box 350
TORQUAY VIC 3228
By email & post: BSchmied@surfcoast.vic.gov.au

Dear Sir/Madam,

40 The Esplanade Torquay

We refer to your email dated 17 August 2017 and 29 August 2017 and respond below to the matters raised therein. It is our overarching submission that Council cannot make an informed decision on our client's application nor a final decision on the appropriate uses of the building without the benefit of a single, final, acoustic and odour report of the entire system and building that:

1. is carried out by a fully independent expert consultant;
2. uses professional equipment to test both noise and odour from within habitable rooms; and,
3. tests in isolation the individual items of equipment (such as the carpark exhaust, kitchen exhaust, restaurant and domestic air condition condensers separately) and also with them operating altogether.

We submit that Council would be best placed to commission such a report as it would require the cooperation of all interested parties including the objectors, residents of the units and operators of the commercial premises eliminating any potential for interference or bias.

Accordingly we would suggest that Council should defer a decision on the application until after receipt of an updated full report.

1. Acoustic Requirements of the Endorsed Plans

We confirm that our client's application does not seek to replace or remove the 2013 acoustic requirements from the endorsed plans. We agree that the initial endorsed SLR report and acoustic requirements cover much more than just mechanical plant and our clients' application does not seek to remove those endorsed requirements. We confirm the only recommendation of that report which has been formally amended upon review by SLR was the requirement for the specific car exhaust ducting to be more than 5m and not in direct line of sight of habitable rooms. SLR themselves have run necessary testing on the equipment and confirmed in their 20 July 2017 report that this recommendation is no longer reasonably required given the acoustic and aesthetic qualities of the materials purposefully utilized in that position. **As the endorsed planning permit specifically requires the 7 March 2013 SLR Report to be implemented we will be requesting SLR to incorporate this amended recommendation solely into a revised version of the 7 March 2013 report to then be submitted for endorsement with our clients application.** We submit that this should adequately address the concerns of the objectors who have raised the issue of this report. A full, final report would no doubt benefit council's decision on this issue also.

2. Fan Speeds of Kitchen Exhaust Ducts

Council will no doubt be aware that the new rangehood was installed primarily with the intention to alleviate the concerns of residents regarding noise and odour and that our clients have spared no expense on the new equipment for such purposes including conducting research and obtaining private engineering recommendations for the installation of in-line fans and electrostatic equipment. We note that testing was done of the new unit almost as soon as it was installed in order to provide urgent test results at Councils request to satisfy prohibitive Notices issued at the time. **We submit that this testing was necessary given the time constraints but acknowledge that it may have been carried out prematurely without giving the installers and engineers sufficient time to ensure the practical effectiveness and efficient operation of the system.**

We are instructed by our clients to confirm that since the last SLR testing of that system engineers advised the operators of the restaurant and our clients that the fan speeds would need to be increased to ensure the effective operation of the system to meet all acoustic, odour and safety requirements. However, on recommendations of both the rangehood manufacturers, the independent engineers and by SLR; even with the fans and entire unit running at full capacity on the highest setting it should not breach the noise limitations.

3. Chi-Rho Consulting Report 11/8/17

We confirm we have provided this report to both SLR and to Fryda Dorne engineers for their comment and opinion as it relates to the kitchen exhaust ducting system. Even without their professional opinion however this report is clearly flawed. The major finding of this report is incorrect as on page 11 of the report the consultants imply that the build-up of kitchen grease on the upper surface of the roof (shown in Figure 5 of their report) was the result of the new system that had been installed just one month prior. **We are instructed by our clients and have photographic evidence to prove that this grease build up was in fact residue from the *previous* system which has since been replaced**.

Figure A attached shows a photo of the position of the old stacks that had caused this original grease build up. Our clients instruct that they had requested that their tenants have this area professionally cleaned as soon as it was identified when the large fans were removed from the rooftop. They were advised that this clean had been done but later discovered it had not and so they have attended on site on 29 August 2017 to ensure it has now been carried out and have even offered to replace the affected roof panels entirely. Annexed as **Figure B** is a photo of the current state of the roof as at 29 August 2017 after full clean showing clearly that no grease or oil is coming from the new system however smears remain after the clean which is why our client is still offering to replace those sheets at their cost if carried out by our clients tradesmen.

We note that it was NOT a finding of the Chi-Rho report that there was any grease build up inside the duct or bird break discharge. Figure 2 and Figure 4 of the Chi-Rho consulting report also clearly show no grease is building up or indeed even passing through the exit of the kitchen duct with the new exhaust system. **Figure C** attached hereto is another close up photo of the current duct exit as at 29 August 2017 confirming this. Common sense would dictate these new ducts would be covered in grease inside if they were in fact causing the build up previously seen on the roof as the report seeks to imply.

We note that this report has various other shortcomings as it is based more on 'information and comments provided by the owners (objectors)' particularly regarding the level of the fan operation, the equipment specifications, cooking levels and basic opinions rather than based on professional independent measurements. Some of these issues are as follows:

i. The report seeks to refer to noise measurements at 3.1.2 that interestingly 'were taken but not reported'?

ii. It refers in 3.1.2 to a purported noise measurement of Marshall Day and SLR of "*55dB(A) taken from inside a lounge room of the apartmen*t" and apparently reported in both a Marshall Day and SLR report; neither of which our client has ever seen. We note that such internal tests to our clients knowledge were only ever carried out long ago prior to all of the amendments made to the equipment.

iii. Further in 3.1.2 the report refers to an acceptable level of noise for a '*private residence in rural and outer suburbs*' which is clearly irrelevant to a property in this Special Use Zone and urban environment.

iv. It also makes reference only to a 'distinct hum of a motor which would be distracting' without any measurement or attempt at identifying the source of this motor which we submit may in fact be from air conditioning condensers that are partly the subject of our application.

v. It refers at 4.2 to odours being detected by them without any professional testing or enquiry as to the source. It then seeks to avoid bias by mentioning a corroboration by 'an independent person on site' but mentions no names or qualifications of any such person.

vi. It makes various 'findings' in section 4.3 regarding noise and airflow based entirely on assumptions without professional testing

We submit that this Chi-Rho report does not assist any party in their decision-making and again submit that a full, final report commissioned by Council would be the only way to adequately address these concerns.

4. DLA Environmental Services Report 25/8/17

We confirm we have also provided this report to both SLR and to Fryda Dorne engineers for their comment and professional review as it refers specifically to noise levels and measurements of Marshall Day and SLR and to odour regarding the kitchen exhaust.

This report confirms SLR's recommendations were to move the air-conditioning condensers as they may be the source of the noise nuisance these objectors are experiencing. **We submit that the only way to determine this properly is to carry out the independent full report suggested with these condensers switched completely off and operating also in isolation. Attached as Figure D is a photo of the current placement of those condensers for your reference.**

We note further that this report followed and included a review of the Chi-Rho consulting report findings which were largely based on opinion and theory and riddled with deficiencies as discussed above. At Paragraph 3.2 it again refers to recommendations and considerations made from 'information by the owners', to a reading of 55dB(A) that is not referred to in any report and to incorrect zoning references.

The site observations listed in Para 3.3 of that report refer to 'a mechanical hum' (no professional readings taken) which could as stated simply be from the restaurants air-conditioning condensers. Para 3.4 refers incorrectly to 'SLR recommended removal of kitchen fans'. This we believe should be a reference to the air-conditioning condensers which we have already referred to.

Odour

This report at section 4 purports to measure in accordance with EPA methodology the odour at the building both inside and outside the apartment. The major finding of this report is that between 3:30 and 6:30pm on 4 August 2017 there was a strong smell of fish and oil around the premises. The operators of the restaurant maintain sales records in their system which we are advised have shown that between the hours of 3 and 6pm on the 4th August 2017 the only seafood cooked in those three hours was two (2) serves of calamari and chips, which makes the reports findings highly questionable as to the true source of this odour with such a large variation of other meals being cooked during that same time.

The report states that no active food service was occurring at Pond Café or Café Moby's nearby which is also questionable as Café Moby is open for the same trading hours as the Whyte's restaurant. Our client is of the opinion that Café Moby would be the more likely source of these odours; though apart from this café we note that there are also various other restaurants in the vicinity behind the subject property, along Gilbert St also which would be contributing to odour around the building. We note also that high winds in the area which are predominantly sea-ward (as shown in figure 3 of the Chi-Rho report) would potentially disperse odours from behind the building toward the apartments at the front of the boardwalk. It would seem from the report findings that the odour is not simply coming from a single source as it was reportedly found present at street level at the front and rear of the buildings, at first and second floor bedrooms and at the front balconys also.

Nevertheless, to put the matter beyond doubt, we agree that this odour issue requires further professional investigation and submit that an independent full report again be

commissioned on this issue that takes into account all necessary variables and the surrounding. In the meantime also we have sought further advice from the manufacturer and engineers involved in the new kitchen exhaust regarding its treatment of odour.

5. Further Submission Regarding Need for Independent Report

One of the other major findings of the most recent acoustic reports commissioned by our clients and Council was that infrastructure on the rooves of adjacent properties could be heard from the readings and measurements of the subject property and as such these other buildings have been a major contributing factor to ambient noise. **Figure E** attached hereto is a photo of behind the building toward Gilbert St showing clearly the amount of roof mounted condensers which we submit may be also affecting readings of acoustic assessments of the building and equipment in question. Our client is not agreeable to carrying out further acoustic tests *outside* the habitable rooms of the premises as these tests have proven inadequate in the past to professionally and satisfactorily address all parties concerns; however our client supports professional testing from within habitable rooms with all interested parties consent. We confirm that it is in our clients interest to test all equipment in isolation also to ensure prior to assessment of their application that the air-conditioning condensers they are seeking to relocate are in fact contributing to the noise.

Raising the discharges of the exhaust ducting on the roof was a recommendation mentioned in both the Chi-Rho and DLA reports that we do not deem necessary. However, should an independent full report also make such recommendation our client would be willing to include that in their amended application also for endorsement.

We note that we had requested internal access with the residents of Unit 3 and 4 for testing during the most recent SLR acoustic report but given the short time-frame in which we had to commission and provide the report we were unable to accommodate the requests of those owners (regardless of whether their requirements for access were deemed unreasonable or not). **It is submitted though that a Council commissioned report with sufficient time to make professional enquiries and obtain consents of all interested parties would ultimately be in the interests of all parties and objectors.**

6. Objector of Unit 4 - (Responses using their headings)

Acoustic Requirements from SLR Report

In response to the submissions of this objector we are instructed again to advise that our client does not seek to remove all of the acoustic requirements from the SLR 2013 report. All of the requirements should remain with the exception of the reduction from 5m to 3m as discussed. This is due to the new recommendations and findings from SLR and the fact that the ducting utilised now has considerably smaller volume than what was originally planned. Further we note that there should be no requirement for acoustic lining to the ducting as the materials used were thicker than regulation and are fire-rated beyond original recommendations.

Noise Commercial Equipment

This objector states that the Farm Foods contribution of noise was not noted in 2013 report because they were not in operation then. We are instructed that they *were* in operation at the time of the most recent SLR tests but have permanently closed *since then*. We note our comments above regarding the neighbouring restaurants and commercial equipment also.

Condition re Plant and Duct Termination

Our client believes it is impractical (and potentially physically impossible) to relocate the restaurant's air-conditioning condensers to the front of the premises. Regardless, it would create an eyesore to the public realm and may impact other trading regulations. We understand that the car park exhaust which works primarily for exhaust fume ventilation (not circulation) should not require any further operation beyond its current use levels if the air-con condensers are relocated to the car park wall (which we note is property of the restaurant tenancy). This can be confirmed in an independent report. **Alternatively**, **if the condensers are to remain in their current position (subject to noise testing) our client would happily provide screening for these at their sole cost to alleviate this objectors concerns**.

Owners Corporation Approvals

We submit that the ducting for the exhaust over common property does not require OC approvals or licenses as it under an implied easement under s12(2) of the Subdivision Act 1988 *(Vic)* which is '*necessary… to provide passage of air… which is necessary for the reasonable use and enjoyment of the commercial lot…'.*

Exhaust Ventilation

This requirement for discharges 3m above a roof is not relevant to the new ducting system which has in-built catchers and electro-static precipitators.

Garage Duct

The amended SLR report will alleviate the 5m issue in question here. Our client confirms that the ducting is manufactured of a material which meets the acoustic, fire proof requirements and is isolated from the building operable on a timer.

7. Objector of Unit 3

Our client has instructed us to not respond to the majority of the matters raised in this submission as they have already previously been adequately addressed on various occasions.

This objector makes reference to our client not having fire compliance and safety certificates which Council would know is incorrect. The objector also seeks to arbitrarily and vexatiously cover all points of objection without adequate reason such as '*Amendments do not meet quality design… or energy efficiency'*. We believe the remainder of the issues raised in the objection have been extensively covered in our correspondence including the two reports that they commissioned.

8. Council Hearing

For the avoidance of any doubt and ease of reference we have now also **included** a copy of the engineers design and specifications of the new kitchen exhaust equipment. At this stage our client does not wish to attend on 5 September 2017 given the detailed response and this request for a deferral of decision on the application. **However, if you feel as though it would assist Council further in resolving the issues at hand to have our client present we will seek to arrange for them to attend.**

Yours faithfully
BEST HOOPER

John Cicero
Partner

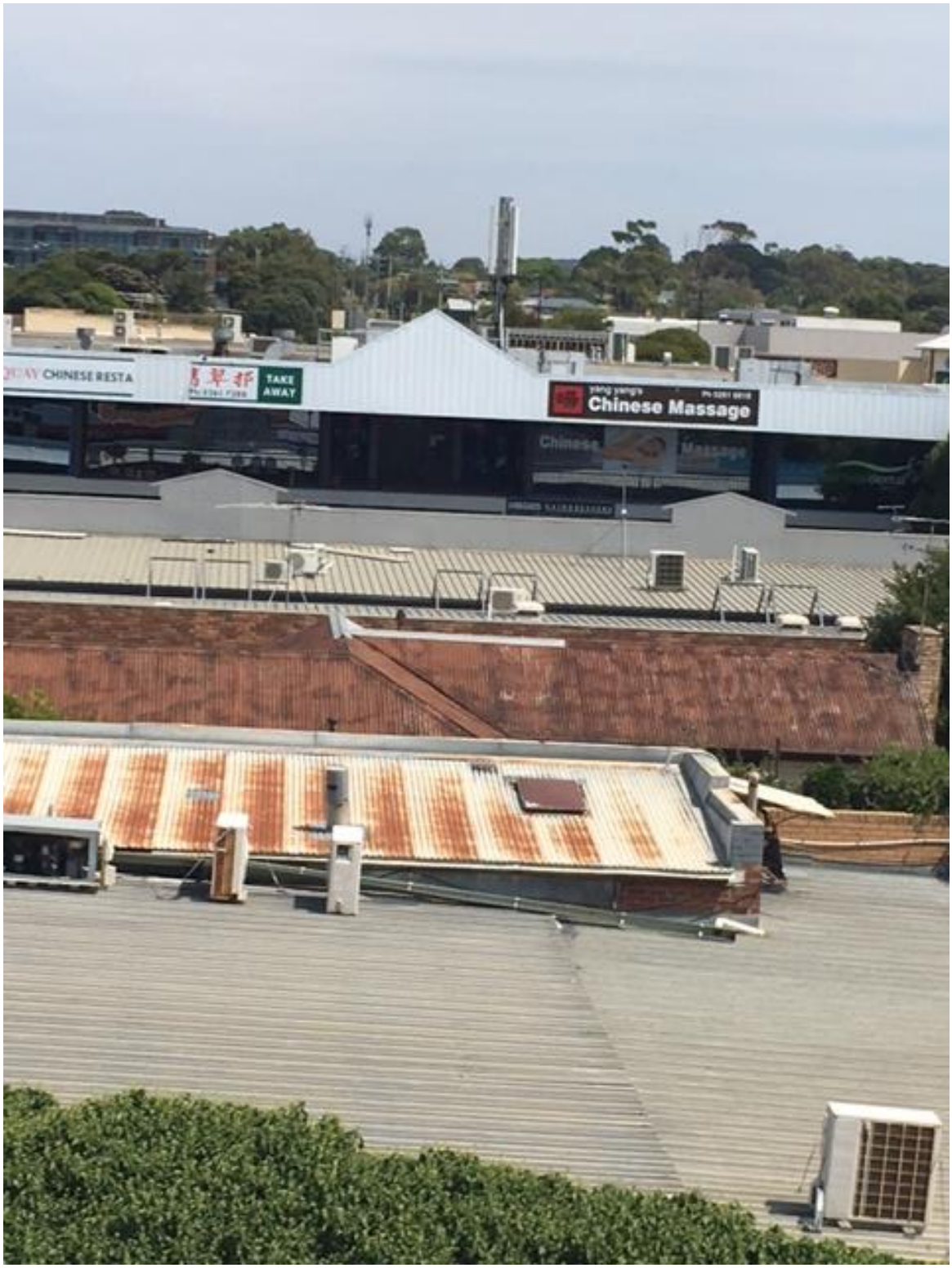
Figure A – Previous exhaust stack discharge with top mounted fan which caused roof grease

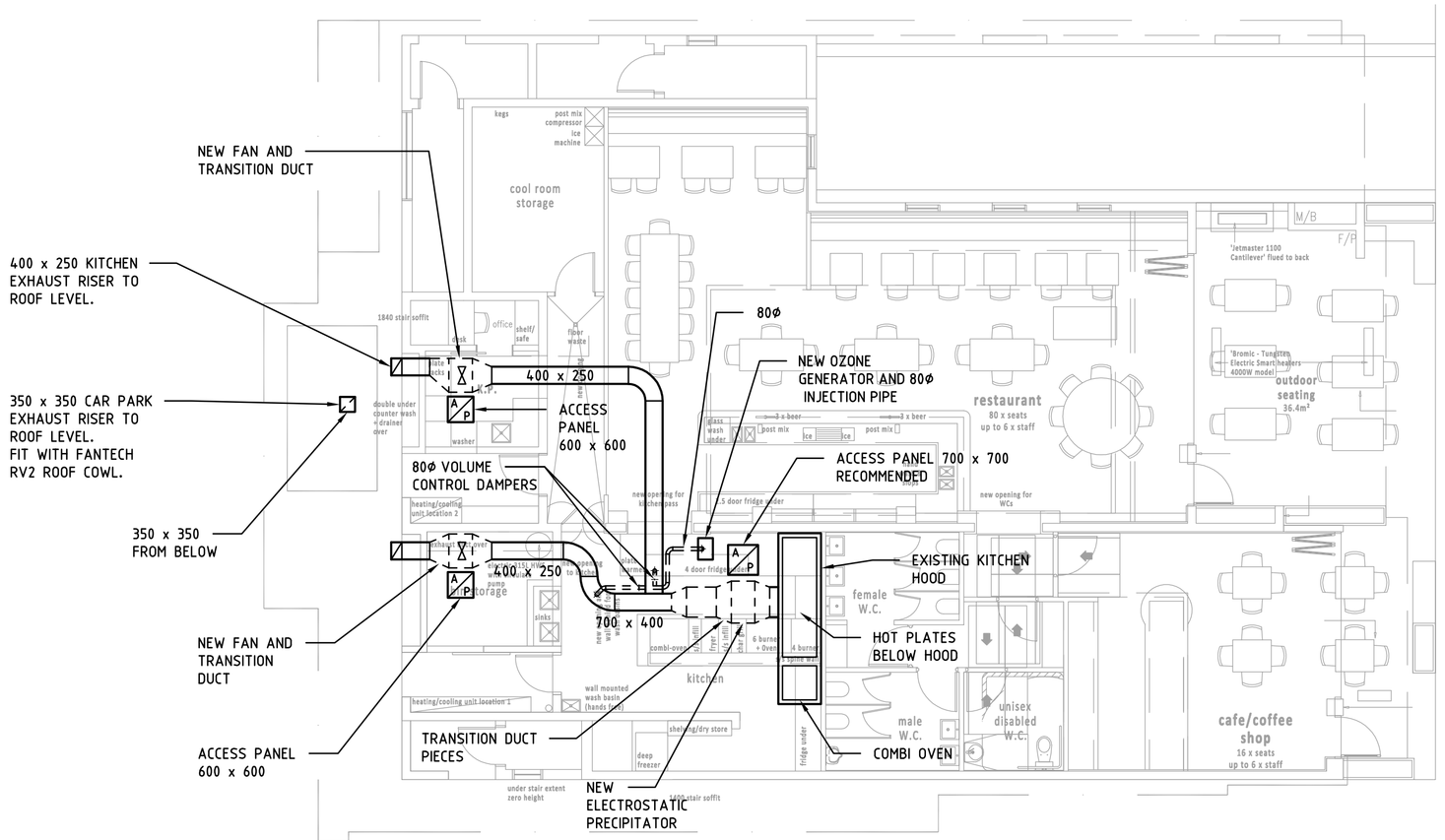
Figure B – Current state of roof as at 29 August 2017 at new duct exit

Figure C – Current Duct up-close showing no grease from new system inside or out (nb: bird droppings beside)

Figure D – Current placement of restaurant air-conditioning condensers which our client wishes to relocate in an effort to resolve any noise nuisance.

Figure E – Photo of behind the building toward Gilbert St, snapshot showing just some of the other roof mounted condensers of other properties picked up in past acoustic reports.





NOTES:

1. EXHAUST FANS TO BE MODEL FANTECH PCD 566ER.
2. ELECTROSTATIC PRECIPITATOR TO BE AIR AND ODOUR MANAGEMENT MODEL EAN 400.
3. OZONE GENERATOR TO BE AIR AND ODOUR MANAGEMENT MODEL OG 35.
4. FLOW DAMPER TO BE INSTALLED IN EACH OZONE GENERATOR INJECTION PIPE AS SHOWN.
5. ACCESS PANELS TO BE INSTALLED IN SUITABLE LOCATION TO SUIT MAINTENANCE REQUIREMENTS GENERALLY AS SHOWN.
6. KITCHEN EXHAUST DUCTS TO HAVE INSPECTION AND CLEANING OPENINGS IN ACCORDANCE WITH AS 4524.2 CLAUSE 2.1.3.

Rev.	Description	By	Date
A	CONTRACT ISSUE	S.P.	15/05/17

FRYDA DORNE & ASSOCIATES
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Project 40 THE ESPLANADE TORQUAY

Title MECHANIICAL SERVICES KITCHEN EXHAUST DUCT DETAIL LAYOUT

Drawn	-----
Checked	
Scale	1:100
Date Drawn	MAY 2017
Drg No.	2915-M2
Rev.	A

Ben Schmied

From: John Cicero <jCicero@besthooper.com.au>
Sent: Tuesday, 5 September 2017 1:28 PM
To: Ben Schmied
Subject: FW: 40 The Esplanade Torquay - URGENT Update to submissions
Attachments: 640.10563-L04-v0.1 Noise review 20170831 - SLR Response 31.8.17.pdf; Whytes Kalmick Air Letter.pdf; AOM EAN 600 and 1200_Equipment Specifications.pdf; AOM OG35_Equipment Specifications.pdf

Dear Ben,

We refer to our previous correspondence dated 31 August 2017 and note that a conference was to be scheduled today but we have not yet been provided with any further details for same.
Please advise if this conference is still taking place today and whether you believe our clients attendance would be of any benefit.
Perhaps we can arrange for a telephone link-up for this to occur.

In the meantime, we confirm we have sought the opinions and responses of various qualified tradesmen in different fields relevant to the decision to be made in our clients application.

1. We now **enclose** herewith a copy of the response received from **Graeme Campbell of SLR Consulting** (acoustic expert to comment on the DLA and Chi-rho reports commissioned by the objectors) which we note made the following important observations:
   - DLA Report used the incorrect NIRV Table 1, SLR confirmed that the recommended maximum noise levels are determined according to SEPP N-1 procedures which are different to NIRV procedures rendering DLA's presumptions incorrect.
   - Chi-Rho consulting do not appear to be a member of the Association of Australian Acoustical Consultants nor a member of the Australian Acoustical Society. The sound meter used by them does not measure to EPA requirements and there was no mention of the instruments used being calibrated.
   - SLR never recorded a measurement of 55dBA from inside the apartment despite Chi-Rho referring to this result.
   - Chi-Rho also incorrectly refer to levels for 'a private residence in rural and outer suburbs' which in SLR opinion is also not correct.
   - SLR cannot comment on the source of the engine hum noise or whether raising the outlets would reduce noise without carrying out proper testing on site (and we submit that Chi-Rho Consulting similarly could not comment without carrying out adequate measurements).

2. We also now **enclose** a short response received from **Paul Doherty of Kalmick Air** (Installer of the kitchen exhaust and duct work) in which he confirms the fans are mounted with anti-vibration rubbers and are currently set on the correct speeds.

3. We also received verbal advices from **Fryda Dorne and Associates** (engineering consultants who assisted with exhaust and duct design) after a review of the DLA and Chi-Rho reports that the bird break at the duct termination may require adjustment as it should be facing downward to assist in avoiding any entry of rain and further that the installation of the metal deflector *around* the vermin mesh but *inside* the duct may restrict airflow and add to noise. Our client is seeking to address and remedy this as soon as possible to ensure the mesh faces downward/is covered by ducting from above to avoid ingress of rain and so that drainage is not required. They will also seek to correct the metal deflector 'border' to hold the vermin mesh around the *exterior* of the duct termination in accordance with Fryda Dorne's recommendation. We are instructed that these are minor adjustments and should not change anything else on our clients application.

4. Finally, **Brent Nicholls of Air Care Australia and Air and Odour Management** (the Australian Importer and Supplier of the Rangehood and Electrostatic Precipitator) was contacted for comment on the findings of the

DLA and Chi-Rho reports and to comment on the efficiencies of the system. He has provided a response via email to our queries (copy now **attached**) which we submit may assist Councils decision. His response includes complete specifications of the equipment installed and various recommendations for servicing that our client will put in place with the tenant. He also has indicated that a full assessment of the system would be required in order to confirm its efficient operation and we suggest that perhaps should be commissioned firstly prior to any decision or acoustic assessment report being ordered. Our client is currently awaiting his response to discuss the costs and possible time frame for this report to be commissioned if Council would be interested in its contents.

We look forward to your response.

Regards,

Paige Robinson Personal Assistant
On behalf of **John Cicero**, Principal
Direct Tel: (03) 9691 0225 | **John Cicero: (03) 9670 8951**
Reply to: jcicero@besthooper.com.au
Address: Level 9 / 451 Little Bourke Street, Melbourne, Victoria, 3000

BESTHOOPER
LAWYERS

LATEST NEWS:
Know your rights as an owner of land identified for a public purpose.
- Article by Joel Snyder

31 August 2017

640.10563-L04-v0.1 Noise review 20170831.docx

Best Hooper Lawyers
Level 9, 451 Little Bourke Street
Melbourne, Vic. 3000

Attention: Giancarlo Romano

Dear Giancarlo

40 The Esplanade, Torquay
Report Review

I have been provided with the reports of Chi-Rho Consulting dated 11 August 2017 and DLA Environmental dated 25 August 2017 and reviewed their contents. In my professional opinion I note as follows:"

DLA Report:

Page 6 – Policy Guidelines. They incorrectly state that the relevant guidelines include "Interim Guidelines for Control of Noise from Industry in Country Victoria", and then state that this is now "Noise in Regional Victoria". The relevant guideline is "Noise from Industry in Regional Victoria" (NIRV).

Para 2.5 – I don't have any concern with this paragraph, other than they still refer to the incorrect title of the guideline.

Para 3.0 – They have incorrectly used NIRV Table 1 to determine the noise limits. Because the premises is within a major urban area the recommended maximum noise levels (RMNL) are determined according to SEPP N-1. See NIRV page 7.

Para 3.1 – DLA have incorrectly presumed that Marshall Day have derived their RMNL's using the NIRV Table 1 and land use zones of Industrial 1 & 2. The RMNL's for this site are to be determined using SEPP N-1 procedures which are different to NIRV procedures. I suspect they are not familiar with Victorian noise policies and guidelines.

Para 3.4 – DLA refer to removal of the kitchen fans to the carpark, which is incorrect. They should be referring to the condenser fans/units.

SLR Consulting Australia Pty Ltd Suite 2, 2 Domville Avenue Hawthorn VIC 3122 Australia
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E: melbourne@slrconsulting.com www.slrconsulting.com
ABN 29 001 584 612

CHI-RHO Report:

This company does not appear to be a member of the Association of Australian Acoustical Consultants (AAAC). The author does not indicate that he is a member of the Australian Acoustical Society (AAS).

Fan speed = I don't know what speed the kitchen exhaust fans were operating at, or that they even were variable speed. The restaurant was operating with patrons present for dinner at the time.

3.1.2 The sound level meter used by them is only a Type II meter when it is preferred to be a Type I, and it does not measure an Leq noise level as required by the EPA measurement requirements. There is no mention of checking the calibration of the sound level meter.

SLR has not been inside the apartment to measure noise and so we cannot confirm the level of 55 dBA stated by them.

The reference to a private residence in the rural and outer suburbs is not correct. The latest version of AS2107 allows for "...inner city areas or entertainment districts or near major roads", or "...suburban areas or near minor roads.", or "...rural areas with negligible transportation." I believe that the suburban area is relevant for this premise.

The hum noise claimed to be heard could be from the refrigeration plant on the roof of the property further to the west, or from their own fridge in the apartment, or the neighbours air-conditioning plant.

Raising the outlet of the kitchen exhaust fans may reduce the noise level in the apartment if there was significant noise emitted from the outlets, but because I could not get on the roof and measure the outlet noise I don't know whether there is significant noise being emitted from the outlets.

Yours faithfully,
SLR Consulting Australia Pty. Ltd.

Graeme R. Campbell
Principal – Acoustics, Noise and Vibration

www.slrconsulting.com

KALMICK AIR PTY LTD

AIR CONDITIONNG & MECHANICIAL SERVICES

ABN: 96 150 519 672

36 Elvian road
woori Yallock

Vic 3139
MOB: 0400 839 953

paul@kalmickair.com.au

1st September 2017

Whytes Torquay

The fans are mounted with anti-vibration rubbers and do not make direct contact to the concrete slab.

The fans are currently set on the correct speed and do not need to be adjusted any further.

The old fans have been removed from the roof therefore there cannot be any vibration or noise from the duct.

Yours Sincerely

Paul Doherty
Director
Licenced Mechanicial Plumber
Licence Number 46275

Ben Schmied

From: John Cicero <jCicero@besthooper.com.au>
Sent: Tuesday, 5 September 2017 2:23 PM
To: Paige Robinson
Subject: FW: 40 The Esplanade Torquay - In-line kitchen exhaust system - URGENT
Attachments: AOM EAN 600 and 1200_Equipment Specifications.pdf; AOM OG35_Equipment Specifications.pdf

Report as requested
Regards

Brent Nicholls
Air Care Australia

Office: 03 5983 0052
Fax: 03 5983 0471
Mobile: 0418 329 135
www.aircareaustralia.com.au
www.aomaus.com.au

Subject: RE: 40 The Esplanade Torquay - In-line kitchen exhaust system - URGENT

In reply to the client's question on the project Whytes at Torquay kitchen filtration system, I have prepared our responses in this email for their perusal.

AOM 's involvement here is with the supply only of one unit of EAN600 electrostatic precipitator (ESP) and one unit of OG35 ozone generator. The equipment specifications have been attached to this email and have been supplied together with the equipment at time of purchase. The EAN600 electrostatic precipitator (ESP) was sized based on a given airflow range of 1500 to 1600 L/S. Efficiency at this range is between 96-97% for a type 4 cooking (which is what is at Whytes). The unit should be installed so that airflow is entering the unit from the ductwork evenly distributed across the face of the EAN600. That is there should not be any abrupt change in ducting transitions. Likewise with the discharge to ensure there is no undue back pressure caused but the ducting. The EAN600 also needs to be serviced on a regular basis to ensure there is no excessive build-up of grease internally that may reduce its effectiveness. AOM generally recommends a servicing interval of between 4-6 weeks however this may vary from store to store depending on the intensity and type of cooking. The OG35 is rated for up to 1750 L/S and is used to mitigate odour coming from the cooking process.

We have not seen the installation of the unit so we are unable to comment definitively on this. We can comment in general terms on the questions you have raised however we would like to stress that these statements are our opinions only and does not constitute a technical assessment or guarantee.

In response to your queries (in black) we comment (in red) as follows:

Chi-Rho consulting report

1. **Section 3 "Existing conditions" – Page 8 – please confirm if their understanding of the equipment materials and set up is correct or not.**
   The description appears correct in general although we have also not seen the setup within the restaurant.
2. Section 3 "Existing conditions" – Page 9 – please comment on the discharge fitment and drainage concerns raised.
   The comments appears reasonable. The main function of the 'Bird Beak Discharge' is to minimize the ingress of rainwater. The 'Bird Beak Discharge' generally is mounted with the sloping face angled towards the roofing rather than upwards. Not clear on the rational for this setup.
3. **Section 3 "Existing conditions" – Final paragraph of Page 11 – please comment on the mounting and their concerns regarding vibration.**
   Main source of vibration would be from the fan. AOM did not supply this equipment. There are no moving or rotating parts in the EAN600 unit so it is not possible for vibration to be coming from this.
4. Section 3 "Existing conditions" – Page 12 Figure 6 – please comment on the corrosion noted.
   Looks like corrosion on the threaded rod to me.
5. Section 3.1.2 – Page 14 – Please comment on their statements regarding noise (noting that the 55db reading mentioned has not actually been tested nor documented).
   The AOM equipment supplied is not a significant source of noise.
6. **Section 4.3 – Airflow and Noise 15 – Please comment on their suggestions in this section confirming the exact specifications of the new equipment, how it is fixed to the building and the correct operation of the electrostatic filter. Please comment with particular attention also to paragraph 9 and the recommendations therein based on your first-hand knowledge of the systems operation and specifications.**
   Again we have not seen the final installation of the EAN600 unit at Whytes so we cannot comment on its installation. Also the exhaust airflow needs to be measured to determine if the correct amount of air is flowing through the EAN600. Excessive airflow will mean the EAN600 will be running at low efficiencies and the consequence is that much more grease will be flowing through instead of being captured. The condition of the cells within the EAN600 should also be visually inspected to determine if the units are within the correct servicing interval. AOM suggests that a servicing log box is kept on site. This may provide information regarding any servicing of the equipment. There is also an OG35 ozone generator for odour mitigation. This needs to be checked if it has been connected properly and whether is set and running correctly.

DLA Consulting Report:

1. Section 4 "Odour" on page 15 – please comment on the potential source of the odour and whether their measurement methods are sufficient.
   The odour measurement method mentioned was based on being able to smell odour at various locations which is fine to make an initial assessment. If odour can be detected outside the front of the restaurant before peak hour it would suggest the settings on the kitchen exhaust system is not correct. Settings meaning the airflow rate from the kitchen hood. The hood supplier or installer should take a measurement of this to confirm it.
2. **Please comment generally on the efficiencies of the new ducting system in dispersing odours.**
   If strong odour is detected emitting from the discharge of the kitchen exhaust then the efficiency of the system is clearly not correct. The ESP needs to be drawing at 1500-1600 L/S in airflow to be operating at a high efficiency range. It should also be serviced at a regular interval so as to ensure the ESP unit remains working at a high level of efficiency. The ozone generator should be installed as per AOM product specifications.
3. Please comment on whether raising the duct exits to 3m above may have any effect on odour.
   Raising the duct exits to 3m above the roof level will generally mean fumes will be dispersed at a higher level, further away from the apartment balconies. I have not seen the location relative to the apartment balconies so I cannot comment on how this impacts the odour reaching these apartments. General practice is that this approach helps but as no one can control the winds, it will not be 100% fool proof.

Our mutual clients will be willing to pay your reasonable costs in time for the report/response provided.
AOM will not charge the Clients for these comments. Should the Client request that AOM carry out a review of AOM equipment on site, this will however be charged.

AOM EAN 600 AND EAN 1200 ELECTROSTATIC PRECIPITATOR EQUIPMENT SPECIFICATIONS

Table of contents

AOM AUSTRALIA ASSUMES THAT THIS DOCUMENT HAS BEEN TRANSFERRED TO THE PRODUCT OWNER AND THAT THE OWNER IS FULLY AWARE OF ITS CONTENT

1 DESCRIPTION

The EAN Series ESP, our high performance kitchen exhaust Electrostatic Precipitators, provide effective containment for air pollutants and prevent the build-up of flammable hazards. Our air cleaners are designed based on the principle of ESP "Electrostatic Precipitation". The ESP removes fine particles by charging the particles first and subsequently precipitating them into collector cells. The EAN Series Electrostatic Filters have been installed to treat the kitchen exhaust of a large range of commercial kitchens Worldwide as well as throughout Australia and New Zealand. Please contact your AOM representative for project examples.

2 GENERAL SPECIFICATIONS

Note: **These specifications have been prepared for the EAN 600 unit.** The EAN 1200 is composed on two EAN 600 bolted one on top of each other using the provided fixing points. The EAN 1200 specifications are therefore equivalent to two EAN 600.

All dimensions are manufacture specified. Actual dimensions can vary by 5 mm. Tolerances for heat expansion have been included in the specified dimensions.

Weight (kg)	120 kg
Airflow (l/s)	
Maximum airflow for: Type 3, Type 6 or light Type 4 cooking	Up to 2800 l/s depending on the situation*
Maximum airflow for: heavy Type 4 or Type 5 cooking	Contact your AOM Representative, generally recommended as: 1500 l/s (Speed through filter 2.2 m/s, Efficiency 97%)
Size (mm)	1640 (L) x 550 (W) x 650 (H)
Exhaust outlet/inlet (mm)	1400 (W) x 500 (H)
Number of cells (mm)	3 cells
Size of cells (mm)	470 (L) x 325 (W) x 465 (H)
Housing Material	Powder-Coated Galvanized Steel (2.0 mm)
Electrostatic cell	Aluminium Alloy (Thickness: 1.0 mm)
Insulation Material	Aluminium (II) Oxide
Testing	Efficiency of >95% kitchen exhaust grease and smoke particle*
High Voltage Power Pack	High Voltage 14,000 V / Low Voltage 7,000
Power Supply	220~240 V / 1P / 50/60Hz
Power Consumption	70 - 140 Watt
Resistance (clean)	25 – 50 pa depending on the speed though the filter

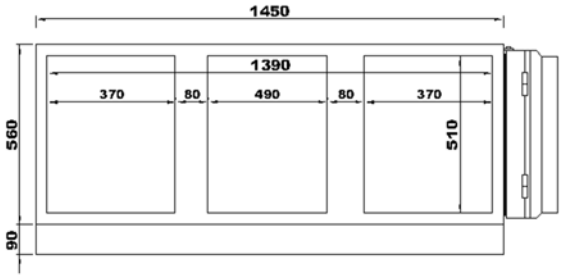
*** Manufacture specifications – speak to AOM Australia for a recommended maximum airflow based upon the specific cooking equipment, kitchen exhaust discharge conditions and requirements to AS1668.2-2012.**

3 DIMENSIONS

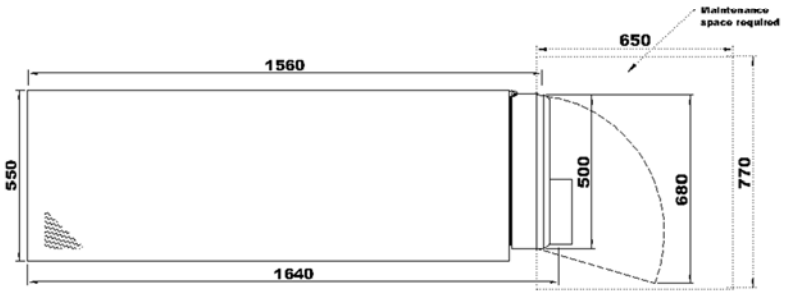
All dimensions are manufacture specified. Actual dimensions can vary by 5 mm. Tolerances for heat expansion have been included in specified dimensions.

Front View

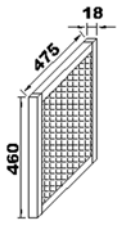
Side View

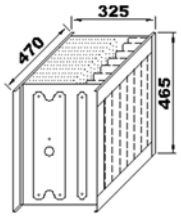


Top View



Pre-filter

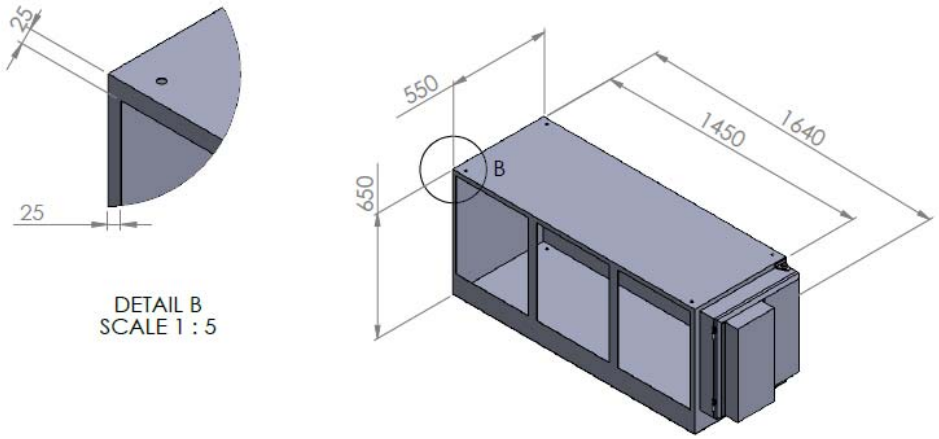




Collecting cell

Three collecting cells and three pre-filters inside of the unit

Three dimensional view and flange connection



4 COMPONENTS

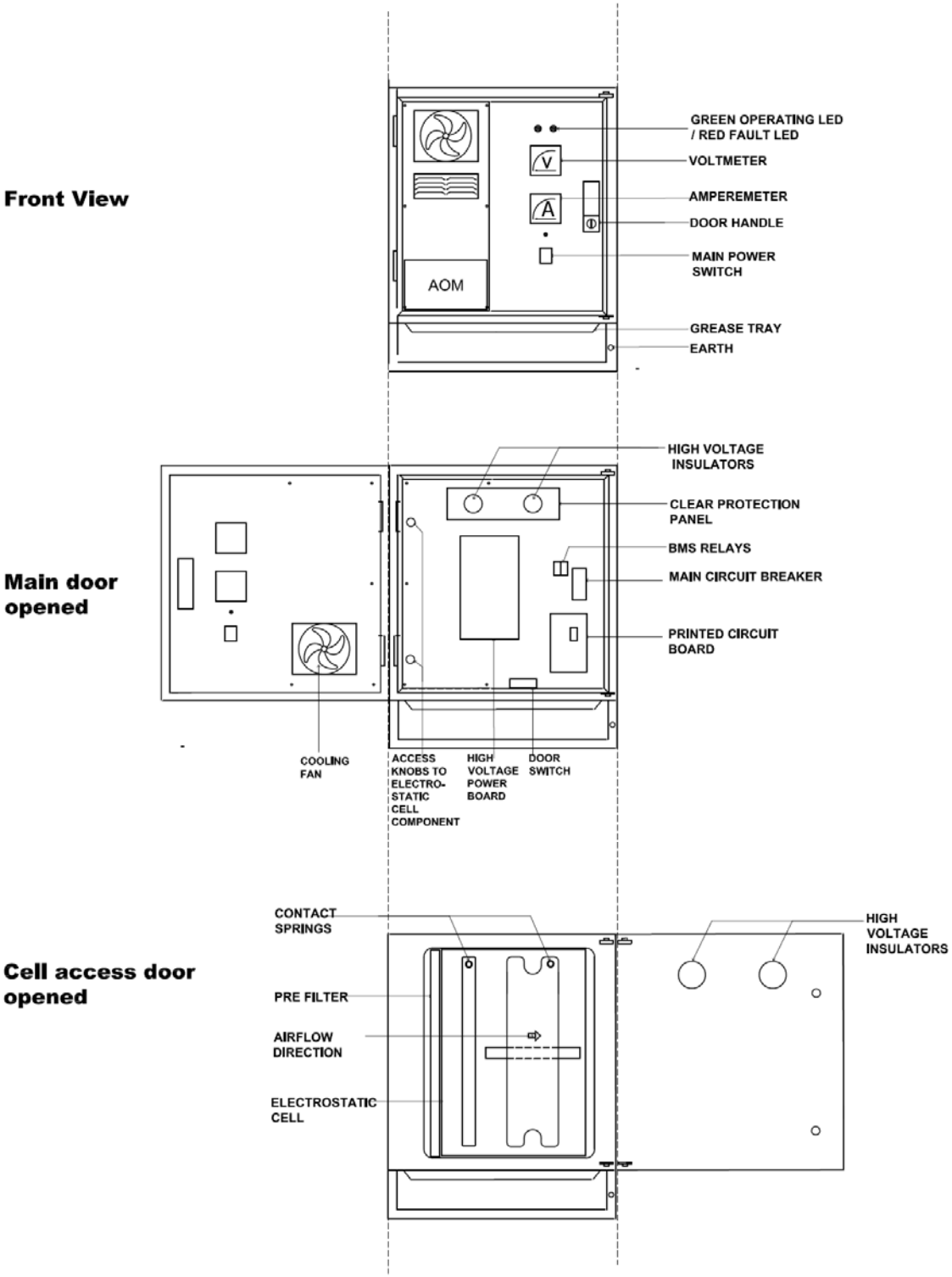
4.1.1 The EAN 600 Series electrostatic precipitator comes together with:

- 1 x 1 meter power cord
- 1 x set of keys
- 3 x Electrostatic cells
- 3 x mesh prefilters

4.1.2 List of potentially required replacement parts

EAN Series Electrostatic Precipitators	Voltmeter	ESP 010
	Amperemeter	ESP 020
	Indicator LED light (green)	ESP 030
	Indicator LED light (red)	ESP 031
	High voltage power board	ESP 040
	Printed circuit board	ESP 050
	Insulator	ESP 060
	EAN cell springs (L60mm, D19mm)	ESP 070
	EAN cell gasket (EAN 400 and EAN 600)	ESP 080
EAN Series ESP cells	Electrostatic Cell for EAN 200 / 400 / 600	ESP 100
	Prefilter EAN 200 / 400 / 600	ESP 101
	High voltage wire	ESP 120
	Cell Insulator	ESP 130

4.1.3 Schematic diagrams



5 GENERAL FUNCTION OVERVIEW

5.1.1 The EAN ESP unit works to filter grease and smoke particles within the kitchen exhaust.

Note: The EAN ESP unit works the most efficiently when a suitable preliminary grease filter is located within the kitchen exhaust hood. AOM recommends the use of **AOM Stainless Steel Honeycomb Filters** which have been tested to meet the requirements of AS1668.2-2012 section E5 regarding "**not deemed combustible" material in accordance with section AS1530.1**. The filters have also been tested to act as a flame barrier, thus stopping cooking flames from reaching flammable grease build up within kitchen exhaust hoods and ducting.

Note: Electrostatic precipitators aim at removing particles, which are responsible for a proportion of total odour discharges. However, gas odour particles remain in the exhaust downstream from the filters. AOM recommends the use of **AOM Ozone Generators** to inject ozone into the exhaust downstream from the ESP unit in order to mitigate the remaining odour. The overall AOM system has been **independently tested as per the requirements of AS1668.2-2012** and allows for the determination of "deemed airflow rates" and the definition of engineered kitchen exhaust discharge solutions.

5.1.2 Based on the different components, the EAN ESP unit functions as follows

- The **prefilter** acts as a barrier for large grease and other particle material from entering into the electrostatic filter.

- The **electrostatic cells** which function as follows:
    - High Voltage 13 kV tungsten ionising wires which are spring mounted within an aluminium frame distribute an electrical charge to particle matter.
    - Equally spaced low voltage collection plates attract the charged particles. The particles slide down the plates into the tray below.

- The electrostatic cells receive high voltage from the EAN ESP unit through **the connection insulators** located within the unit door. The connection between the cell and the insulator is done using connecting springs located on the ESP cell. The connection between the cells within the unit is done using connecting plates and springs located on the ESP cells.

- A removable **grease tray** collects grease and particle matter that slides down the aluminium plates.

- The EAN ESP unit door is equipped with:
    - Lock and door handle to open the door and access the unit electronics
    - Voltmeter indicating the voltage received by the unit
    - Amperemeter indicating the consumed amperage of the unit (see below for the recommended amperage values)
    - ON/OFF switch and indicator lights: Green LED light indicates unit is on, RED LED light indicates that the unit requires cleaning and / or servicing
    - In built cooling fan: ensures that the electronics remain at a constant temperature

6 CERTIFICATION AND TESTING

6.1.1 Electrostatic filters are and proven and widely used filtration method for kitchen exhaust. ASHRAE Systems & Equipment 1996 testing results concluded that "Electronic air cleaners can be highly efficient filters using electrostatic precipitation to remove and collect particulate contaminates such as dusts, smoke, and pollen. The designation electronic air cleaner denotes a precipitator for HVAC air filtration. This type of air cleaner can remove and collect contaminates with an average efficiencies up to 98%, when tested in accordance with ASHRAE Standard 52.1.

6.1.2 The AOM FILTRAIR system is currently the only system on the market that has been tested and certified by a recognised Australian agency to filter commercial kitchen exhaust. The **University of Sydney carried out efficiency testing on a Type 4 cooking exhaust as per AS1668.2-2012**: *High grease, medium heat producing equipment such as countertop barbecues and gas fired deep fat fryers* (certificate available on request).

6.1.3 Tests were also carried out on a double pass setup (two electrostatic filters in series) and results were situated out of the testing protocol range (range was between 0.5-900 micron). These independent testing results place AOM Australia at the forefront of kitchen exhaust filtration in Australia and New Zealand. No other kitchen exhaust hood on the market is able to independently certify a filtration efficiency specific to kitchen exhaust airflows.

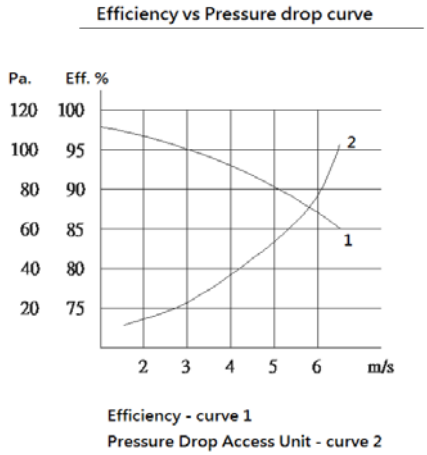
6.1.4 The laboratory test results have been confirmed by in-situ tests. Independent test were carried out during high volume cooking sessions (lunch) at a heavy type 4 cooking tenancy (gas chargrilling of steaks, meat, burgers, bacon). Particle sampling was undertaken before and after an AOM EAN Series electrostatic precipitators with a face velocity of 2.5 m/s and concluded:

*These results indicate that the kitchen exhaust treatment systems tested are in our opinion capable of achieving an equivalent **filtration efficiency of at least 98%.** This is assuming regular maintenance is carried out to ensure the systems are operating correctly.*

6.1.5 Note: Defined testing ranges follow typical particle sizes for the exhaust emissions from kitchen exhausts as defined in AIRAH Technical Bulletin 2016: Fire Safety Kitchen Hood Exhaust Systems:

- Smoke: up to 0.5 micron
- Grease steam: 0.5 – 6 micron
- Grease splatter: greater than 6 micron

6.1.6 AOM EAN Series Electrostatic Precipitators manufacture filtration efficiency tests were carried out on an EAN 200 electrostatic precipitator based on the efficiency rate test method **US Environmental Protection Agency (EPA) / Taiwan Environmental Protection Bureau standard**. Testing was carried out on 'Chinese cooking type' oil smoke (testing range between 0.01 – 10 micron) as a testing sample at different speeds through the filter (**equivalent to a heavy Type 4 cooking**). Filtration efficiency and resistance of the filter was determined for these different speeds as shown on the following graph.



Efficiency - curve 1
Pressure Drop Access Unit - curve 2

6.1.7 AOM EAN ESP filters are independently certified to the following:

- CE certified to **European Directive 2004/108/EC for electromagnetic compatibility** (certificate available on request).

- **TUVReinland tested and certified** for conducted emissions and radiated emissions based on FCC Part 18.

6.1.8 Independent odour emissions testing of **AOM Electrostatic filtration and Ozone injection** equipment installed at a McDonald's restaurant by a NATA-Accredited TOU Sydney Laboratory to AS/NZS4323.3:2001 Standard found that the AOM system had:

- A lower limit odour destruction efficiency of 69%
- An upper limit odour destruction efficiency of 86.6%
- A mean odour destruction efficiency of 79.6%

7 INSTALLATION GUIDELINES

7.1 General

7.1.1 Only qualified personnel should install the EAN ESP unit.

7.1.2 Personnel should have a clear understanding of these instructions and all applicable local and national building and fire codes.

7.1.3 Personnel should be aware of general safety precautions.

7.1.4 Building Code of Australia guidelines should be followed for all hanging and supporting of the equipment.

7.2 Delivery and handover

7.2.1 Delivery of the equipment will be completed once the full invoiced amount has been received by AOM.

7.2.2 Delivery of the equipment will be completed to the address as indicated by the Client and by means of the agreed logistics.

7.2.3 Unless the client requests otherwise, the delivery will be ensured to the closest suitable access point, at which point the handover of the equipment is complete.

7.2.4 Alternatively, the client can organise to have the product picked up at an AOM warehouse, at which point, hand over is completed.

7.2.5 Unless otherwise mentioned, cost of delivery including freight and any additional handling costs (including crating), are not included in the AOM quoted price and will need to be organised once a delivery address is provided.

7.2.6 The equipment will be delivered at the agreed delivery date and following on from AOM Australia quality control testing on the equipment.

7.3 Receiving

7.3.1 Upon receiving the product, check to ensure all items are accounted for by referencing the delivery receipt or packing list.

7.3.2 Inspect each crate or carton for shipping damage before accepting delivery. Alert the carrier of any damage detected. The customer will make a notation of damage (or shortage of items) on the delivery receipt and all copies of the bill of lading which is countersigned by the delivering carrier.

7.3.3 If damaged, immediately contact your AOM Representative. Any physical damage to the Electostatic Precipitator after acceptance is not the responsibility of AOM.

7.4 Unpacking

7.4.1 Verify that all required parts and the correct quantity of each item have been received.

7.4.2 If any items are missing, report shortages to your local Representative to arrange for obtaining missing parts.

7.4.3 Confirmation of shipment(s) must be limited to only items on the packing list.

7.5 Storage

7.5.1 Units are protected against damage during shipment. If the unit cannot be installed and operated immediately, precaution needs to be taken to prevent deterioration of the unit during storage.

7.5.2 The user assumes responsibility of the unit and accessories while in storage. AOM will not be responsible for damages during storage.

7.5.3 The ideal environment for storage of the Electrostatic Precipitator is indoors, above grade, in a clean, dry atmosphere that is sealed from the elements. While in storage, inspect the equipment routinely and eliminate any possible sources of moisture, dirt or other accumulations.

7.6 Installation scenarios

Note: The EAN ESP filters can be fireproofed. Only the front panel access door needs to remain accessible.

7.6.1 AOM EAN ESP filters can be installed using different configurations based on the overall total airflow and the requirements of the filtration efficiency.

Single pass filtration
Single pass unit installed outdoors with a protective weather cover

Stacked
EAN 1200 configuration for high airflows

Double pass filtration
High contaminant exhaust &/or sensitive discharge point requires very high filtration efficiency

7.7 Installation

Note: When properly maintained, the Electrostatic Precipitator will ensure high efficiency filtration of smoke and grease particles. To maximise the unit's capacity, it is recommended to place the units as close as possible to the kitchen exhaust hoods and on the negative side of the fan, thus ensuring that grease is filtered prior. Grease build up in ducts and fans is both a health and safety hazard.

Note: The EAN ESP unit can be set up for the airflow from right to left or left to right. When ordering the unit, specify the airflow direction to the AOM Representative.

7.7.1 The EAN ESP unit is designed to be positioned within the kitchen exhaust duct run.

7.7.2 The ideal installation position is as close as possible to the kitchen exhaust hood. This is also the best position to maintain and clean the unit.

7.7.3 The EAN ESP unit should be installed in a position with easy access for cleaning purposes. See the maintenance space requirements on the above figures and the below requirements for access and cleaning.

7.7.4 If the EAN ESP unit cannot be installed next to the exhaust hood, connect the unit with a straight duct of a minimum of one metre on the inlet and outlet side, or if using a bend make sure it is fitted with veins. This will balance the air within the ESP unit.

7.7.5 The airflow volume and air velocity through the EAN ESP unit should be below the rated volume/velocity. See the above equipment specifications for recommended values and contact your AOM Representative for a review of the specific filtration requirements.

7.7.6 The EAN ESP unit should be installed in a horizontal position. The unit should not be installed upside down. If you have nominated an incorrect airflow direction then contact your AOM Representative and they will guide you through the steps to reconfigure the EAN ESP unit.

7.7.7 To ensure high filtration efficiency, the EAN ESP unit should be installed on the negative side of the fan. Air turbulence on the positive side of the fan may decrease the filtration efficiency of the unit.

7.7.8 The EAN ESP unit should be positioned with a minimum separation distance of 1 m from the fan.

7.7.9 **The EAN ESP maximum operating temperature is 70 degrees Celsius.** When working with high heat appliances such as solid fuel pizza ovens it is vital that:

- The exhaust air temperature of the exhaust does not exceed 70 degrees Celsius. Exhaust air which exceeds this temperature may need to be mixed with temperate air to decrease the temperature.
- The unit should not be located directly adjacent to the high heat appliance. As with all electrical appliances, excessive heat will result in failure of the electrical system. The unit's electrical cooling system requires temperate ambient air and the unit is to be installed in order to guarantee this.

7.7.10 Finally, it is recommended that the EAN ESP unit be wired up so that it is automatically powered when the exhaust fan is running.

7.7.11 The EAN ESP unit can be installed outside (on roof tops, along outside duct runs, etc.), however, the unit's electrical console needs to be covered by a weather proof box.

7.8 Access requirements

7.8.1 Access to the electrostatic filters needs to be guaranteed in order to ensure removal of the electrostatic cells for cleaning as well as maintenance and troubleshooting of the electrical console box.

7.8.2 All access requirements including panels, hatches, paths and working platforms need to be installed following applicable Occupations Health and Safety Guidelines.

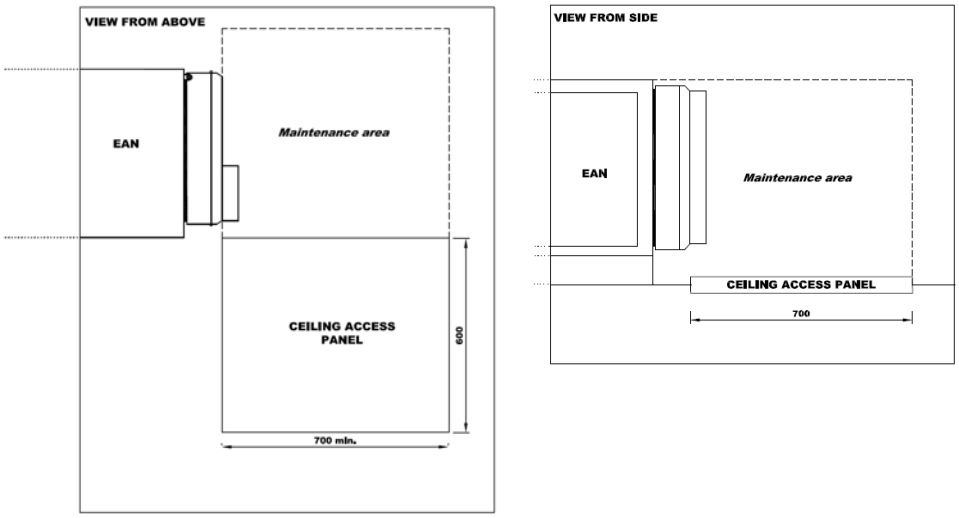
7.8.3 The required maintenances space as shown previously needs to be guaranteed in order to open the ESP unit door and to remove and replace the electrostatic cells.

7.8.4 A general access path of at least 1 m in width needs to be guaranteed from the point of entry to the building to the point of servicing the EAN ESP unit.

7.8.5 The following access requirements need to be guaranteed for different ESP unit locations.

7.8.6 EAN ESP unit **installed in a ceiling space and accessible via a ceiling access panel**. This implies that the EAN unit is positioned directly on top of the ceiling and that the unit can be serviced without having to enter the ceiling space.

- The access panel needs to be installed following applicable Occupational Health and Safety Guidelines.
- The access panel needs to guarantee a minimum load of 100 kg.
- The access panel needs to guarantee minimum dimensions and be positioned as per the following figure.
- The maintenance area needs to be equipped with a working platform.



7.8.7 EAN ESP unit **installed in a ceiling space and requiring physical presence inside the ceiling space to be serviced.** This implies that the EAN unit is positioned away from the access panel to a point where the service technician needs to physically enter the ceiling cavity to service the machine.

- The access panel to the ceiling space needs to meet the above requirements.
- A secure access path needs to be guaranteed between the access panel and the EAN ESP unit.
- A secure working platform needs to be placed in front of the unit.

7.8.8 EAN ESP unit **installed along an open duct,** either indoors or outdoors. This generally implies that the EAN ESP units are visible and are located at a certain height that may require the use of a removable working platform (type scissor lift). The available space directly below the EAN ESP unit doors needs to ensure that a safe working platform can be installed in order to service the units.

7.8.9 EAN ESP unit **installed in a plant room.** An access path from the plantroom entry point to the EAN ESP unit door of a minimum width of 1 m and the minimum door maintenance space in front of the ESP unit's door as shown in the above figures need to be guaranteed. Should the plantroom be located above level 1, an access lift is recommended in order to decrease the time required for servicing.

7.8.10 EAN ESP unit **installed on a rooftop.** The overall access from the building entry point to the EAN ESP unit needs to follow the previous recommendations. Access using vertical ladders should be limited to a maximum of 1.5 m in height, since a service technician will need to carry clean and dirty ESP cells weighing between 10-15 kg.

7.9 Electrical connection

Warning: Though the EAN ESP unit is a plug in and play, it is recommended that the overall electrical installation be carried out by a licenced electrician.

7.9.1 Plug the generator electrical lead to a 10 amp circuit power point.

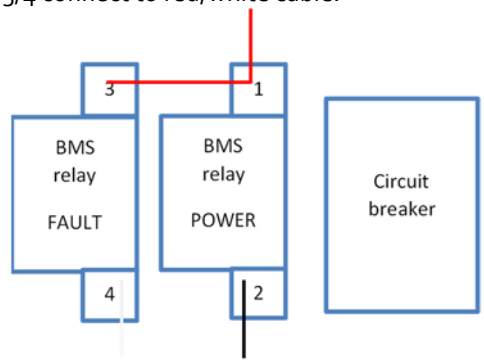
7.9.2 The power point should be interlocked with the fan switch. When the exhaust fan switch is activated, the voltmeter should indicated 240 Volt.

7.10 BMS connection

7.10.1 The EAN ESP unit is equipped with two BMS relays within the electrical console (see above figures) which should be connected used a 4 core electrical cable.

7.10.2 The information relayed as well as the AOM standard cable connections are:

- POWER: use connection points 1/2 to connect to red/black cable.
- FAULT: use connection points 3/4 connect to red/white cable.



7.11 Prior to Powering the unit ON

7.11.1 AOM completes a full system test prior to dispatch of the equipment, meaning that the EAN ESP unit can be plugged in and used immediately.

7.12 Powering the unit ON

7.12.1 Press the switch ON-OFF to ON. The red LED light will switch on for a few seconds, then the operating green LED will illuminate.

7.12.2 A buzzing sound will indicate that high voltage is running through the electrostatic cells.

7.12.3 The amperemeter will indicate the amperage the unit is drawing in milliamps. For an EAN 600 the range is:

- Min: 0.2 amps

- Max: 0.8 amps
- Default factory setting: 0.7 amps

7.12.4 AOM will dispatch the EAN ESP unit programmed on the default factory setting. Any modifications to the amperage of the unit should be done in consultation with your AOM Representative.

8 OPERATION AND MAINTENANCE

8.1 Prior to cooking start

8.1.1 AOM recommends however that **full mechanical commissioning** should be completed prior to cooking in order to ensure that design airflows are respected so that the ESP unit operates within the design capacity.

8.2 Cleaning

Note: An AOM cleaning protocol corresponding to the purchased EAN Series Electrostatic Precipitator is attached to this document and is to be followed by the designated cleaning company.

AOM Australia can provide cleaning and maintenance specifically tailored to the requirements of the filtration equipment and to the cooking type. Please contact your AOM Representative to organise this service.

Note: **Cleaning of the electrostatic precipitators generally requires the additional purchase of replacement cells and potentially prefilters**.

AOM Australia provides a discounted package price for spare cells and pre filters when: 1. These are purchased together with the EAN ESP unit or; 2. These are purchase if an AOM cleaning contract is signed.

It is essential that the end user be made aware of this requirement.

8.2.1 Cleaning and periodic maintenance is vital to ensure optimal performance of the AOM EAN units and minimise service requirements.

8.2.2 In order to ensure efficient cleaning of the filtration equipment (electrostatic cells and potentially the pre filters), it is recommended that spare sets of filters be purchased. Please contact your local AOM Representative to receive further information.

8.2.3 Every cooking style is different, however on average the following cleaning schedule applies. These are based upon standard restaurant opening hours:

- Light cooking: every six weeks
- Medium cooking: every four weeks
- Heavy cooking: every two weeks or weekly for charcoal/ solid fuel cooking.

Warning: The electrostatic precipitators use high voltage to capture grease and smoke particles. The removal of the electrostatic cells is to be carried out by a trained professional.

Warning: If periodic cleaning is not carried out on the EAN unit, this causes additional strain on the unit components and may cause components to fault. As soon as the red LED indicator light is ON, the unit cells need to be cleaned.

The AOM limited warranty on the EAN unit will be void if periodic maintenance of the EAN unit is not guaranteed.

It is essential that the End User be made aware of the O&M requirements related to the EAN ESP unit.

If the red LED indicator light switches on systematically between cleaning regimes the cleaning schedule should be adjusted accordingly.

8.2.4 As soon as the red light illuminates, the unit cell needs to be cleaned. If the EAN ESP unit is not visible, AOM proposes a remote indicator that can be installed in the kitchen and linked to the EAN units.

8.2.5 When cleaning the AOM equipment, do not use caustic chemical. The chemical could damage the aluminium ESP cell.

8.3 Troubleshooting

Note: All trouble shooting should be performed by qualified personel and extreme caution should be used when working on the EAN ESP unit electrical boards.

Problem: The EAN ESP unit does not power ON (no green LED light/ no voltage)	
Have the electrical connections including the fan interlock been done as per AOM specifications?	Check 240 V power reaches the unit when the fan is switched ON
If 240 V power reaches the unit, is the fuse continuity on the PCD assured (red light on the PCB)?	If not, replace the fuse If yes, the issue is with the PCB which is faulty and needs to be replaced.
Problem: The EAN ESP unit powers ON but the amperage fluctuates and does not settle to a fixed amount	
Has the unit been properly cleaned and/or is the red LED light showing on the door?	The EAN ESP unit needs to be cleaned as the buildup of grease and other contaminants has affected the electrical connections of the unit.
Have the cells been removed and replaced within the unit?	If yes, the connections between the EAN unit and the cell, as well as between the cells need to be checked as follows: - The EAN ESP unit insulators situated on the door are free from grease - The cells are equipped with the required springs and gaskets and all the connections are ensured.
Problem: The EAN ESP unit powers ON but the amperage fluctuates and does not settle to a fixed amount – an electrical discharge can also be heard within the unit.	
Have the cells been removed and replaced within the unit?	If yes, the cells need to be checked for any visible damage, particularly in the case where aluminimum plates are bent and touching.

Has a cell been damaged?	If yes, attempt to fix any mechanical damage to the cells or replace the cell with another clean cell.
Problem: The EAN ESP unit powers ON but no amperage is shown on the amperemeter	
Was this observed before or after the changeover of electrostatic cells?	If after, one of the cells has a fault. Remove the cells and review the cells including checking that the the high voltage wires are all attached. If no visible damage to the cells, it is a problem with a cell insulator and the cells need to be tested.
If this has occurred spontaneously, has the EAN ESP unit been periodically cleaned?	If no, the unit will need to be cleaned and a full service carried out.
If this has occurred spontaneously and the EAN ESP unit been periodically cleaned, then	The issue is with the EAN ESP high voltage board which needs to be replaced.
Problem: The unit is working corectly, but sparking can be heard	
Has the EAN ESP unit been periodically maintained?	If no, the unit will need to be cleaned. If yes, this is generally caused by larger particles been broken down in the EAN ESP unit. Contact your AOM Representative if the noise persists.

9 WARRANTY AND CONTACTS

9.1 Product Warranty

9.1.1 AOM provides a limited warranty for metropolitan areas in each state of Australia subject to the points detailed hereunder.

9.1.2 To validate the warranty, the EAN ESP unit shall be installed and maintained as per AOM specifications.

9.1.3 The warranty period begins at the date of dispatch of EAN ESP unit.

9.1.4 An EAN ESP unit is warranted to be free from defects and/or workmanship for a period of one (1) year from the date of dispatch.

9.1.5 A spare part is warranted to be free from defects and/or workmanship for a period of ninety (90) days from the date of dispatch.

9.1.6 If a client is not able to prove that the equipment has been cleaned and maintained as per AOM requirements, this may be cause to void the warranty. To this effect, it is recommended that maintenance logbook be kept on the premises.

9.1.7 The warranty for new equipment and spare part covers the repair or replacement of the defective part and includes labour.

9.1.8 Any claim must be presented to AOM. No warranty repairs will be granted without AOM written consent.

9.1.9 The above limited warranty does not apply to damage resulting from accident, alteration, misuse, installations that are not conform to this specification, mishandling or if the serial number is removed or defaced. This extends to the EAN ESP unit electrostatic cells.

9.1.10 AOM quotes equipment in good faith according to data supplied by others. AOM cannot be held responsible for the following: product performance issues (excessive discharge of smoke, grease and odour) arising from duct design, fan selection, unknown type of cooking, air velocity and failure to perform maintenance procedures.

9.2 Contacts

9.2.1 For any questions concerning the information provided in these specifications, please contact your dedicated AOM Representative. Contact details can be found on the AOM website www.aomaus.com.au/Local-Contacts

9.2.2 For any servicing and maintenance issues please contact the AOM Australia Service Team on either 1300 903 088 or by sending an email to service@aomaus.com.au.

AOM OG35 OZONE GENERATOR
EQUIPMENT SPECIFICATIONS

Table of contents

1. DESCRIPTION

An electrostatic filter (AOM EAN-Series) treats solid particle contaminants within the airflow and therefore, the filter removes a proportion of the odour generated by the cooking process (smoke, fine grease particles). The remaining odour is a gas that needs to be treated with a strong neutralizer. Ozone is a well-known powerful disinfectant which will mitigate odour from the kitchen exhaust system.

The generator ozone outlet is connected to the exhaust duct after the exhaust hood. The ozone needs a minimum contact time with the odour to be able to oxidise the gas particles and reduce back to oxygen. Based on experience, a minimum two second contact time is required. The ozone generator can be installed without an electrostatic filter if the cooking only generates grease mist (little or no smoke).

2. GENERAL SPECIFICATIONS

OG 35 OZONE GENERATOR

MAX. TREATMENT AIR VOLUME
1750 L/s

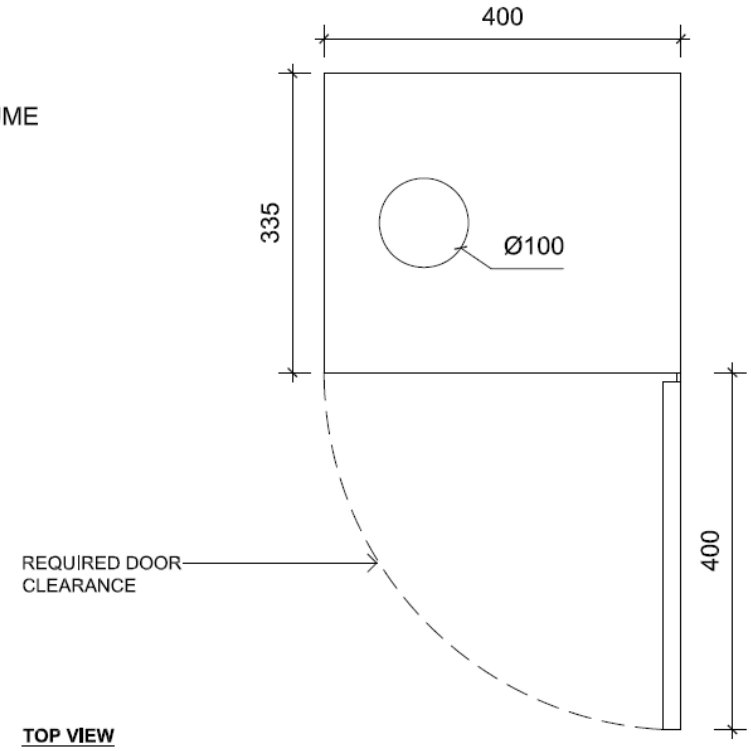
VOLTAGE (V)
240/1PH

POWER CONSUMPTION (W)
350

ELECTRICAL CONNECTION
1 X METRE CORD

WEIGHT (KG)
26

DIMENSIONS (MM)
400 W X 335 D X 600 H

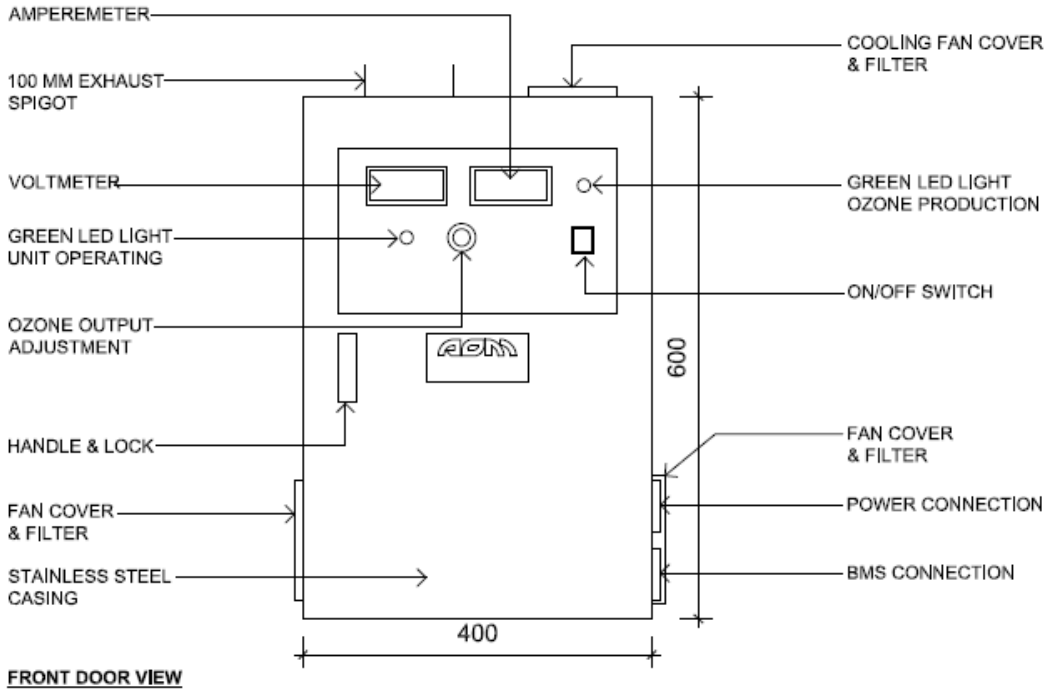


Notes:

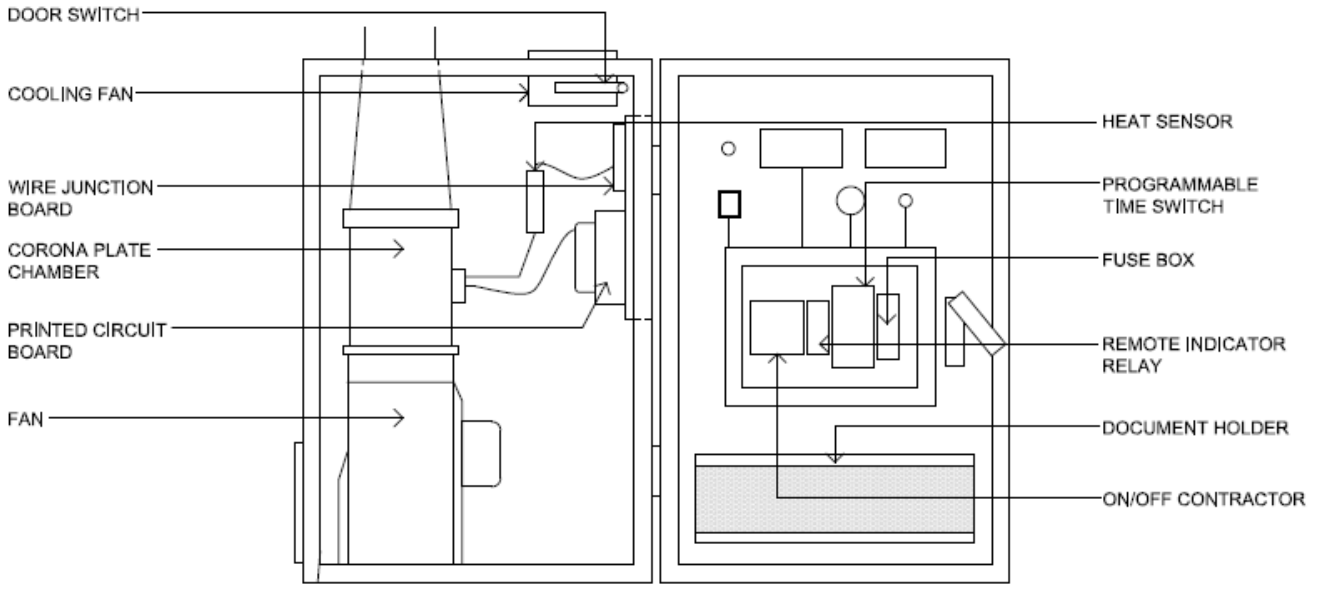
- Maximum treatment exhaust airflow is indicative only. Please contact your AOM representative prior to ordering.
- Ozone production is certified by the University of Sydney (test date 23/07/2013) to produce at least 35 g/hour of ozone. Certification is available upon request.
- Basic noise measurements were determined for an AOM OG Series unit at full ozone production. Tests were carried out in a quiet room environment (average 43 dB(A) with results determined on a 180 degree radius around the ozone generator at distance from the unit of: 1 m (average 53.4 dB(A)); 3 m (average 48.4 dB(A)); 6 m (average 47 dB(A)).

3. COMPONENTS

3.1.1 Schematic diagrams



FRONT DOOR VIEW



INTERNAL VIEW

3.1.2 The ozone generator comes together with:

- 1 x 1 meter power cord
- 2 x hanging dynabolts
- 1 x set of keys
- 1 x BMS connector
- 1 x PCB fuse

3.1.3 List of potentially required replacement parts

Part Name	Code
Voltmeter	OG 010
Ammeter	OG 020
Green LED light	OG 030
Red LED light	OG 031
On/Off switch	OG 035
ON/Off Contractor	OG 036
Ozone adjustment dial	OG 037
Cooling fan	OG 040
Cooling fan filter dust cover	OG 041
High voltage printed circuit board	OG 060
Main fan	OG 070
Main fan dust cover	OG 071
BMS relay	OG 080
Timer	OG 085
10amp ceramic fuse	OG 090
Fuse box	OG 091
Corona plates (located within the chamber)	OG 100
Corona plate chamber	OG 102

4. INSTALLATION GUIDELINES

4.1 General Safety information

4.1.1 Only qualified personnel should install the ozone generator.

4.1.2 Personnel should have a clear understanding of these instructions and all applicable local and national building and fire codes.

4.1.3 Personnel should be aware of general safety precautions.

4.1.4 Building Code of Australia guidelines should be followed for all hanging and supporting of the equipment.

4.2 Delivery and handover

4.2.1 Delivery of the equipment will be done once the full invoiced amount has been received by AOM Australia.

4.2.2 Delivery of the equipment will be done to the address as indicated by the Client and by means of the agreed logistics.

4.2.3 Unless the client requests otherwise, the delivery will be ensured to the closest suitable access point, at which point the handover of the equipment is complete.

4.2.4 Alternatively, the client can organise to have the product picked up at an AOM warehouse, at which point hand over is completed.

4.2.5 Unless otherwise mentioned, cost of delivery including freight and any additional handling costs (including crating), are not included in the AOM quoted price and will need to be organised once a delivery address is provided.

4.2.6 The equipment will be delivered at the agreed delivery date and following on from AOM Australia quality control testing on the equipment.

4.3 Receiving

4.3.1 Upon receiving the product, check to ensure all items are accounted for by referencing the delivery receipt or packing list.

4.3.2 Inspect each crate or carton for shipping damage before accepting delivery. Alert the carrier of any damage detected. The customer will make a notation of damage (or shortage of items) on the delivery receipt and all copies of the bill of lading which is countersigned by the delivering carrier.

4.3.3 If damaged, immediately contact your AOM Representative. Any physical damage to the ozone generator after acceptance is not the responsibility of AOM Australia.

4.4 Unpacking

4.4.1 Verify that all required parts and the correct quantity of each item have been received.

4.4.2 If any items are missing, report shortages to your local representative to arrange for obtaining missing parts.

4.4.3 Confirmation of shipment(s) must be limited to only items on the packing list.

4.5 Storage

4.5.1 Units are protected against damage during shipment. If the unit cannot be installed and operated immediately, precaution needs to be taken to prevent deterioration of the unit during storage.

4.5.2 The user assumes responsibility of the unit and accessories while in storage. AOM Australia will not be responsible for damages during storage.

4.5.3 The ideal environment for storage of the ozone generator is indoors, above grade, in a clean, dry atmosphere that is sealed from the elements. While in storage, inspect the equipment routinely and eliminate any possible sources of moisture, dirt or other accumulations.

4.6 Installation

Note: Prior to installation, remove the cover sheet over the exhaust spigot and check that the Ozone Generator corona plates have not been damaged during transport.

If they have been damaged, immediately contact your AOM representative to organise the replacement of the plates.
All AOM Ozone Generators are quality controlled in AOM warehouse prior to shipping and are certified to be fully functional.

Photo: Example of broken corona plates / Example of sound corona plates in an OG 35 unit.

Note: In order to achieve high efficiency odour mitigation and to decrease the risk of residual ozone discharge, a minimum of 2 seconds contact time is required between the ozone at the point of injection into the duct and kitchen exhaust prior to discharge. The position of the ozone generator as well as the subsequent duct dimensions need to consider this.

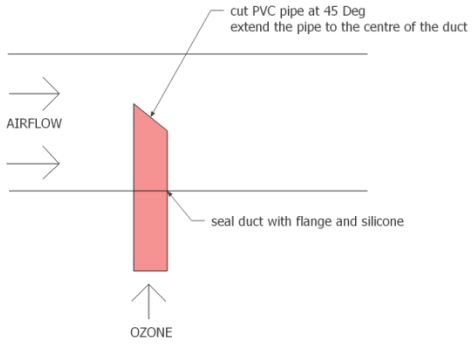
The ozone generator needs to be installed on the negative side of the fan.

The ozone generator is an electrical appliance and is to be installed indoors away from any potential source of water infiltration, air contamination from dust which will build up in the unit as well as grease contamination and any heat source resulting in the unit heating up. All these factors will result in fault situations which will not be covered by the warranty.

4.6.1 The ideal installation position is in the kitchen or in the store room with easy access for servicing. Always leave the generator free of material that can restrict the unit airflow.

4.6.2 Install the ozone generator on a wall with the two supplied screws. Two lags have been pre-drilled at the top of the unit.

4.6.3 Cut one 110mm hole in the exhaust duct side or top, as close as possible to the exhaust hood outlet or after the AOM ESP filtration unit. Fit a PVC 100 mm flange in the hole. Connect the duct flange to the generator ozone outlet with a 100mm PVC plumbing pipe. Make sure the pipe is installed within the duct as per the following figure. Seal the pipe with silicone.



4.6.4 A maximum of five metres of PVC pipe is recommended.

4.6.5 The kitchen exhaust discharge point could be at roof or street level. Discharges should follow the requirements of AS1668.2-2012.

4.6.6 AOM recommends that the ozone generator be interlocked with the exhaust fan in order to ensure that the generator is powered ON only when cooking occurs. The generator has an in-built timer that can be programmed for the injection of ozone during heavy cooking (lunch/diner time). The other solution is to fit a two speed controller to the exhaust fan. This equipment will switch the ozone generator ON only when the fan is on high speed.

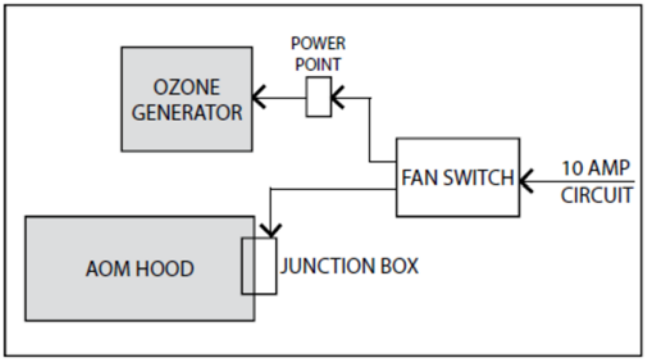
4.7 Electrical connection

Note: When ozone generators are integrated within the AOM hood structure, they are hard wired to the ESP console box. Therefore, no specific electrical connection is required other than the connection to the ESP Console box. Please refer to the AOM HC Series kitchen exhaust O&M manual for more information

4.7.1 In situations where the ozone generator is supplied as a stand-alone device (as opposed to being placed within an AOM HC Series Hood), a specific electrical connection is required.

4.7.2 Plug the generator electrical lead to a power point. The power point should be interlocked with the fan switch. When the exhaust fan switch is activated, the voltmeter should indicated 240 Volt. Press the switch ON-OFF to ON. The operating green LED should be on.

4.7.3 The unit should be automatically powered when the exhaust fan is running as per the following schematic wiring diagram.



4.8 BMS and AOM Remote indicator connections

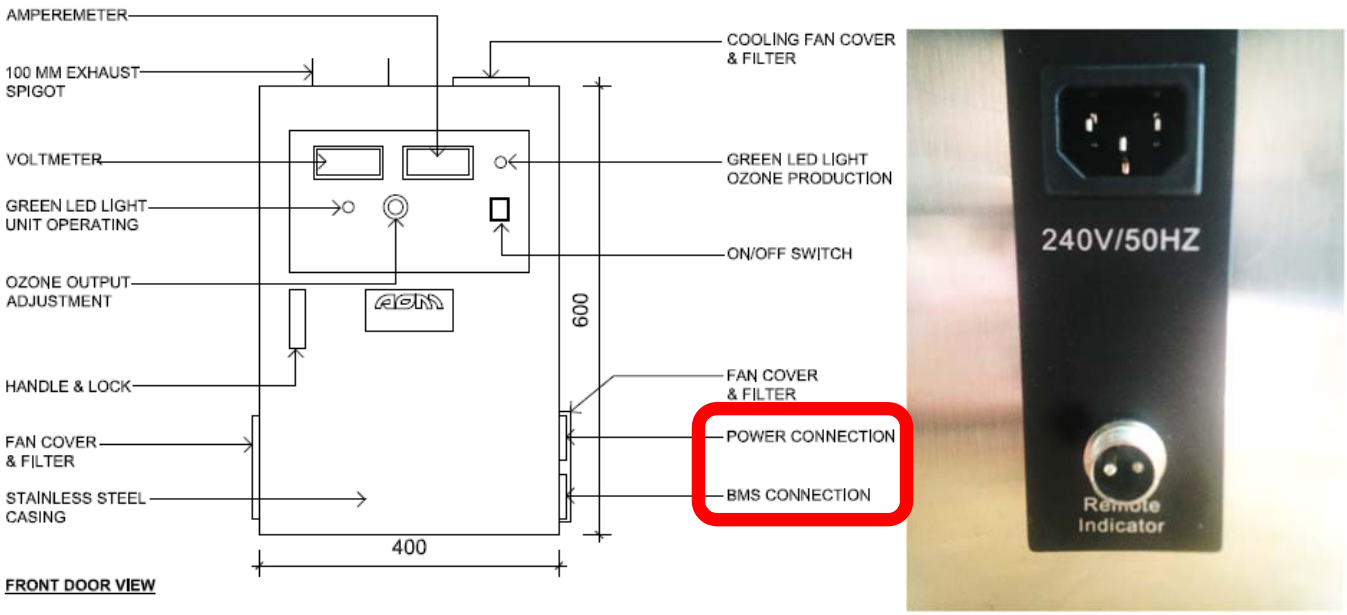
4.8.1 The ozone generator comes equipped with a male BMS connection point as shown below as well as a female connector in order to enable BMS and AOM remote indicator connections.

4.8.2 For the AOM Remote Indicator connection, the RED / BLACK cable combination is to be used for this connection. The information relayed is:

- Power ON
- Fault

4.8.3 For a BMS connection, the information relayed is:

- When the power is ON and ozone is being produced (the ozone dial has been turned up): Normally Closed (N/C)
- When the unit is switched OFF or ozone is not been produced (either the ozone dial is at 0 or the unit is fault): Normally Open (N/O)



4.9 Powering the unit ON

Note: Only start the production of ozone once the generator has been connected to the duct and when the exhaust fan is running.

4.9.1 Make sure that the Ozone output adjustment is at 0%.

4.9.2 Power the unit ON by switching the ON/OFF switch. The green LED light will switch on, the voltmeter will read 240 V and the ammeter will read 0.4 amps.

4.9.3 Using the ozone output adjustment, start producing ozone. The green LED light for ozone production will switch ON and the amperage will increase.

4.9.4 Once the ozone production is set at 100%, the amperage should reach between 1.6-1.8 amps.

4.10 Setting the timer

4.10.1 Time adjustment – before setting the timer, the clock needs to be adjusted to the local time.

- At first the timer is in 24 hour mode. To switch to 12 hour mode press the clock symbol for 5 seconds.
- Press and hold "clock" simultaneously with "D+" to enter the day, with "H+" to enter the hour, with "M+" to enter the minutes.

4.10.2 Setting the timer – before setting the timer, the clock needs to be adjusted to the local time

Step	Key	Programming
1	Press P	Setting 1 ON is displayed – this corresponds to the start time for the first shift during which the ozone generator should operate.
2	Press D+	Select the days of the week (if the ozone generator is to operate every day, skip this step)
3	Press H+ / M+	Set hours and minutes
4	Press P	Setting 1 OFF is displayed – this corresponds to the stop time for the first shift during which the ozone generator should operate
5	Press D+	Select the days of the week (if the ozone generator is to operate every day, skip this step)
6	Press H+ / M+	Set hours and minutes – At this stage the shift 1 is defined
7	Repeat steps 2-6	Set shifts 2-10 ON/OFF times as required
8	Press "clock"	End – If 10 shifts are not required press the "clock" key until the end

Notes:

- Use "reset" to cancel the input
- Press "P" to check the programming
- Press "Manual" to set the timer ON / OFF or in Automatic mode (Automatic mode can start in ON Automatic or OFF Automatic)
- The ozone generator Main ON / OFF switch on the front panel should be in OFF (O) position to use the timer.

5. OPERATION AND MAINTENANCE

5.1 System Test

The following steps should be carried out to test the functioning of the Ozone Generator setup:

1. Switch the exhaust fan on.
2. Power reaches the unit and the unit voltmeter reads 240 volts. The operating green LED switches ON
3. Press the switch ON-OFF to ON (I). Power has now reached the ozone generator fan and the ammeter reads 0.38 amps.
4. Adjust the ozone output for the needed level of injected ozone (0-35g/h). The ozone production green LED switches ON.
5. The ammeter indicates the current used by the generator for the selected ozone output. The amperage varies with varied ozone production to a maximum of between 1.6-1.8 amps
6. The unit will turn itself off when the exhaust fan is off.

5.2 Troubleshooting

Note: All trouble shooting should be performed by qualified personnel and extreme caution should be used when working on the ozone generator electrical circuits.

Problem: The ozone generator does not power ON (no green LED light/ no voltage)	
Have the electrical connections including the fan interlock been done as per AOM specifications?	Check 240 V power reaches the unit when the fan is switched ON
Is the fuse continuity assured?	Check the continuity of the fuse
Problem: One of the display units does not show a reading (voltmeter, ammeter, LED lights)	
Is there 240 V at the connection point?	If no, there is an issue with the wiring to the unit. If yes, the unit is faulty and needs to be replaced.
Problem: The ozone generator has power to it, but the fan does not work when the door ON/OFF switch is ON (I) – i.e. the ammeter reads 0 amp.	
Is the door switch working?	Open the ozone generator door and press down on the door switch.
Is there 240 V at the fan connection points?	If no, there is an issue with the wiring to the fan. If yes, the fan is faulty and needs to be replaced
Note: The unit has an integrated heat sensor which switches the unit off in case of overheat of the corona plates. This can happen is the fan becomes faulty and ozone continues to be produced	
Problem: The unit powers ON but the green ozone production LED light does not switch ON and the amperage does not vary when the ozone output adjustment is turned – no ozone is being produced.	
Is the timer switched on (red light on the timer)?	If yes, turn the timer off and carry out the test again. If no, the issue is with the PCB.
Is PCB fuse continuity assured?	If no, replace the fuse with the spare part provided. If yes, the issue is with the PCB which is faulty and needs to be replaced.

5.3 Maintenance and Cleaning

5.3.1 The AOM ozone generator requires very little cleaning or maintenance.

5.3.2 Check every month that the two front door LED lights are operating when the ozone generator is switched ON.

5.3.3 The fan filters need to be cleaned by removing them and rinsing them through hot water once a month.

6. WARRANTY AND CONTACTS

6.1 Product Warranty

6.1.1 AOM provides a limited warranty for metropolitan areas in each state of Australia subject to the points detailed hereunder.

6.1.2 To validate the warranty, the ozone generator should be installed and maintained as per AOM specifications.

6.1.3 The warranty period begins at the date of dispatch of the ozone generator.

6.1.4 A new ozone generator is warranted to be free from defects and/or workmanship for a period of one (1) year from the date of dispatch of the ozone generator.

6.1.5 A spare part is warranted to be free from defects and/or workmanship for a period of ninety (90) days from the date of dispatch.

6.1.6 The warranty for new equipment and spare part covers the repair or replacement of the defective part and includes labour.

6.1.7 A maintenance logbook should be kept on the premises.

6.1.8 Any claim must be presented to AOM Australia. No warranty repairs will be granted without AOM Australia written consent.

6.1.9 The above limited warranty does not apply to damage resulting from accident, alteration, misuse or if the serial number is removed or defaced.

6.1.10 The above limited warranty does not apply to damage caused by external contamination of the unit. This includes water damage, air contamination through dust build up in the unit, grease build up in the unit, excessive heat and an electrical surge.

6.1.11 AOM Australia quotes equipment in good faith according to data supplied by others. AOM Australia cannot be held responsible for the following: product performance issues (excessive discharge of smoke, grease and odour) arising from duct design, fan selection, unknown type of cooking, air velocity and failure to perform maintenance procedures.

6.2 Contacts

6.2.1 For any questions concerning the information provided in these specifications, please contact your dedicated AOM State Agent. Contact details can be found on the AOM website www.aomaus.com.au/Local-Contacts

6.2.2 For any servicing and maintenance issues please contact the AOM Australia Service team on either 1300 903 788 or by sending an email to service@aomaus.com.au.