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CAMLEY STREET KINGS CROSS

DISCHARGE OF PLANNING CONDITION NUMBER 14 &16

SUPPORTING DOCUMENTATION

29 AUGUST 2017

united living

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CAMLEY STREET KINGS CROSS

DISCHARGE OF PLANNING CONDITION NUMBER 14 &16

CONDITION 14: PRIOR TO USE OF THE DEVELOPMENT: A) DETAILS SHALL BE SUBMITTED TO AND APPROVED IN WRITING BY THE LOCAL PLANNING AUTHORITY, OF THE EXTERNAL NOISE LEVEL EMITTED FROM PLANT/MACHINERY/EQUIPMENT AND MITIGATION MEASURES AS APPROPRIATE. THE MEASURES SHALL ENSURE THAT THE EXTERNAL NOISE LEVEL EMITTED FROM PLANT, MACHINERY. EQUIPMENT WILL BE LOWER THAN THE LOWEST EXISTING BACKGROUND NOISE LEVEL BY AT LEAST 10DBA, AS ASSESSED ACCORDING TO BS4142: 1997 AT THE NEAREST AND /OR MOST AFFECTED NOISE SENSITIVE PREMISES, WITH ALL MACHINERY OPERATING TOGETHER AT MAXIMUM CAPACITY.

CONDITION 16: NOISE LEVELS FROM FIXED PLANT ASSOCIATED WITH THE DEVELOPMENT AT A POINT 1 METRE EXTERNAL TO SENSITIVE FACADES SHALL BE AT LEAST 5DB(A) LESS THAN THE EXISTING BACKGROUND MEASUREMENT (LA90), EXPRESSED IN DB(A) WHEN ALL PLANT/EQUIPMENT (OR ANY PART OF IT) IS IN OPERATION UNLESS THE PLANT/EQUIPMENT HEREBY PERMITTED WILL HAVE A NOISE THAT HAS A DISTINGUISHABLE, DISCRETE CONTINUOUS NOTE (WHINE, HISS, SCREECH, HUM) AND/OR IF THERE ARE DISTINCT IMPULSES (BANGS, CLICKS, CLATTERS, THUMPS), THEN THE NOISE LEVELS FROM THAT PIECE OF PLANT/EQUIPMENT AT ANY SENSITIVE FAÇADE SHALL BE AT LEAST 10DB(A) BELOW THE LA90, EXPRESSED IN DB(A).

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29.08.2016

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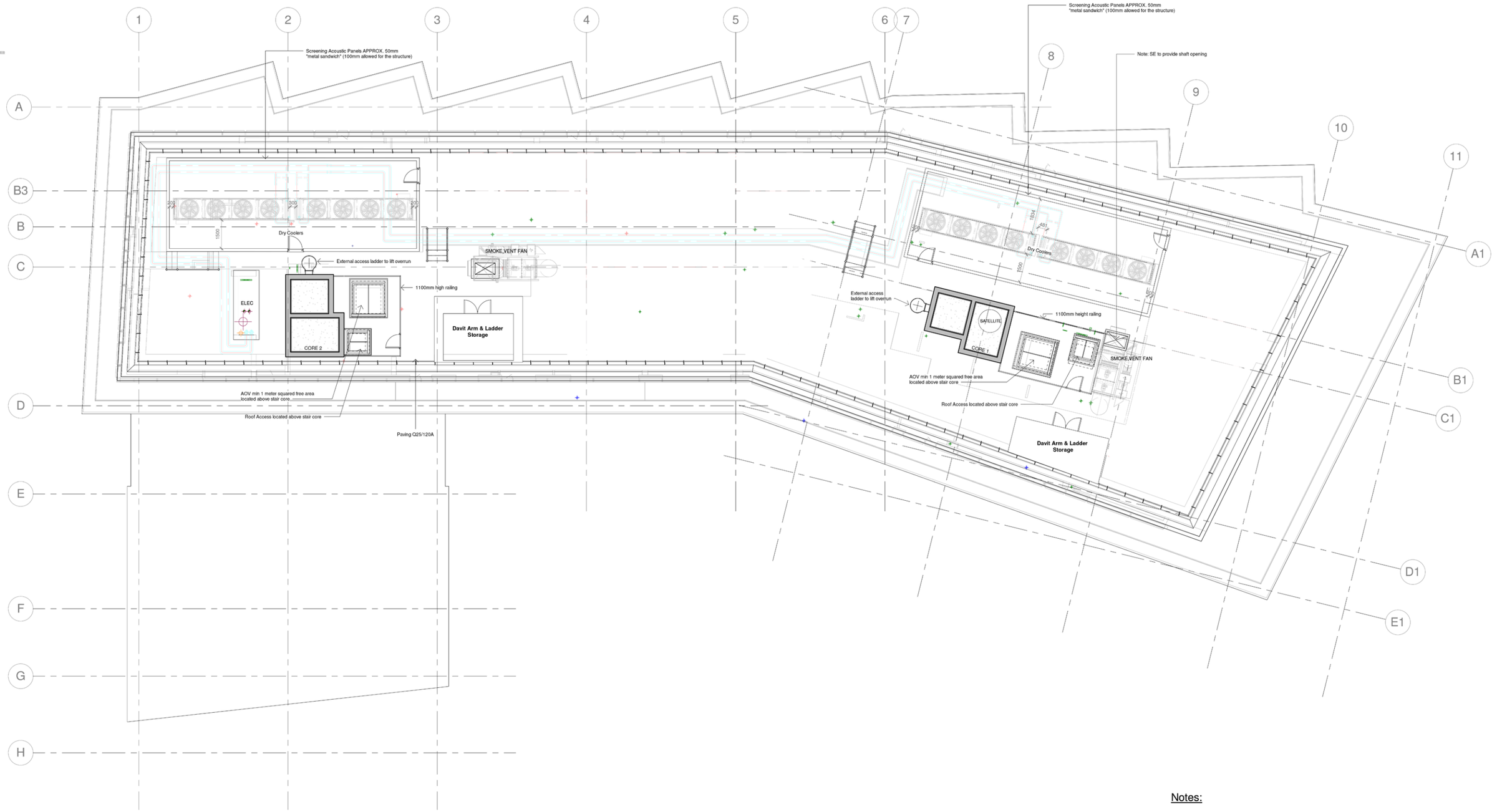
CAMLEY STREET KINGS CROSS

CONDITION No.14 &16

PART A - PROPOSED PLANT LOCATION DRAWINGS

Introduction:

This section covers all relevant drawings for the proposed external plant locations within the development. Selections in accordance with the approved planning consent. Ref 2014/2381/P (30.03.15)



Notes:

- MEP Layouts and dimensions TBC
- All access zones subject to MEP layouts
- Mansafe and railings TBC following final layout of roof
- Plate and padlock required to access hatches for security
- Davit arm & ladder storage requirements TBC
- Scope of wildflower roof TBC

This drawing must not be scaled.
Figured dimensions and levels to be used.
Any inaccuracies must be notified to the architect.
Detail drawings and large scale drawings take precedence over smaller drawings.

A1

Rev:		Chk'd:
A	First issue for comment	20.10.16
C1	Issue for construction	02.03.17

PRELIMINARY	
PLANNING	
DESIGN	
TENDER	
CONTRACT	
CONSTRUCTION	✓

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PDA Job No: 16071

SITE	ORG.	DRG NO. VOLUME	LEVEL	OR TYPE	DIS.	NUMBER	REV
	PDA	UI 12	A		A	(20)214	C1

Contract: 102 Camley Street Phase 2
Taylor Wimpey Central London

Title: Proposed Roof GA Plan

Scale: 1 : 100
Date: 22.09.14
Drawn: ED
Checked: MH

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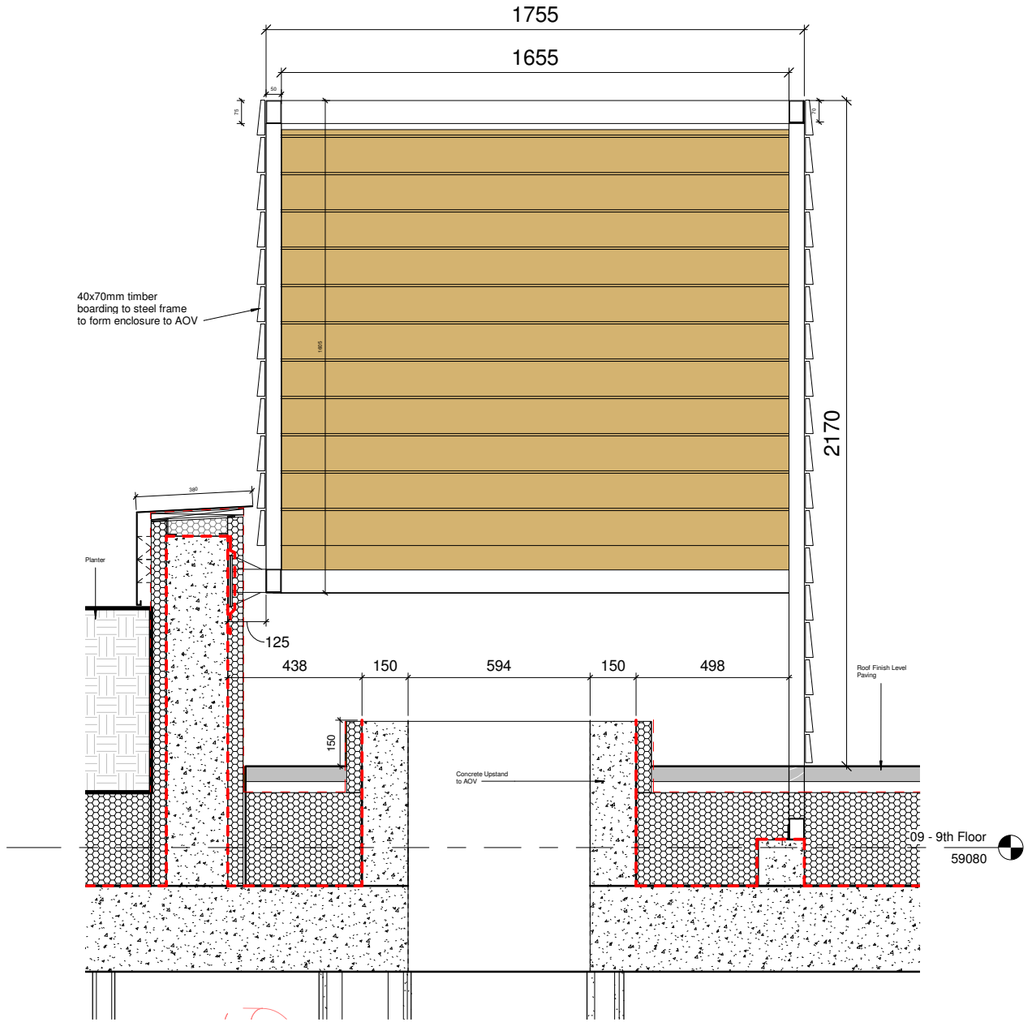
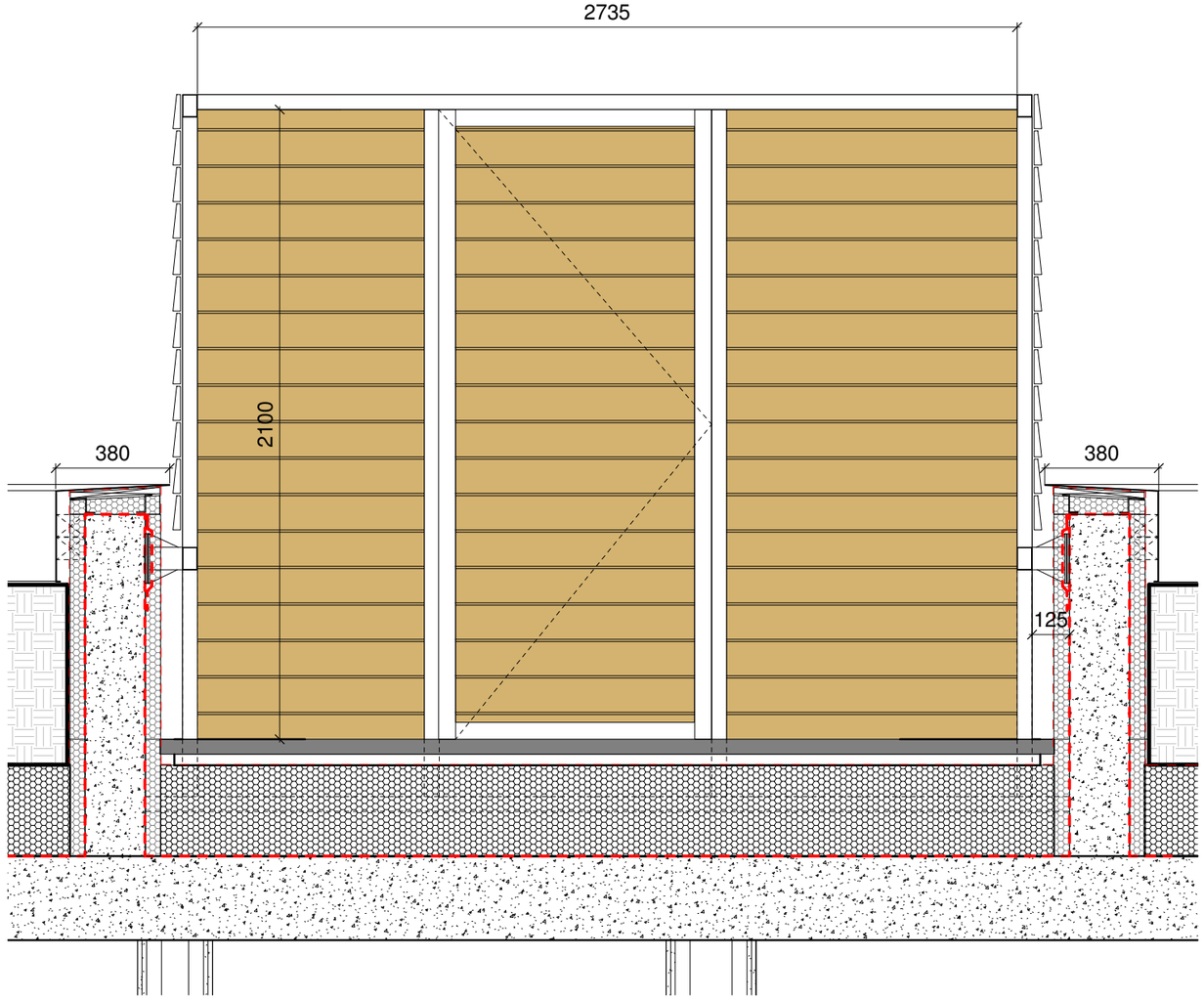
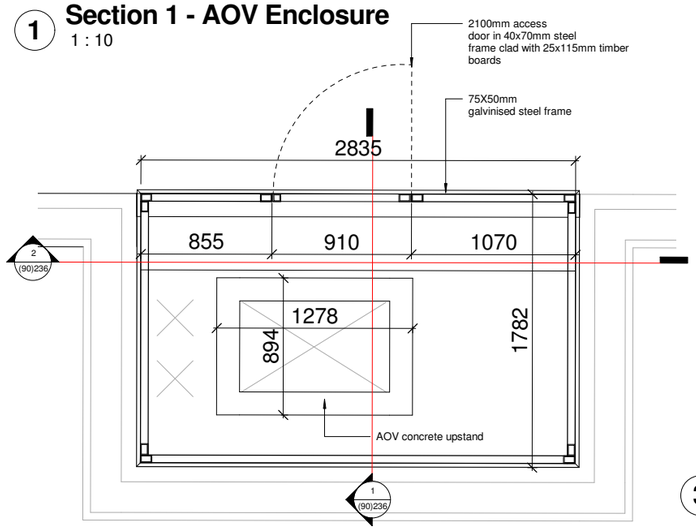


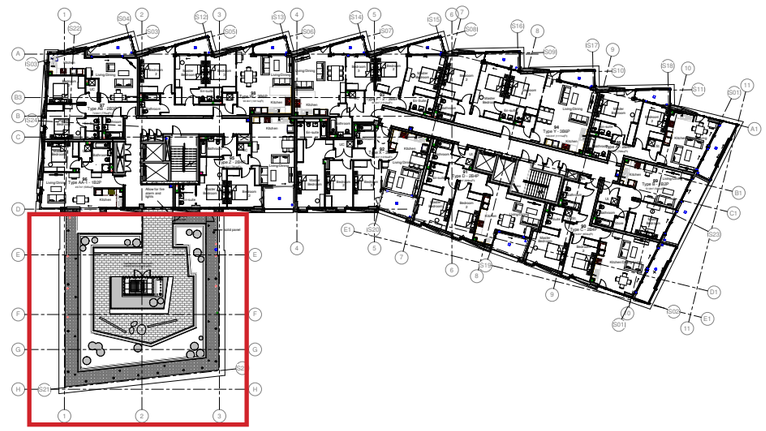
1 Section 1 - AOV Enclosure
1 : 10



2 Section BB
1 : 10



3 AOV Enclosure - Plan
1 : 20



This drawing must not be scaled.
Figured dimensions and levels to be used.
Any inaccuracies must be notified to the architect.
Detail drawings and large scale drawings take precedence over smaller drawings.

A1

Rev:		Chk'd:
C1	First issue for construction	27.04.2017

PRELIMINARY	
PLANNING	
DESIGN	
TENDER	
CONTRACT	
CONSTRUCTION	✓

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PDA Job No: 16071

SITE	ORG.	DRG NO.			DIS.		REV
	PDA	UI	09	A	A	(90)236	C1
		VOLUME	LEVEL	DR TYPE		NUMBER	

Contract: 102 Camley Street Phase 2
Taylor Wimpey Central London
Title: Timber Enclosure to AOV

Scale: As indicated
Date: 04/25/17
Drawn: Author
Checked: Checker

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CONDITION No.14 & 16

PART B - PLANT NOISE ASSESSMENT - CASS ALLEN

Introduction:

This section contains a Plant Noise Assessment that has been prepared by Cass Allen Associates Ltd for United Living Ltd. The assessment has been carried out in accordance with the requirements of noise and vibration related planning conditions that have been imposed on the development and relate to the mechanical plant at the site. Selections in accordance with the approved planning consent. Ref 2014/2381/P (30.03.15)

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Architectural & Environmental Acousticians

Noise & Vibration Engineers

PLANT NOISE ASSESSMENT

102 CAMLEY STREET, LONDON

UNITED LIVING (SOUTH) LTD

RP01-16413

PLANT NOISE ASSESSMENT

PROJECT:	102 CAMLEY STREET, LONDON
CLIENT:	UNITED LIVING (SOUTH) LTD
CLIENT ADDRESS:	MEDIA HOUSE AZALEA DRIVE SWANLEY KENT BR8 8HU
COMPANY ADDRESS:	CASS ALLEN ASSOCIATES BEDFORD I-LAB PRIORY BUSINESS PARK BEDFORD MK44 3RZ

DOCUMENT CONTROL:

REVISION	ISSUE DATE	REPORT BY	CHECKED BY	NOTES
0	18 August 2017	Sam Bryant, MPhys MIOA, Senior Acoustics Consultant	Adam Bamford, BSc MIOA DipIOA, Senior Acoustics Consultant	Initial issue

TABLE OF CONTENTS

1. INTRODUCTION

1.1 Cass Allen Associates has been instructed by United Living (South) Ltd to assess the acoustic design of a new development at 102 Camley Street, London.

1.2 The assessment has been carried out in accordance with the requirements of noise and vibration related planning conditions that have been imposed on the development and relate to mechanical plant at the site. The conditions are:

Condition 14

Prior to the use of the development:

a) Details shall be submitted to and approved in writing by the local planning authority, of the external noise level emitted from plant/machinery/equipment and mitigation measures as appropriate. The measures shall ensure that the external noise level emitted from plant, machinery/equipment will be lower than the lowest existing background noise level by 10dBA, as assessed according to BS4142:1997 at the nearest and/or most affected noise sensitive premises, with all machinery operating together at maximum capacity.

b) A post installation noise assessment shall be carried out to confirm compliance with the noise criteria and additional steps to mitigate noise shall be taken, as necessary. Approved details shall be implemented prior to occupation of the development and thereafter be permanently retained.

Condition 16

Noise levels from fixed plant associated with the development at a point 1 metre external to sensitive facades shall be at least 5dB(A) less than the existing background measurement (LA90), expressed in dB(A) when all plant/equipment (or any part of it) is in operation unless the plant/equipment hereby permitted will have a noise that has a distinguishable, discrete continuous note (whine, hiss, screech, hum) and/or if there are distinct impulses (bangs, clicks, clatters, thumps), then the noise levels from that piece of plant/equipment at any sensitive façade shall be at least 10dB(A) below the LA90, expressed in dB(A).

1.3 It can be seen from a comparison of Conditions 14 and 16 that there is some discrepancy between the requirements of these conditions. However, Condition 14 specifically refers to BS4142:1997 and this document was updated and replaced in 2014. Condition 16 is considered to be more in-line with the current guidance and, the Council clearly consider the limits provided in Condition 16 to be an acceptable design target. Additionally, the Decision Notice is dated March 2015 and as such BS4142:1997 had already been replaced and withdrawn at the time of release.

1.4 The limits given in Condition 16 have therefore been adopted in the assessment of mechanical plant at the site. As the intention of both conditions is to minimise the impact of the mechanical plant, it is considered that compliance with Condition 16 also means that the design element of Condition 14 may also be discharged.

1.5 Condition 14 also requires post installation testing of the mechanical plant. It is envisaged that this testing will be carried out at the appropriate time and will ensure that the plant installed is compliant

with the adopted project criteria. This approach has been discussed with a representative in the Council planning department and was considered appropriate.

1.6 This report contains technical terminology; a glossary of terms can be found at www.cassallen.co.uk/glossary.

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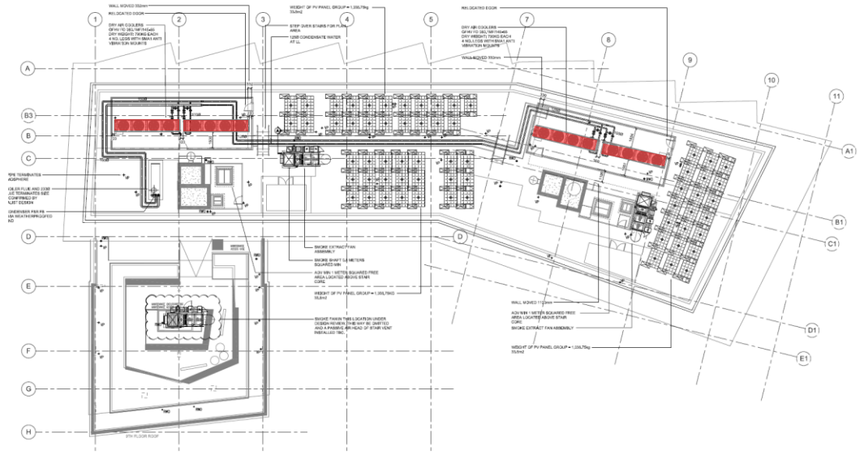
2. DEVELOPMENT DESCRIPTION

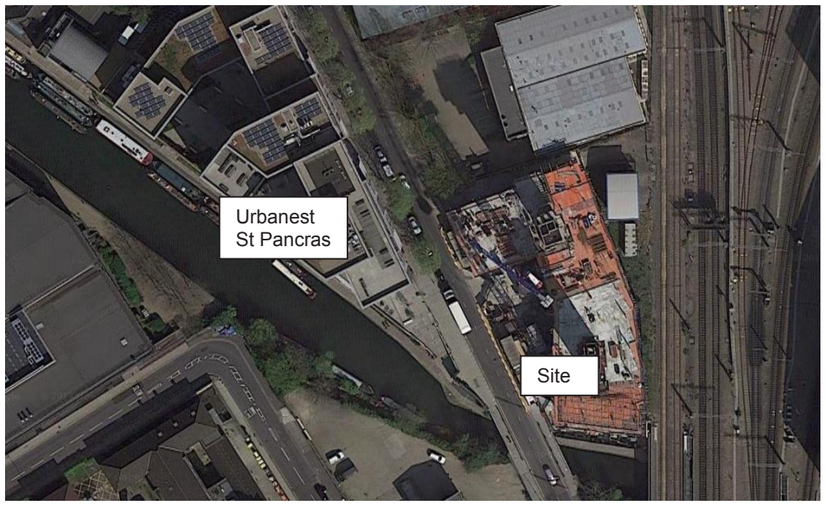
2.1 The development comprises a mix of residential and employment uses. It has been confirmed by the project team that the only significant mechanical plant at the site will be situated on the roof of the development in two enclosures. This plant is therefore the focus of this assessment and a current drawing of the proposed layout is shown in Figure 1 below (plant highlighted in red).

Figure 1 Proposed Plant Locations (red areas)



2.2 Figure 2 below shows the location of the identified nearest noise sensitive development (Urbanest St Pancras). It is considered that if plant noise levels are compliant with the above conditions at this location then they will also be compliant at more distant locations. It is, however, also appropriate to consider the effect of the mechanical plant on residents of the development itself. This is discussed further below.

Figure 2 Nearest Noise Sensitive Receptor



3. PLANT NOISE IMPACT ASSESSMENT

Design criteria – Mechanical plant noise

3.1 BS4142:2014 – *Methods for rating and assessing industrial and commercial sound* (BS4142) can be used to assess the impact of noise from external industrial and/or commercial noise sources on nearby sensitive receptors.

3.2 The BS4142 assessment methodology can be summarised as follows:

1. Measure the existing background noise levels (LA90,T dB) at the locations of nearby noise sensitive receptors during the quietest periods when the noise source(s) under investigation will operate;
2. Predict or measure the noise emissions (LAeq,T dB) from the noise source(s) under investigation at the location(s) of the nearby sensitive receptors, including corrections for any distinguishable acoustic features (e.g. tones, whines, screeches, hisses etc);
3. Subtract the measured background noise levels (item 1 above) with the measured or predicted rating noise levels (item 2 above) at each sensitive receptor. BS4142 states that:

a) Typically, the greater this difference, the greater the magnitude of the impact.

b) A difference of around +10 dB or more is likely to be an indication of a significant adverse impact, depending on the context.

c) A difference of around +5 dB is likely to be an indication of an adverse impact, depending on the context.

d) The lower the rating level is relative to the measured background sound level, the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact. Where the rating level does not exceed the background sound level, this is an indication of the specific sound source having a low impact, depending on the context.

NOTE Adverse impacts include, but are not limited to, annoyance and sleep disturbance. Not all adverse impacts will lead to complaints and not every complaint is proof of an adverse impact.

3.3 Based on the wording of the planning conditions it is understood that Camden Council consider the "background -5 dB" to be an appropriate daytime criterion where the noise sources do not contain distinguishable, discrete continuous notes (whine, hiss, screech, hum) and/or if there are distinct impulses (bangs, clicks, clatters, thumps) and "background -10 dB" as an appropriate criterion for sources with those characteristics. These criteria have therefore been adopted for the assessment of noise emissions from mechanical plant at the development.

3.4 As detailed in Paragraph 3.6 below, the external mechanical plant is limited to a number of dry air coolers mounted on the roof. This plant typically has a relatively broadband noise spectrum (i.e. no 'continuous notes') and, if maintained properly, should have no distinct impulses. Therefore the "background -5 dB" it is considered to be the appropriate design target in this instance.

3.5 Background noise levels (LA90) at the site were measured as part of the site noise survey outlined in Appendix 1. The measured background noise levels have been used to develop limits for plant noise emissions from the new development at the positions of the surrounding residential properties in accordance with the BS4142 assessment methodology. The limits are shown in Table 1 below.

Table 1 BS4142 Noise Limits – 1m from Façade of Nearest Noise Sensitive Receptor

Location	Period	
	Day-time/Evening (0700-2300hrs)	Night-time (2300-0700hrs)
Nearest residential properties to new building	42 dB LAeq	38 dB LAeq

Proposed mechanical plant design

3.6 Mechanical plant associated with the new building will comprise the following rooftop air handling units located in the positions identified in Figure 1.

- 4No. Guntner GFHV FD 080.1MF/14E-55 AHU

3.7 A 3D model of the site and surrounding area was constructed using CadnaA 2017 noise modelling software. The 3D noise model was used to predict noise emissions from plant on the roof of the new building at the locations of surrounding noise sensitive positions. The predictions assumed that all plant items were running simultaneously and that the screens around the roof top plant areas were 1.6 high (including 0.1m upstand) and acoustically absorptive on the internal faces. This screen specification has been agreed with the project design team and will be implemented at the appropriate time.

3.8 The results of the predictions are shown in Table 2.

Table 2 Predicted Plant Noise Emissions from New Building

Location	Predicted Plant Noise Levels (LAeq)	BS4142 Criteria (LAeq)	
		Day-time/Evening (0700-2300hrs)	Night-time (2300-0700hrs)
Nearest and 'worst case' residential properties to new building (Urbanest St Pancras)	36 dBA	42 dBA	38 dBA
Residences within development	42 dBA	42 dBA	38 dBA

3.9 It can be seen from Table 2 that the predicted plant noise levels at the nearest existing residential properties is lower than the day and night-time noise criteria. The currently proposed details for the rooftop plant are therefore considered to be compliant with the design requirements of the noise related planning conditions at that location.

3.10 It can be seen that there is a small (4dB) exceedance of the night-time criterion for the uppermost dwellings of the development closest to the plant enclosures. Although this is not ideal, this is not considered to be unacceptable for the following reasons.

- The assessment considers a 'worst case' operation (i.e. all coolers operating at max duty, simultaneously). In reality, it is unlikely that this will be the case at night due to reduced cooling requirements and therefore the noise output and subsequent impact will be less than predicted.
- Assessment of plant noise impact in accordance with BS4142 does not take into account façade treatments for proposed residences (i.e. glazing and ventilation). Even standard thermal double glazing and trickle ventilators are anticipated to provide adequate protection for future residents such that their amenity will not be affected by the proposed plant.
- Plant noise levels are relatively low in absolute terms. As such, even if occupants were to open their windows, internal noise levels due to mechanical plant running at full duty would not exceed the BS8233:2014 *Guidance on sound insulation and noise reduction for buildings* even if a suitable BS4142:2014 style rating penalty were applied.

3.11 With consideration of the above, it is considered that noise emissions from the proposed fixed mechanical plant at the site are compliant with the relevant planning conditions and the design elements of these conditions may be discharged for the site.

4. CONCLUSIONS

4.1 Cass Allen Associates was instructed by United Living (South) Ltd assess the acoustic design of the proposed mechanical plant as required by Planning Conditions 14 and 16.

4.2 Plant noise level design targets have been adopted based on the proposed conditions and current relevant British Standards and guidance.

4.3 Based on the proposed mechanical plant and enclosure design, a 3D noise model was constructed in order to establish the plant noise levels at the position of the nearest existing noise sensitive receptors as well receptors within the development itself.

4.4 The noise modelling indicated that plant noise levels compliant with the adopted criteria are anticipated at the nearest noise sensitive receptors as well receptors within the development itself.

4.5 It is our view that this report contains the information required to discharge the design elements of the noise related planning conditions on the development.

Appendix 1 Survey Results

Survey Summary:

The survey comprised unattended noise monitoring at the site. Noise levels at the site were generally dictated by road traffic on surrounding roads and noise from train passes on the adjacent railway.

Construction was underway on the site during the site survey and as a result, portions of the day which were subject to construction noise have been excluded from analysis.

Survey Period:

15/08/2017 to 16/08/2017

Survey Objectives:

- To identify noise sources that contribute to ambient noise levels at the site;
- To measure noise levels around the site over a typical day and night-time period.

Equipment Used (Appendix 1, Table 1):

Type	Manufacturer	Model	Serial Number
Sound level meter[1] (noise logger)	Rion	NL-32	00530374

Note 1: All sound level meters were calibrated before and after measurement periods and no significant drift in calibration was found to have occurred. The results of the measurements are therefore considered to be representative.

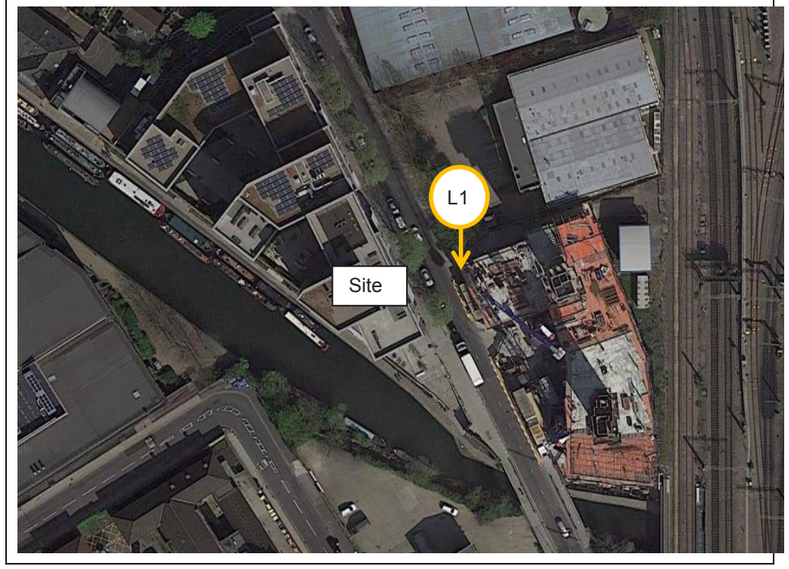
Weather Conditions:

Weather records for the area confirmed that weather conditions were also generally acceptable for acoustic measurement during the unattended monitoring.

Measurement Positions (Appendix 1, Table 2):

Position (refer plan below)	Description
L1	Unattended noise monitoring position. 2m above ground. Free-field. Direct line of sight to nearby roads

Site Plan showing Measurement Positions (Appendix 1, Figure 3):



Unattended Noise Monitoring Results (Appendix 1, Table 3) – Construction Noise Excluded:

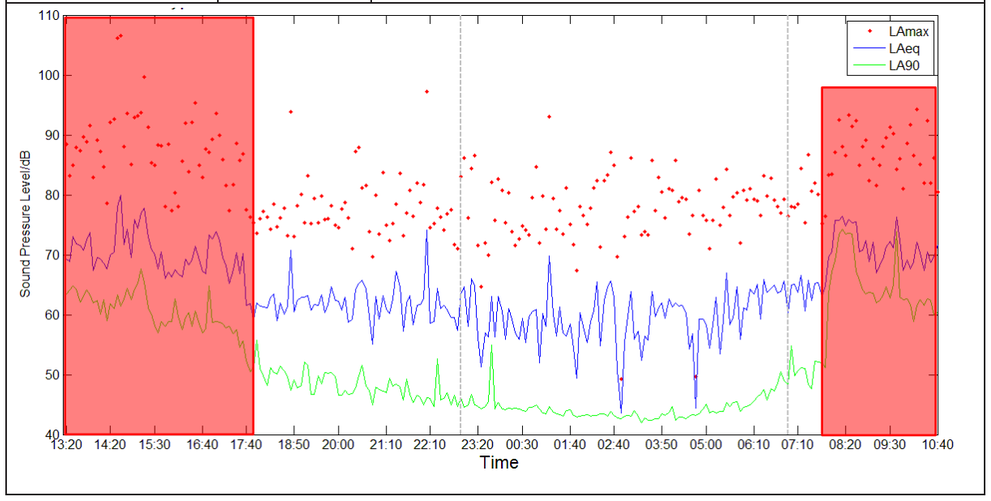
Meas. Period	Position	Daytime (0700-2300hrs)		Night-time (2300-0700hrs)		
		LAeq,16hr, dB	LA90,1hr dB[1]	LAeq,8hr, dB	LA90,5mins, dB[1]	LAmax, dB[2]
15/08/2017 to 16/08/2017	L1	63	47	61	43	83

Note 1: Typical lowest measured during the period shown.

Note 2: Highest typical maximum noise level during the night-time (not exceeded more than 10-15 times per night).

Unattended Noise Monitoring Results (Appendix 1, Figure 4) – Construction Periods Highlighted:

Meas. Period	Position
15/08/2017 to 16/08/2017	L1



Appendix 2 Modelling Results

Modelling Software:	CADNA/A Version 4.6
Modelled Scenarios:	Plant Noise Emissions
Data inputs:	• Plant Noise Data • Topographical data for the site • Development layout
Calculation Algorithms Used:	• Calculation of Road Traffic Noise 1988 – Department of Transport • ISO 9613-1:1993 Acoustics-Attenuation of sound during propagation outdoors – Part 1: Calculation of the absorption of sound by the atmosphere • ISO 9613-2:1996 Acoustics-Attenuation of sound during propagation outdoors – Part 2: General method of calculation

Modelling Printout (Appendix 2, Figure 1):

Scenario	Daytime noise levels (LAeq,16hr) at Urbanest St Pancras