Noise Impact Assessment

Lytham Green Drive Golf Club

Reference: 50-722-R1-2

Date: February 2024

NOISE IMPACT ASSESSMENT

Lytham Green Drive Golf Club

Prepared for:

Booths Ventures

Report Ref: 50-722-R1-2
Date Issued: 20th February 2024

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QUALITY ASSURANCE

PROJECT NUMBER	50-722			
VERSION	Version 1	Version 2		
REMARKS	Draft for Comment	Final Version		
DATE	27th October 2023	20th February 2024		
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EXECUTIVE SUMMARY

BACKGROUND

Site Address	Lytham Green Drive Golf Club, Saltcotes Road, Borough of Fylde, Lancashire, England, FY8 4LL,
National Grid Reference	E 337568 N 428531
Proposed Development	Full planning permission for the extension to the existing Lytham Green Drive Golf Club, with associated importation of inert materials to increase ground levels and accompanying groundworks.
Report Objectives	The objectives of this report are to: • Identify, measure and assess the potential impact of any proposed sound sources associated with the development upon existing receptors in the immediate vicinity of the Site. The report follows current and relevant British Standards in order to provide a robust assessment.

ASSESSMENT

Surveys Completed	E3P has undertaken an unattended ambient and background sound survey in a position considered representative of the existing sound climate at the closest receptors.
Assessments	A 3D noise model has been constructed to assess the impact of importation and redistribution of inert materials on site, to the nearby noise sensitive receptors. The model has been used to predict the noise levels at the nearby receptors from worst case predicted activity on site. The predictions have followed the methodology contained within BS 5228-1 and are in terms of the $L_{Aeq,T}$ over the core working day, which is assumed to be 07:30 to 17:00 hours Monday to Friday and 08:00 to 13:00 on Saturdays. The ABC method prescribed has been followed. As such, ambient noise levels fall below those stipulated for category A and so a threshold value of 65 dB is set for any earthwork noise.
Mitigation Requirements	The assessment identifies that the calculated unmitigated earthworks and construction noise levels do not exceed the 65 dB threshold value at receptors and therefore mitigation measures are not required.

CONCLUSIONS

This assessment has shown that no adverse impact is predicted at the receptors due to earthworks.

TABLE OF CONTENTS

1. INTRODUCTION

1.1. BACKGROUND

E3P were commissioned by Booths Ventures to undertake a Noise Impact Assessment for a proposed extension at Lytham Green Drive Golf Club, in Lytham, to be referred to hereafter as '*the Site*'.

This assessment looks to determine the key noise sources associated with the proposed development and to assess their impact, if any, upon existing residential receptors and to specify mitigation measures, where required.

1.2. PROPOSED DEVELOPMENT

Booths Ventures are seeking full planning permission for the extension of Lytham Green Drive Golf Course. The key sources of sound associated with the development will be plant items and haulage trucks used in the importation and redistribution of inert material to site.

This assessment has been undertaken in accordance with the following supplied drawings:

- Masterplan (February 2024) – Drawing Number GGD-350-3090 dated 16th February 2024.

The Plan is shown in Figure 1 of Appendix II.

1.3. LIMITATIONS

Where a noise or vibration survey is required to inform an assessment, E3P will endeavour to ensure that all noise and vibration measurements taken are robust, representative and reliable in order to inform an accurate assessment at the time.

E3P will endeavour to capture all existing and proposed sources of sound and vibration at the time of the surveys and/or assessments. However, should new sources of sound be introduced, existing sources modified/changed, or characteristics of the sound be altered following completion of such, E3P cannot be held accountable for this.

Where mitigation measures are specified in this report, it should be noted that these measures are relative to a specific sound or vibration source, both in terms of the measured sound pressure and vibration level and the character of the sound source. Where either the sound pressure level or the character of the sound varies following completion of the sound survey, E3P cannot be held responsible for any subsequent variations in the proposed mitigation performance, for either absolute levels or frequency content.

2. ASSESSMENT METHODOLOGY

2.1. NATIONAL PLANNING POLICY FRAMEWORK

To prevent unacceptable risks from pollution, planning policies and decisions should ensure that new development is appropriate for its location. The effects (including cumulative effects) of pollution on health, the natural environment or general amenity, and the potential sensitivity of the area or proposed development to adverse effects from pollution, should be considered.

The national planning policy framework states that planning policies and decisions should aim to:

- Avoid noise from giving rise to significant adverse impacts on health and quality of life as a result of new development.
- Mitigate and reduce to a minimum, other adverse impacts on health and quality of life arising from noise from new development, including through the use of conditions.
- Recognise that development will often create some noise and existing businesses wanting to develop in continuance of their business should not have unreasonable restrictions put on them because of changes in nearby land uses since they were established.
- Identify and protect areas of tranquillity which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason.

2.2. NATIONAL PLANNING PRACTICE GUIDANCE

Noise needs to be considered when new developments may create additional noise and when new developments would be sensitive to the prevailing acoustic environment. When preparing local or neighbourhood plans, or taking decisions about new development, there may also be opportunities to consider improvements to the acoustic environment.

Local planning authorities' plan-making and decision-making should take account of the acoustic environment and in doing so consider:

- Whether or not a significant adverse effect is occurring or is likely to occur.
- Whether or not an adverse effect is occurring or is likely to occur.
- Whether or not a good standard of amenity can be achieved.

In line with the explanatory note of the NPSE, this would include identifying whether the overall effect of the noise exposure (including the impact during the construction phase, where applicable) is, or would be, above or below the significant observed adverse effect level and the lowest observed adverse effect level for the given situation.

The "observed effect levels" are as follows:

- **Significant observed adverse effect level:** This is the level of noise exposure above which significant adverse effects on health and quality of life occur.
- **Lowest observed adverse effect level:** This is the level of noise exposure above which adverse effects on health and quality of life can be detected.
- **No observed effect level:** This is the level of noise exposure below which no effect at all on health or quality of life can be detected.

Table 2.1 summarises the noise exposure hierarchy, based on the likely average response.

TABLE 2.1 NOISE EXPOSURE HIERARCHY

PERCEPTION	EXAMPLES OF OUTCOMES	INCREASING EFFECT LEVEL	ACTION
Not Noticeable	No effect.	No observed effect	No specific measures required
Noticeable and Not Intrusive	Noise can be heard but does not cause any change in behaviour or attitude. Can slightly affect the acoustic character of the area but not such that there is a perceived change in the quality of life.	No observed adverse effect	No specific measures required
Lowest Observed Adverse Effect Level			
Noticeable and Intrusive	Noise can be heard and causes small changes in behaviour and/or attitude, e.g. turning up volume of television, speaking more loudly, or having to close windows for some of the time because of the noise where there is no alternative ventilation. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a perceived change in the quality of life.	Observed adverse effect	Mitigate and reduce to a minimum
Significant Observed Adverse Effect Level			
Noticeable and Disruptive	The noise causes a material change in behaviour and/or attitude, e.g. avoiding certain activities during periods of intrusion, having to keep windows closed most of the time because of the noise where there is no alternative ventilation. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant observed effect	Avoid
Noticeable and Very Disruptive	Extensive and regular changes in behaviour and/or an inability to mitigate effect of noise leading to psychological stress or physiological effects, e.g. regular sleep deprivation/awakening, loss of appetite, significant/medically definable harm (auditory and non-auditory).	Unacceptable adverse effect	Prevent

The subjective nature of noise means that there is not a simple relationship between noise levels and the impact on those affected. This will depend on how various factors combine in any situation.

These factors include the following:

- The source and absolute level of the noise together with the time of day it occurs. Some types and level of noise will cause a greater adverse effect at night than if they occurred during the day. The adverse effect can also be greater simply because there is less background noise at night.
- For non-continuous sources of noise, the number of noise events, and the frequency and pattern of occurrence of the noise can be important.
- The spectral content of the noise and the general character of the noise. The local topology and topography should also be considered along with the existing and, where appropriate, the planned character of the area.

More specific factors to consider when relevant:

- Where applicable, the cumulative impacts of more than one source should be considered along with the extent to which the source of noise is intermittent and of limited duration.
- Consideration should also be given to whether adverse internal effects can be completely removed by closing windows and, in the case of new residential development, if the proposed mitigation relies on windows being kept closed most of the time. In both cases, a suitable alternative means of ventilation is likely to be necessary.
- If external amenity spaces are an intrinsic part of the overall design, then the acoustic environment of those spaces should be considered so that they can be enjoyed as intended.

2.3. BRITISH STANDARD 5228: NOISE AND VIBRATION CONTROL ON CONSTRUCTION AND OPEN SITES – PART 1: NOISE: 2009+A1 2014 (BS 5228-1)

This British Standard sets out techniques required to predict and assess the likely noise effects from construction works, based on detailed information on the type and number of plant being used, their location, and the length of time they are in operation.

The noise prediction method is used to establish likely noise levels in terms of the $L_{Aeq,T}$ over the core working day.

This British Standard also documents a database of information, comprising previously measured sound power levels for a variety of different construction plant undertaking various common activities.

Example criteria are presented for the assessment of the significance of noise effects. Such criteria maybe concerned with fixed noise limits and/or ambient noise level changes. In addition to this, another method, the ABC method is given based on the existing ambient noise levels at the receptors.

3. SURVEY RESULTS

The measurement position is detailed in Figure 1 of Appendix III.

3.1. UNATTENDED BACKGROUND AND AMBIENT SOUND SURVEY

E3P has conducted a full weekday and weekend ambient and background Sound Survey in order to quantify the existing levels of background and ambient sound at a position considered representative of the closest existing residential receptors to the development.

The survey was carried out over the following period:

- 11:00 Thursday 20th October to 11:00 Monday 23rd October 2023.

The following noise measurement position was chosen for the Background Sound Survey:

- Noise Measurement Position 1 (NMP1): Located to the east of site in a position representative of the surrounding noise sensitive receptors. The measurement position was under free-field conditions. The microphone of the sound level meter was attached to a tripod at a height of 1.5 m above ground level. Sound sources here were dominated by road traffic sound along Saltcotes Rd and surrounding road network.

Table 3.1 details the range and median measured background sound levels. The daytime levels correspond to the $L_{A90,1hr}$ and the night-time levels to the $L_{A90,15mins}$.

TABLE 3.1 AVERAGE AND MEDIAN MEASURED BACKGROUND SOUND PRESSURE LEVELS

DATE	ASSESSMENT PERIOD	RANGE OF MEASURED BACKGROUND SOUND LEVELS, $L_{A90,T}$ (dB)	MEDIAN BACKGROUND SOUND LEVEL, $L_{A90,T}$ (dB)
Thursday 19th October 2023	Day (11:00 – 23:00)	32.8 – 45.6	45
	Night (23:00 – 07:00)	27.0 – 49.3	40
Friday 19th October 2023	Day (07:00 – 23:00)	45.8 – 52.1	51
	Night (23:00 – 07:00)	32.3 – 44.2	35
Saturday 19th October 2023	Day (07:00 – 23:00)	33.0 – 45.5	44
	Night (23:00 – 07:00)	24.2 – 34.4	**27**
Sunday 19th October 2023	Day (07:00 – 23:00)	30.5 – 43.5	**40**
	Night (23:00 – 07:00)	23.9 – 39.1	27
Monday 19th October 2023	Day (07:00 – 11:00)	31.5 – 45.7	45

TABLE 3.2 NOISE MEASUREMENT EQUIPMENT AND CALIBRATION DATES

MEASUREMENT POSITION	EQUIPMENT DESCRIPTION	MANUFACTURER & TYPE NUMBER	SERIAL NUMBER	CALIBRATION DUE DATE
NMP1	Sound Level Meter	01dB Fusion	14616	29/06/2024
	Pre-amplifier	01dB Pre22	20951	
	Microphone	GRAS 40CD	494264	
	Calibrator	Cirrus CR 515	99206	03/08/2024

The sound level meter was field calibrated on site using the above-mentioned calibrator prior to and after noise measurements were taken. No significant drift was witnessed as noted above. Calibration certificates are available upon request.

4. NOISE IMPACT ASSESSMENT

E3P have utilised 3D noise modelling software, CadnaA MR2 2023, in order to consider the potential impact upon existing receptors. With regard to assumptions for the assessment, the following has been considered:

- Ground elevations have been taken as existing by way of a 2 m grid Digital Terrain Model (DTM) which contains public sector information licensed under the Open Government License v3.0.
- The daytime period has been assessed between the hours of 07:30 to 17:00. The site is assumed not to operate during the night-time period.
- Sound power levels of typical on-site operations have been taken from BS 5228-1:2009+A1:2014.
- 8 wheeled tipper and tracked excavator movement sound levels have been calculated from the measured data using the '*Method for mobile plant using a regular well-defined route*' that is set out in BS 5228 1 2009+A1:2014 and inputted into the model as line sources. 10 8-wheeled tippers and tracked excavator movements per hour has been assumed.
- The model has assumed that 8 wheeled tippers will drive to a designated tipping area in the centre of the site, tip out its fill and drive back to the entrance of the site. This can be considered worst case.
- Soft ground attenuation has been applied, where necessary.
- Maximum order of reflection used is 2.

4.1. CONSTRUCTION NOISE

It is inevitable with any major development that there will be some disturbance caused to those nearby during the clearance and construction phases of the Site. However, disruption due to construction is only temporary, limited to the Site and is of medium-term duration. Indeed, the impact will be localised to the nearest receptor/s to a phase and, as such, a medium-term consideration is considered appropriate.

The predictions have followed the methodology contained within BS 5228-1 and are in terms of the $L_{Aeq,T}$ over the core working day, which is assumed to be 07:30 to 17:00 hours Monday to Friday and 08:00 to 13:00 on Saturdays. Any minor deviation from these times has little to no impact on the outcome of these assessments.

Table 4.1 sets out the typical plant type, number and assumed utilisation ('on-time') used in the prediction of noise levels during the key construction activities.

TABLE 4.1 CONSTRUCTION PLANT DETAILS

PLANT TYPE	SOUND PRESSURE LEVEL AT 10 m, $L_{Aeq,T}$ (dB)	NUMBER OF PLANT ITEMS	ASSUMED ON-TIME (seconds)
8 Wheeled Tipper	64.2	-*	-*
Tracked Excavator	63.2	-*	-*
8 Wheeled loader Tipper (Tipping Fill)	79.0	2	1800
Dozer Spreading	89.0	1	3600

*Calculated via haul route calculation.

Predictions have been carried out to determine noise levels likely to be generated during the earthworks. For the purpose of these predictions, it was assumed that the intervening ground between the construction noise sources, and the receivers will be acoustically hard such that there will be no additional attenuation of sound due to ground absorption thus informing a worst-case assessment.

Noise predictions have been undertaken for off-site noise sensitive receptors in the immediate vicinity of the Site and are detailed below.

Table 4.2 sets out the average predicted unmitigated earthwork noise levels. The ABC method prescribed has been followed. As such, the average ambient noise levels between the hours of 07:30 and 17:00 Monday to Friday and 08:00 to 13:00 on Saturday have been used to determine a suitable threshold level. As such, ambient noise levels fall below those stipulated for Category A and so a threshold value of 65 dB is set for any earthwork noise. Any exceedances are highlighted in bold.

To inform a worst-case assessment, the assessment is based on earthworks being carried out closest to each respective receptor.

TABLE 4.2 PREDICTED AVERAGE EARTHWORKS NOISE LEVELS

RECEPTOR	AVERAGE DISTANCE (m)	AVERAGE EARTHWORKS NOISE LEVELS, $L_{Aeq,1hrs}$ (dB)
R1 – House to south east - on Saltcotes Road	170	53.5
R2 – House to north east – on Saltcotes Road	450	43.0

A review of Table 4.2 identifies that the calculated unmitigated earthworks and construction noise levels do not exceed the 65 dB threshold value at all receptors.

It should be noted that these predictions are worst case and that it is unlikely that operations are to be conducted on the sections of the Site closest to each of the identified receptors for significant periods of time. For most of the construction phase it is expected that activities will be conducted at greater distances from the receptors.

Given that construction noise is not expected to exceed the criterion at the closest receptors, no mitigation is required.

4.2. CONSTRUCTION GENERATED ROAD TRAFFIC NOISE

During the construction of the development, HGVs, and other small site/plant vehicles together with earthworks works will undertake trips to and from the Site.

The volume of construction traffic will make up a progressively lower proportion of the overall traffic volumes as the development site is developed. It is also important to consider that the construction period is relatively short-term and temporary in its effects.

With regards to noise, it should be noted that relatively large increases in road traffic movements would need to prevail for noticeable increases in road traffic noise levels to occur because of construction generated road traffic. As a general guide, although not accounting for changes in the percentage of HGV's, a 25% increase in traffic movements will only result in a 1 dB increase in noise levels. Similarly, a 58% increase would be required for 2 dB and 100% increase for a 3 dB increase. It should be noted that a 3 dB increase in noise levels is generally barely perceptible to the average human.

As such, given that construction traffic is expected to access the site via Saltcotes Road, at various stages of earthworks, the proposed construction generated traffic is likely to represent well below a 25% increase in road traffic levels considering the amount of traffic on the local road network. Any receptors on-site or in the immediate vicinity will be subject to on-site HGV movements, accounted for in the construction noise assessment.

5. CONCLUSION AND RECOMMENDATIONS

E3P were commissioned by Booths Ventures to undertake a Noise Impact Assessment for a full planning application for a proposed extension to Lytham Green Drive Golf Club.

An unattended background sound survey has been undertaken at the closest residential receptor that is representative of typical background sound levels.

A 3D noise model has been constructed to assess the impact of importation and redistribution of inert materials on site, to the nearby noise sensitive receptors. The model has been used to predict the noise levels at the nearby receptors from worst case predicted activity on site.

The average ambient noise levels between the hours of 07:30 and 17:00 Monday to Friday and 08:00 to 13:00 on Saturday have been used to determine a suitable threshold level.

The predictions have followed the methodology contained within BS 5228-1 and are in terms of the $L_{Aeq,T}$ over the core working day, which is assumed to be 07:30 to 17:00 hours Monday to Friday and 08:00 to 13:00 on Saturdays. The ABC method prescribed has been followed. As such, ambient noise levels fall below those stipulated for category A and so a threshold value of 65 dB is set for any earthwork noise.

The assessment identifies that the calculated unmitigated earthworks and construction noise levels fall below the 65 dB threshold value at all receptors.

This assessment has shown that followed no adverse impact is predicted at the receptors due to earthworks.

END OF REPORT

APPENDIX I
GLOSSARY OF ACOUSTIC TERMINOLOGY

NOISE

Noise is defined as unwanted sound. Human ears are able to respond to sound in the frequency range 20 Hz (deep bass) to 20,000 Hz (high treble) and over the audible range of 0 dB (the threshold of perception) to 140 dB (the threshold of pain). The ear does not respond equally to different frequencies of the same magnitude but is more responsive to mid-frequencies than to lower or higher frequencies. To quantify noise in a manner that approximates the response of the human ear, a weighting mechanism is used. This reduces the importance of lower and higher frequencies, in a similar manner to the human ear.

Furthermore, the perception of noise may be determined by a number of other factors, which may not necessarily be acoustic. In general, the impact of noise depends upon its level, the margin by which it exceeds the background level, its character and its variation over a given period of time. In some cases, the time of day and other acoustic features such as tonality or impulsiveness may be important, as may the disposition of the affected individual. Any assessment of noise should give due consideration to all of these factors when assessing the significance of a noise source. The most widely used weighting mechanism that best corresponds to the response of the human ear is the "A"-weighting scale. This is widely used for environmental noise measurement, and the levels are denoted as dB(A) or L_{Aeq}, L_{A90} etc., according to the parameter being measured.

The decibel scale is logarithmic rather than linear, and hence a 3 dB increase in sound level represents a doubling of the sound energy present. Judgement of sound is subjective but, as a general guide, a 10 dB(A) increase can be taken to represent a doubling of loudness, whilst an increase in the order of 3 dB(A) is generally regarded as the minimum difference needed to perceive a change under normal listening conditions. An indication of the range of sound levels commonly found in the environment is given in the following table.

TABLE A1 TYPICAL SOUND PRESSURE LEVELS

SOUND PRESSURE LEVEL	LOCATION/EXAMPLE
0	Threshold of hearing
20–30	Quiet bedroom at night
30–40	Living room during the day
40–50	Typical office
50–60	Inside a car
60–70	Typical high street
70–90	Inside a factory
100–110	Burglar alarm at 1 m away
110–130	Jet aircraft on take off
140	Threshold of pain

ACOUSTIC TERMINOLOGY

TABLE A2 TERMINOLOGY

DESCRIPTOR	EXPLANATION
dB (decibel)	The scale on which sound pressure level is expressed. It is defined as 20 times the logarithm of the ratio between the root-mean-square pressure of the sound field and a reference pressure (2E-05 Pa).
dB(A)	A-weighted decibel. This is a measure of the overall level of sound across the audible spectrum with a frequency weighting (i.e. "A" weighting) to compensate for the varying sensitivity of the human ear to sound at different frequencies.
$L_{Aeq, T}$	L_{Aeq} is defined as the notional steady sound level which, over a stated period of time (T), would contain the same amount of acoustical energy as the A-weighted fluctuating sound measured over that period.
L_{Amax}	L_{Amax} is the maximum A-weighted sound pressure level recorded over the period stated. L_{Amax} is sometimes used in assessing environmental noise where occasional loud noises occur, which may have little effect on the overall L_{eq} noise level but will still affect the noise environment. Unless described otherwise, it is measured using the "fast" sound level meter response.
L_{10} and L_{90}	If a non-steady noise is to be described, it is necessary to know both its level and the degree of fluctuation. The L_n indices are used for this purpose, and the term refers to the level exceeded for n% of the time. Hence L_{10} is the level exceeded for 10% of the time and as such can be regarded as the "average maximum level". Similarly, L_{90} is the "average minimum level" and is often used to describe the background noise. It is common practice to use the L_{10} index to describe traffic noise.
Free-field Level	A sound field determined at a point away from reflective surfaces other than the ground with no significant contributions due to sound from other reflective surfaces. Generally, as measured outside and away from buildings.
Fast	A time weighting used in the root-mean-square section of a sound level meter with a 125-millisecond time constant.
Slow	A time weighting used in the root-mean-square section of a sound level meter with a 1000-millisecond time constant.

APPENDIX II
MEASURED BACKGROUND SOUND LEVELS

TABLE A1: HOURLY AMBIENT AND BACKGROUND SOUND LEVEL DATA

PERIOD START	AMBIENT SOUND LEVEL, $L_{Aeq,1hr}$ (dB)	BACKGROUND SOUND LEVEL, $L_{A90,1hr}$ (dB)
19/10/2023 11:00	51.8	44.8
19/10/2023 12:00	51.4	44.6
19/10/2023 13:00	51.6	44.9
19/10/2023 14:00	51.7	44.8
19/10/2023 15:00	52.2	45.0
19/10/2023 16:00	53.1	45.6
19/10/2023 17:00	53.1	44.9
19/10/2023 18:00	51.0	42.5
19/10/2023 19:00	49.1	40.3
19/10/2023 20:00	47.4	37.7
19/10/2023 21:00	45.7	35.7
19/10/2023 22:00	43.4	32.8
19/10/2023 23:00	40.7	28.8
20/10/2023 00:00	41.5	33.2
20/10/2023 01:00	42.9	39.9
20/10/2023 02:00	44.7	41.4
20/10/2023 03:00	41.5	38.4
20/10/2023 04:00	42.2	36.5
20/10/2023 05:00	49.3	45.6
20/10/2023 06:00	51.4	47.5
20/10/2023 07:00	52.1	46.1
20/10/2023 08:00	55.4	49.7
20/10/2023 09:00	55.9	51.2
20/10/2023 10:00	55.5	50.2
20/10/2023 11:00	56.8	52.1
20/10/2023 12:00	57.0	51.8
20/10/2023 13:00	56.3	51.3
20/10/2023 14:00	57.2	50.7
20/10/2023 15:00	56.9	51.6
20/10/2023 16:00	57.2	51.9
20/10/2023 17:00	57.4	51.8
20/10/2023 18:00	55.6	49.5
20/10/2023 19:00	54.3	48.2

PERIOD START	AMBIENT SOUND LEVEL, $L_{Aeq,1hr}$ (dB)	BACKGROUND SOUND LEVEL, $L_{A90,1hr}$ (dB)
20/10/2023 20:00	54.4	49.0
20/10/2023 21:00	52.3	47.6
20/10/2023 22:00	51.6	45.8
20/10/2023 23:00	48.6	41.0
21/10/2023 00:00	43.2	34.5
21/10/2023 01:00	42.8	34.3
21/10/2023 02:00	44.2	37.8
21/10/2023 03:00	43.2	36.7
21/10/2023 04:00	40.4	33.5
21/10/2023 05:00	40.5	33.6
21/10/2023 06:00	43.1	35.1
21/10/2023 07:00	48.2	36.1
21/10/2023 08:00	51.6	41.9
21/10/2023 09:00	52.9	45.5
21/10/2023 10:00	52.6	45.4
21/10/2023 11:00	52.6	45.3
21/10/2023 12:00	52.7	44.5
21/10/2023 13:00	52.6	45.2
21/10/2023 14:00	52.0	45.1
21/10/2023 15:00	52.3	44.7
21/10/2023 16:00	52.3	44.9
21/10/2023 17:00	51.3	42.8
21/10/2023 18:00	51.0	41.1
21/10/2023 19:00	48.3	37.8
21/10/2023 20:00	46.6	33.0
21/10/2023 21:00	46.1	33.0
21/10/2023 22:00	46.1	33.1
21/10/2023 23:00	44.2	32.4
22/10/2023 00:00	42.7	28.1
22/10/2023 01:00	40.2	26.4
22/10/2023 02:00	34.0	25.5
22/10/2023 03:00	36.1	26.3
22/10/2023 04:00	35.2	25.1
22/10/2023 05:00	34.6	25.5

PERIOD START	AMBIENT SOUND LEVEL, $L_{Aeq,1hr}$ (dB)	BACKGROUND SOUND LEVEL, $L_{A90,1hr}$ (dB)
22/10/2023 06:00	36.8	26.2
22/10/2023 07:00	44.8	32.5
22/10/2023 08:00	48.6	36.8
22/10/2023 09:00	51.0	39.6
22/10/2023 10:00	51.2	42.4
22/10/2023 11:00	52.4	43.5
22/10/2023 12:00	52.1	43.4
22/10/2023 13:00	51.1	42.3
22/10/2023 14:00	50.9	42.5
22/10/2023 15:00	50.7	41.9
22/10/2023 16:00	50.7	40.7
22/10/2023 17:00	51.5	40.9
22/10/2023 18:00	49.3	39.1
22/10/2023 19:00	48.0	38.2
22/10/2023 20:00	48.6	38.1
22/10/2023 21:00	46.4	35.0
22/10/2023 22:00	44.6	30.5
22/10/2023 23:00	42.2	28.0
23/10/2023 00:00	38.2	25.5
23/10/2023 01:00	33.2	24.7
23/10/2023 02:00	31.6	24.7
23/10/2023 03:00	35.3	25.1
23/10/2023 04:00	37.8	25.4
23/10/2023 05:00	42.9	28.2
23/10/2023 06:00	45.7	35.8
23/10/2023 07:00	50.8	42.4
23/10/2023 08:00	53.1	45.7
23/10/2023 09:00	53.1	45.4
23/10/2023 10:00	56.1	45.7

APPENDIX III
FIGURES

Figure 1 - Noise Measurement Positions

Project:
Lytham Green Drive Golf Club

Project-No:
50-722

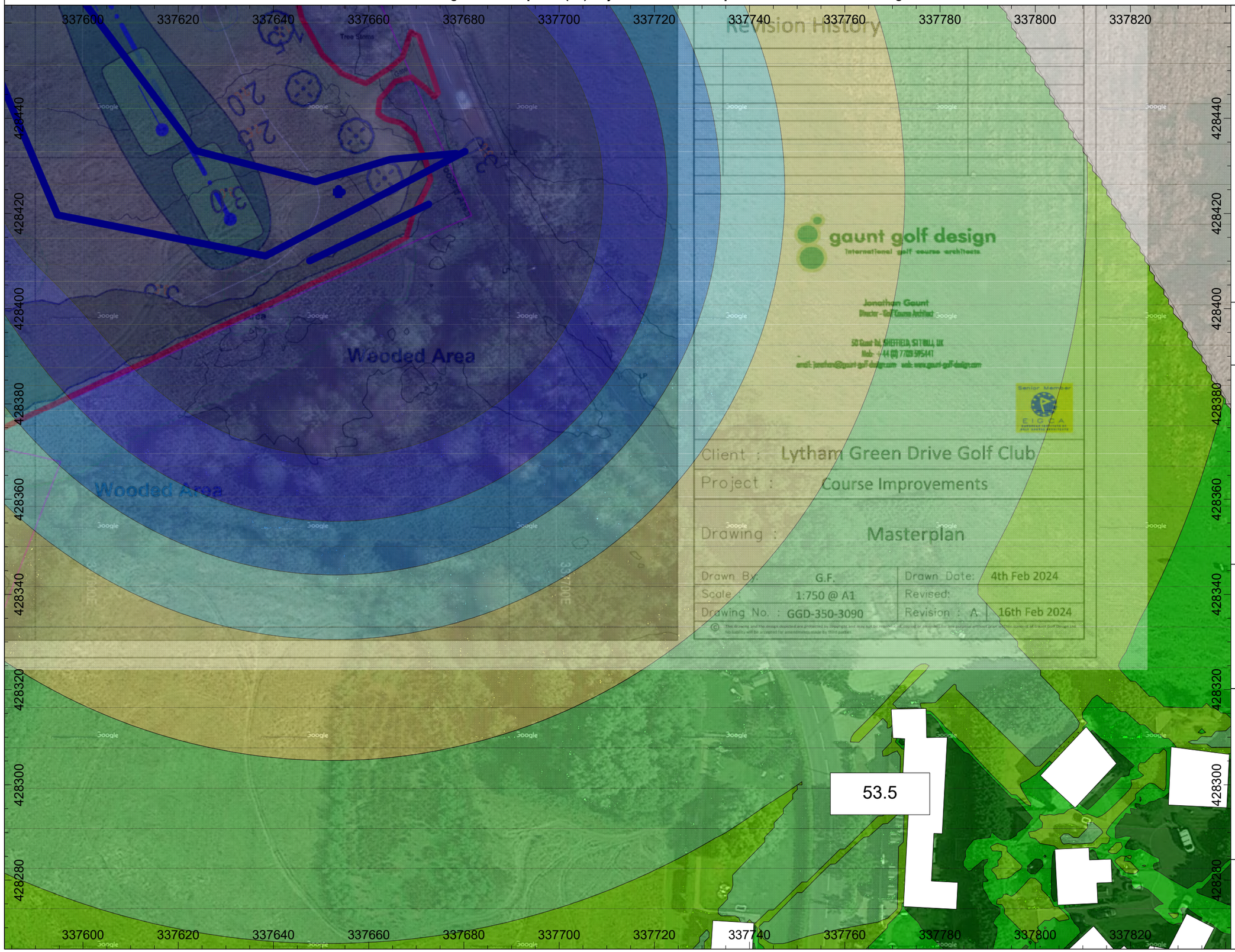
Client:
Booths Ventures

N

e3p

Project Engineer: Melissa Bailey
Date: 24/10/2023

Figure 2 - Receptor 1 (R1) Daytime Grid Noise Map - Calculation at 1.5m above ground level



Project:
Lytham Green Drive Golf Club

Project-No:
50-722

Client:
Booths Ventures

Daytime Noise Level, LAeq,16hr (dB)

- ... <= 48
- 48 < ... <= 50
- 50 < ... <= 52
- 52 < ... <= 56
- 56 < ... <= 58
- 58 < ... <= 60
- 60 < ... <= 62
- 62 < ... <= 65
- 65 < ...

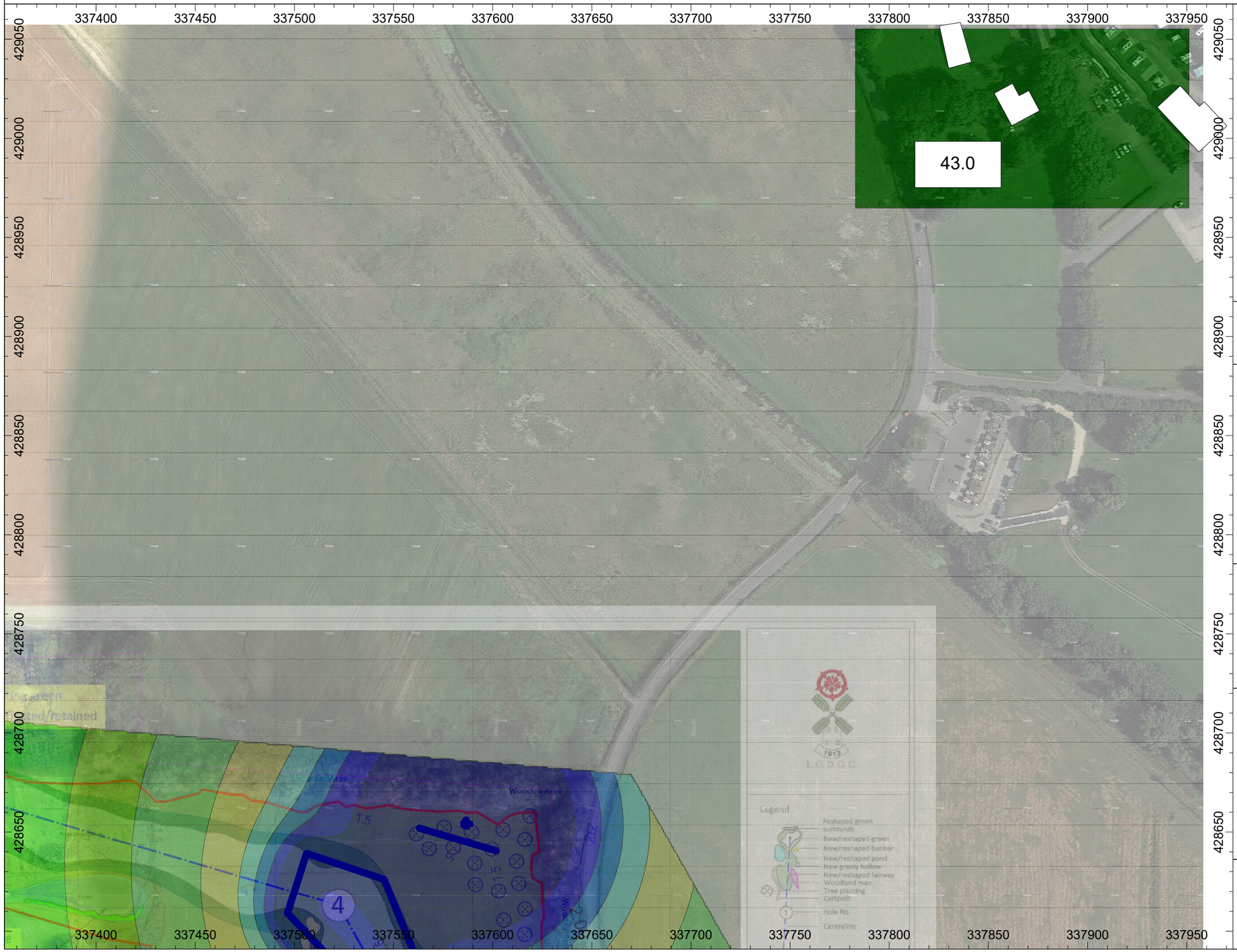
Noise Map Objects

- Point Source
- Line Source
- Parking Lot
- Building
- Barrier
- Calculation Area

e3p

Project Engineer: Melissa Bailey
Date: 24/10/2023

Figure 3 - Receptor 2 (R2) Daytime Grid Noise Map - Calculation at 1.5m above ground level



Project:
Lytham Green Drive Golf Club

Project-No:
50-722

Client:
Booths Ventures

Daytime Noise Level, LAeq,16hr (dB)

- ... <= 48
- 48 < ... <= 50
- 50 < ... <= 52
- 52 < ... <= 56
- 56 < ... <= 58
- 58 < ... <= 60
- 60 < ... <= 62
- 62 < ... <= 65
- 65 < ...

Noise Map Objects

- Point Source
- Line Source
- Parking Lot
- Building
- Barrier
- Calculation Area

e3p

Project Engineer: Melissa Bailey
Date: 24/10/2023