

Land off Lockwood Road Goldthorpe, Barnsley, S63 9JY

Planning Noise Assessment for a Proposed Residential Development

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Issued to

Gleeson Homes

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1. INTRODUCTION

Gleeson Homes are seeking planning permission for a residential development consisting of 137 houses at land off Lockwood Road in Goldthorpe, Barnsley. As the site is located in a sensitive area, a noise assessment is required to support the planning application.

Accordingly, Spectrum Acoustic Consultants has been instructed to carry out a noise assessment for the purpose of establishing the impact on the proposed residential properties. This report provides the information required to inform and satisfy the requirements of the Local Planning Authority, for the purpose of determining the application.

2. SITE DESCRIPTION AND PROPOSALS

The proposed development site is located off Lockwood Road in Goldthorpe, Barnsley, S63 9JY. The site currently consists of disused land, along with allotment gardens which have now been vacated. The A635 bounds the site to the north which is a busy A-road linking Barnsley to the A1(M). Beyond the A635 is parkland. Lockwood Road bounds the site to the west and has a number of existing residential properties located along it, along with a church, associated convent and a scout hut. To the south of the site is Dearne Goldthorpe Primary School, along with houses on East Street. To the east of the site are houses on Hamilton Road, Nora Street and St Mary's Road.

Proposals involve constructing 137 houses at the proposed development site. The houses would consist of a mixture of detached and semi-detached properties. Each of the houses would have a small garden to the rear and parking for vehicles at the front. The proposed scheme plans are included in Appendix B.

3. CRITERIA FOR ACCEPTABILITY

3.1 PLANNING GUIDELINES

3.1.1 National Planning Policy Framework (NPPF), February 2019

The National Planning Policy Framework (NPPF) sets out the government's guidance for local planning authorities and planning application decision-takers.

It says that the planning system should contribute to and enhance the environment by (among other things) preventing development from contributing to, being put at risk from, or being adversely affected by unacceptable levels of noise pollution. (Para. 170.e)

Paragraph 180 states that:

- Mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life;
- 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."



Paragraph 182 states that planning policies and decisions should ensure that:

- New development can be integrated effectively with existing businesses and community facilities (such as places of worship, pubs, music venues and sports clubs). Existing businesses and facilities should not have unreasonable restrictions placed on them as a result of development permitted after they were established. Where the operation of an existing business or community facility could have a significant adverse effect on new development (including changes of use) in its vicinity, the applicant (or 'agent of change') should be required to provide suitable mitigation before the development has been completed.

3.1.2 Noise Policy Statement for England (NPSE), DEFRA, March 2010

The NPPF refers to the Noise Policy Statement for England (NPSE) which sets out the long term vision of Government noise policy as follows: *Promote good health and a good quality of life through the effective management of noise within the context of Government policy on sustainable development.*

The first aim of the Noise Policy Statement for England

Avoid significant adverse impacts on health and quality of life from environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development.

- 2.23 The first aim of the NPSE states that significant adverse effects on health and quality of life should be avoided while also taking into account the guiding principles of sustainable development (paragraph 1.8).

The second aim of the Noise Policy Statement for England

Mitigate and minimise adverse impacts on health and quality of life from environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development.

- 2.24 The second aim of the NPSE refers to the situation where the impact lies somewhere between the Lowest Observed Adverse Effect Level (LOAEL) and the Significant Observed Adverse Effect Level (SOAEL). It requires that all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also taking into account the guiding principles of sustainable development (paragraph 1.8). This does not mean that such adverse effects cannot occur.

The third aim of the Noise Policy Statement for England

Where possible, contribute to the improvement of health and quality of life through the effective management and control of environmental, neighbour and neighbourhood noise within the context of Government policy on sustainable development.

- 2.25 This aim seeks, where possible, positively to improve health and quality of life through the proactive management of noise while also taking into account the guiding principles of sustainable development (paragraph 1.8), recognising that there will be opportunities for such measures to be taken and that they will deliver potential benefits to society. The protection of quiet places and quiet times as well as the enhancement of the acoustic environment will assist with delivering this aim.



3.1.3 Planning Practice Guidance – Noise (PPG), July 2019

The PPG sets out government guidance on the role of noise in the planning process. This provides advice on issues such as when noise is relevant to planning, how to determine noise impact, discussion on the context of noise and how the impact of noise can be mitigated.

Of relevance to this scheme, it advises that *“Noise needs to be considered when ...new developments would be sensitive to the prevailing acoustic environment.”* Whilst it does advise that noise can override other planning concerns, it states that as with the NPSE and the NPPF it does not expect noise to be considered in isolation from other economic, social and environmental dimensions of a proposed development.

It asks an LPA to consider:

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

This includes identifying whether the noise exposure is above or below SOAEL or LOAEL.

The PPG talks about “impact” and “effect”. This is an important part of the context discussion, as a noise may have a significant impact for a brief period of time, but because the impact is only brief, the overall “effect” is not significant, as it does not materially affect behaviour.

The PPG summarises examples of the perception of noise, with the outcome and the effect level:

- No observed effect: Noise is not noticeable, and no specific measures are required. This would correlate to NOAEL of the NPSE;
- No observed adverse effect: Noise is noticeable and not intrusive, does not cause any change in behaviour or attitude, can affect the acoustic character of an area but not such that there is a perceived change in the quality of life. No specific measures are required;
- Observed adverse effect: Noise causes small changes in behaviour (eg closing windows for some of the time because of the noise), potential for some sleep disturbance, and there is a perceived change in the quality of life. In this case noise should be mitigated and reduced to a minimum as it represents the onset of the LOAEL as defined in the NPSE;
- Significant observed adverse effect: Noise causes a material change in behaviour and attitude (eg avoiding certain activities during periods of intrusion, or having to keep windows closed most of the time because of the noise where there is no alternative ventilation), potential for difficulty getting back to sleep, quality of life diminished. This correlates to a SOAEL as defined by the NPSE and should be avoided.
- Unacceptable adverse effect: Extensive and regular changes in behaviour and/or an inability to mitigate effects, leading to psychological stress and physiological effects (eg regular sleep deprivation, medically definable harm). This, the PPG advises, should be prevented.

It is of note that the examples given in the PPG relate to changes of behaviour, changes to quality of life and changes in the character of an area. In the case of this development, residents would be moving into an existing situation, so behaviours would not change, as no pattern of behaviour is already established.



This is reflected formally in paragraph 007 of the PPG. This paragraph helps the LPA consider the balance between planning and statutory nuisance (Environmental Protection Act 1990). It states that *“When assessing whether a statutory nuisance exists, local authorities will consider a number of relevant factors including the noise level, its duration, how often it occurs, the time of day or night that it occurs and the ‘character of the locality’. The factors influencing the ‘character of the locality’ may include long-established sources of noise in the vicinity, for example church bells, industrial premises, music premises or public houses’.”*

As stated in the NPSE, there is no simple relationship between noise levels and the effect of those noise levels. The NPSE lists a number of factors as relevant, and the following are those that apply to this scheme:

- Source and level of noise;
- Number of noise events, how often they occur, and the pattern;
- The spectral content of the noise and its character;
- Whether noise effects can be mitigated by closing windows, allowing for alternative ventilation to be provided;
- The acoustic environment in external amenity spaces where they are an intrinsic part of the overall design;
- The effect on a nearby existing business.

The PPG says that for development, mitigation can be considered in terms of engineering (reducing noise at source, or containing it). This is unlikely to be practicable in a case like this, as the proposed developer would need to rely on the goodwill (unless formal agreements could be reached) with those responsible for the source of the noise. However, layout (orientating site to minimise impact, and including screening), planning conditions, and mitigation to the dwellings themselves are all likely to be feasible.

Such mitigation techniques are therefore recognised by the PPG as normal practice in the case of noise sensitive schemes.

The noise impact can also be offset where residents have access to a quiet facade, a quiet external amenity space for their sole or shared use, or a public amenity space nearby.



3.2 CRITERIA FOR ASSESSMENT

3.2.1 WHO – Environmental Noise Guidelines for the European Region 2018

New guidance from WHO titled Environmental Noise Guidelines for the European Region (ENG) was published in 2018. The document takes a very different approach to guidance set out in the previous WHO Guidelines for Community Noise 1999 (GCN) document by identifying separate thresholds for specific sources, rather than for community noise as a whole. Consequently, much of the earlier guidance set out in GCN is now absent from ENG. While ENG was intended to supersede GCN, it recognises this absence and states that *‘indoor guideline values and any values not covered by the current guidelines (such as industrial noise and shopping areas) should remain valid.’*

3.2.2 WHO – Guidelines for Community Noise, 1999

Guidelines for Community Noise - World Health Organization (GCN) gives guidance on suitable noise levels for sleeping and resting conditions in dwellings. It sets out these values in table 4.1, and lists them as being guideline values for community noise. The document defines community noise (also called environmental noise, residential noise or domestic noise) as noise emitted from all sources, except noise at the industrial workplace. Main sources of community noise include road, rail and air traffic, industries, construction and public work, and the neighbourhood.

WHO recommends internal noise levels of 30dB(A) at night for bedrooms, and 35dB(A) during the day for living-rooms. The guideline levels are based on annual average data.

To avoid sleep disturbance in bedrooms during the night time period, it also recommends that noise levels from single sound events should not regularly exceed L_{Amax} 45dB(A). WHO defines ‘regular’ as not more than 10-15 events per night.

WHO also gives guidance on suitable noise levels for outdoor living areas such as gardens. The WHO guidelines state that *“to protect the majority of people from being seriously annoyed during the daytime, the sound pressure level on balconies, terraces and outdoor living areas should not exceed 55 dB L_{Aeq} for a steady continuous noise. To protect the majority of people from being moderately annoyed during the daytime, the outdoor sound pressure level should not exceed 50 dB L_{Aeq} ”.*

The preface to WHO states that community noise includes road, rail and air traffic, industries, construction and public work, and the neighbourhood. Therefore, although these noise levels are usually used to determine acceptability from steady continuous noise from anonymous sources, such as road traffic or rail movements, they provide helpful guidance when considering noise from commercial sources.

3.2.3 BS 8233:2014 guidance on sound insulation and noise reduction for buildings

BS 8233:2014 *Guidance on sound insulation and noise reduction for buildings* gives guidance on indoor ambient noise levels to be achieved in dwellings for reasonable resting and sleeping conditions. The guidance in BS 8233:2014 is based on guidelines issued by the WHO, Guidelines for Community Noise (1999).



In Section 7.7.1 of BS 8233:2014, it states that it applies to external noise as it affects the internal acoustic environment from sources without a specific character, previously termed “anonymous noise”. However, it then goes on to state that if the noise has a specific character, if it contains features such as a distinguishable, discrete and continuous tone, is irregular enough to attract attention, or has strong low-frequency content, in which case lower noise limits might be appropriate.

The BS 8233:2014 guideline levels are shown in Table 1.

Activity	Location	07:00 to 23:00	23:00 to 07:00
Resting	Living room	35 dB $L_{Aeq,16hour}$	-
Dining	Dining room/area	40 dB $L_{Aeq,16hour}$	-
Sleeping (daytime resting)	Bedroom	35 dB $L_{Aeq,16hour}$	30 dB $L_{Aeq,8hour}$

Table 1: BS 8233 guideline noise level limits in dwellings for resting and sleeping

BS 8233 advises that *“If relying on closed windows to meet the guide values, there needs to be an appropriate alternative ventilation that does not compromise the facade insulation or the resulting noise level. If applicable, any room should have adequate ventilation (e.g. trickle ventilators should be open) during assessment.”*

It also advises that *“Where development is considered necessary or desirable...the internal target levels may be relaxed by up to 5 dB and reasonable conditions still achieved.”*

The standard also advises that *“Regular individual noise events (for example, scheduled aircraft or passing trains) can cause sleep disturbance. A guideline value may be set in terms of SEL or L_{AFmax} depending on the character and number of events per night. Sporadic noise events could require separate values.”* It does not give guidance on what might constitute a guideline value. However, as the standard does cross reference Guidelines for Community Noise - World Health Organization, 1999 (WHO), it is suggested that the guideline value of L_{AFmax} 45 dB, inside bedrooms, should not be exceeded during the night more than 10-15 times, which reflects the WHO position.

BS 8233:2014 suggests the following guidelines for noise levels in external spaces that are used for amenity space, such as gardens and patios. *“For traditional external areas that are used for amenity space, such as gardens and patios, it is desirable that the external noise level does not exceed 50 dB $L_{Aeq,T}$, with an upper guideline value of 55 dB $L_{Aeq,T}$ which would be acceptable in noisier environments. However, it is also recognized that these guideline values are not achievable in all circumstances where development might be desirable. In higher noise areas, such as city centres or urban areas adjoining the strategic transport network, a compromise between elevated noise levels and other factors, such as the convenience of living in these locations or making efficient use of land resources to ensure development needs can be met, might be warranted. In such a situation, development should be designed to achieve the lowest practicable levels in these external amenity spaces, but should not be prohibited.”*



4. SITE MEASUREMENT SURVEY

4.1 MEASUREMENT LOCATIONS

For the purpose of the assessment, unattended noise loggers were utilised for the recording of continuous noise measurements at two measurement locations, each representative of the most sensitive areas of the site. The noise measurement locations are detailed as follows:

Position A – North end of site, facing the A635.

Position B – Centre of site.

Additionally, short-term attended noise measurements were carried out through the daytime at the following locations.

Position 1 – Attended location at the northern end of the site.

Position 2 – Attended location at the centre of the site.

Position 3 – Attended location at the western side of the site.

Position 4 – Attended location at the western side of the site.

Position 5 – Attended location at the eastern side of the site.

Position 6 – Attended location at the eastern side of the site.

All of the noise measurements were carried out at 1.5m above ground. The measurement locations are illustrated on the existing site location plan, included in Appendix A.

4.2 SURVEY DETAILS AND INSTRUMENTATION

Measurements of noise were completed over the period Wednesday 10 to Thursday 11 February 2021. Throughout the survey, weather conditions were generally cold and dry, with low wind speeds.

Noise logger measurements consisted of contiguous five-minute periods for the duration of the survey at each of the identified noise logger locations. The instrumentation recorded short audio samples at timed intervals and selected individual events using a trigger to allow identification of noise sources.

The attended noise measurements were carried out during the daytime on Wednesday 10 February 2021 and consisted of five-minute samples at each of the identified locations.

Noise measurement parameters consisted of equivalent continuous (L_{Aeq}) noise levels and maximum (L_{Amax}) noise levels, as well as statistical noise levels (termed L_n , where n is the percentage of time the level is exceeded during the measurement period). Both overall and octave band measurements were stored for later analysis at all of the measurement positions.

The following instrumentation was used during the noise measurement survey:

- Bruel & Kjaer Type 2250 Light Sound Level Meter s/n 3006954
- Bruel & Kjaer Type 4952 Microphone s/n 2922639
- Bruel & Kjaer Type 2260 Sound Level Meter s/n 1772232
- Bruel & Kjaer type 4189 Microphone s/n 2469838
- Bruel & Kjaer Type 4230 Acoustic Calibrator s/n 1234621
- Bruel & Kjaer Type ZC 0026 Preamplifier s/n



- Bruel & Kjaer Type 2250 Sound Level Meter s/n 3027959
- Bruel & Kjaer Type 4189 Microphone s/n 3196073
- Bruel & Kjaer Type 4231 Acoustic Calibrator s/n 2688672

Before and after the survey, the sound level meters were field-calibrated in accordance with the manufacturer's guidelines, and no significant drift was observed. The meters, microphones and field calibrator are laboratory calibrated biennially in accordance with UKAS procedures or to traceable National Standards.

4.3 RESULTS & OBSERVATIONS

During the daytime noise levels across the site are dominated by road traffic movements on the A635 and other nearby roads. During the daytime noise emanating from Dearne Goldthorpe Primary School during break times is audible at the southern end of the site. However, road traffic noise remains dominant. During the night-time road traffic movements reduce. Charts below show the noise profiles measured at the logger monitoring locations.

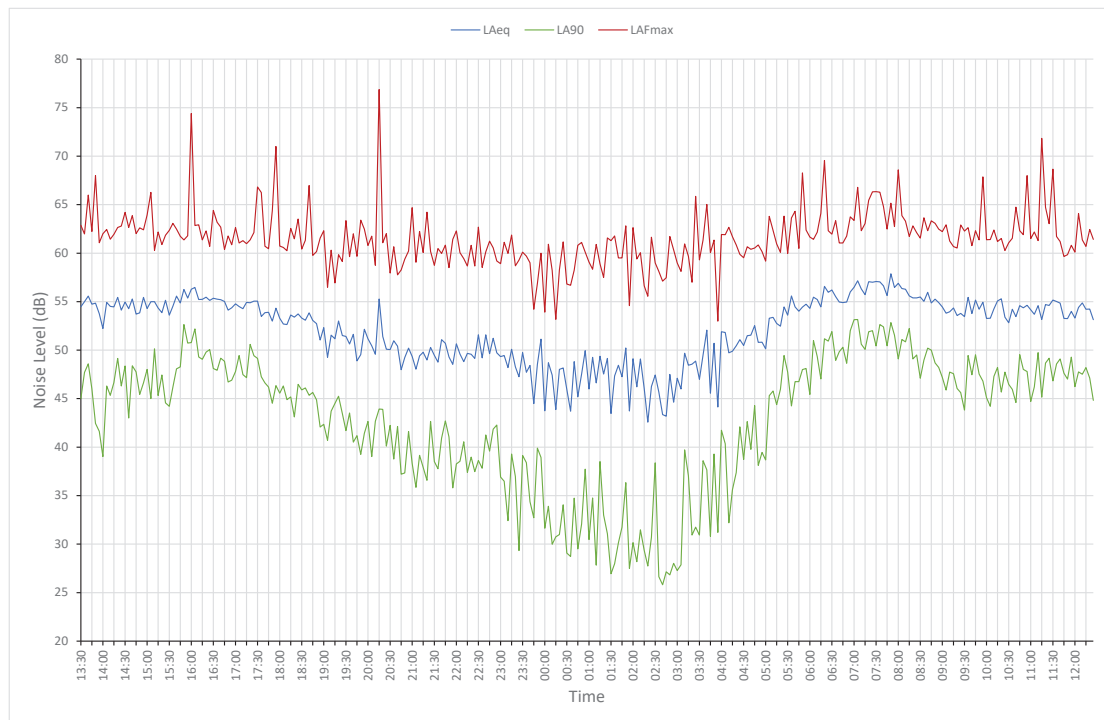


Chart 1: Position A, North end of site, facing the A635, ambient noise profile - Wednesday 10 to Thursday 11 February 2021

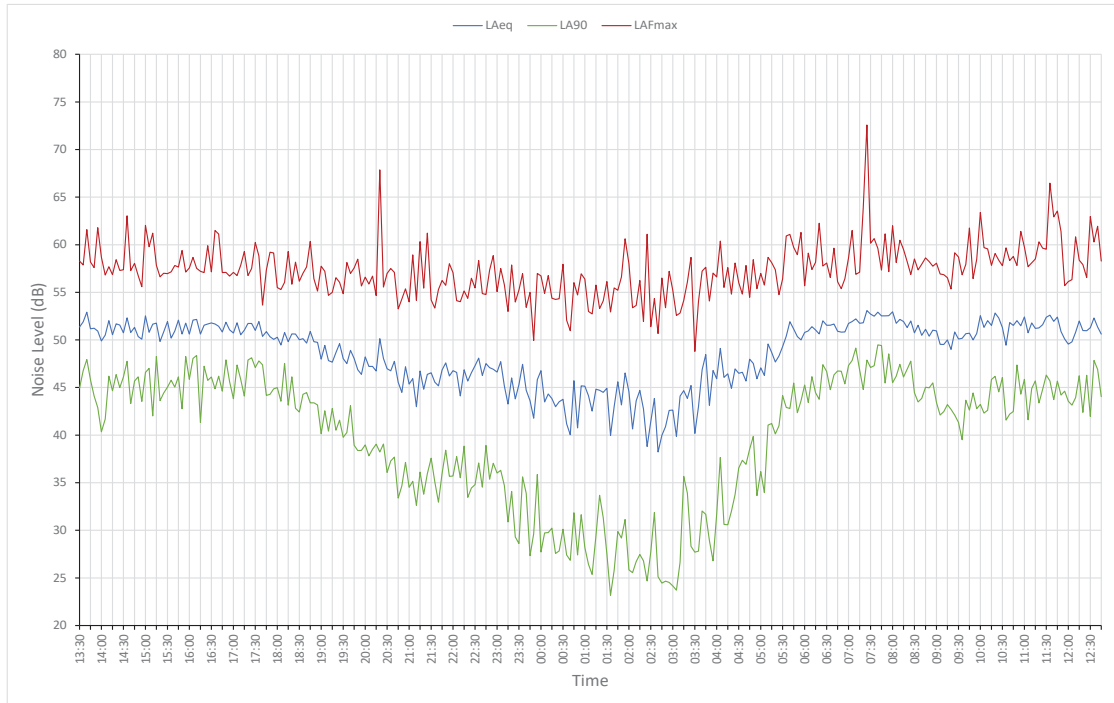


Chart 2: Position B, Centre of site, ambient noise profile - Wednesday 10 to Thursday 11 February 2021

A summary of the measured noise data over the daytime and night-time periods is included in Table 2 below. The $L_{Aeq,16\text{ hour}}$ and $L_{Aeq,8\text{ hour}}$ levels have been calculated using all of the daytime and night-time noise measurements.

With reference to L_{Amax} levels, World Health Organisation (WHO) guidelines for community noise, define regular as not more than 10-15 events per night. Therefore, the L_{Amax} levels measured during the night time periods have been sorted from highest to lowest. It is then possible to read off the 10-15th highest L_{Amax} levels during each of the night-time periods which are regarded as being typical. The typical L_{Amax} values for each of the night-time periods obtained in this survey are included in Table 2.



Measurement Position	Daytime L_{Aeq} (dB) 0700-2300	Night-time L_{Aeq} (dB) 2300-0700	Night-time typical L_{Amax}^1 (dB)
Position A – Logger North end of site, facing the A635.	54	51	63
Position B – Logger Centre of site.	51	47	59
Position 1 – Attended Northern end of the site.	54	-	-
Position 2 – Attended Centre of the site.	54	-	-
Position 3 – Attended Western side of the site.	53	-	-
Position 4 – Attended Western side of the site.	53	-	-
Position 5 – Attended Eastern side of the site.	54	-	-
Position 6 – Attended Eastern side of the site.	50	-	-

Table 2: Summary of results of ambient noise survey

Note: 1 The L_{Amax} data is only relevant to the night-time period

During the daytime, noise levels across the site are $L_{Aeq,16hour}$ 50-54dB. During the night-time, noise levels across the site are $L_{Aeq,8hour}$ 47-51dB, with maximum levels typically in the range L_{AFmax} 59-63dB.

The noise survey was carried out during a national lockdown due to the COVID-19 pandemic. It is therefore expected that road traffic movements were lower during the survey than under normal circumstances.

National statistical data indicates that the road traffic movements were around 60% of the typical volume during the survey¹. The national statistical data is measured on a sample of trunk roads around the country. Therefore, a +2 dB adjustment to the measured noise levels may be considered here.

5. PREDICTION OF ENVIRONMENTAL NOISE LEVELS AT INDIVIDUAL BUILDING FACADES

The proposed development comprises of dwellings and associated habitable rooms at various heights, distances and aspects relative to the A635. As a result, the noise levels affecting different parts of the proposed development will be subject to differing levels of distance attenuation, screening and angle of view to the road. Therefore, analysis has been undertaken to predict the noise levels at the various residential facades of the houses, based on the measurement results and taking these effects into account.

¹ <https://www.gov.uk/government/statistics/transport-use-during-the-coronavirus-covid-19-pandemic>



The procedure that has been followed is as summarised below:

- Generate a three dimensional numerical noise model of the site conditions at the time of the survey using Bruel and Kjaer's 7810 'Predictor' software. This acoustic model implements the procedures set out in ISO 9613-2:1996 "Acoustics – Attenuation of sound during propagation outdoors Part 2: General method of calculation to determine noise levels".
- Validate the noise prediction model against noise measurement data taken at the site and reported in Section 4.3. This validation is carried out in respect of daytime and night-time $L_{Aeq,T}$ levels, as well as night-time $L_{Amax,typ}$ for road traffic noise. The octave band frequency levels of the noise predictions are also taken from the measurements carried out at the site.
- Alter the noise model to replace the physical configuration at the time of the measurements with the proposed new scheme.
- Predict noise levels at numerous locations across the façades of the houses, representative of the proposed residential windows. A graphical representation of this model is shown at Appendix C.
- Use these noise level predictions as the starting point for intrusive noise calculations at key locations on the development.
- Compare predicted indoor noise levels against the guideline noise levels in terms of:
 - * - $L_{eq,T}$ noise levels in living rooms and bedrooms during the daytime (i.e. $L_{Aeq,T}$ 30 dB)
 - * - $L_{eq,T}$ noise levels in bedrooms during the night-time (i.e. $L_{Aeq,T}$ 30 dB), and
 - * - L_{Amax} noise levels in bedrooms during the night-time (i.e. $L_{Amax,typ}$ 45 dB)
- Using measured sound insulation data for standard façade components, set the sound insulation specifications for the relevant façade components necessary to meet the target noise levels (more information on this in Section 6).

Detailed results of day-time and night-time $L_{Aeq,T}$ levels at the noisiest locations are shown in Appendix C, corresponding to the calculation positions also included in Appendix C. All octave band levels listed in Appendix C are A-weighted.

The $L_{Amax,typ}$ levels have been calculated in the following way. The $L_{Amax,typ}$ measured at the monitoring locations is from a single, short-term event at one location and not the aggregate of noise from all points on the road network. Therefore, the $L_{Amax,typ}$ model includes a series of point sources, rather than line sources (as for the L_{Aeq} model). Accordingly, the single highest sound pressure level at each receptor location from an individual point source is taken to be the $L_{Amax,typ}$ for design purposes. The measured L_{max} frequency distribution (i.e. spectrum) has been also been used in this way within the predictions.



6. NOISE MITIGATION MEASURES

6.1 INTERNAL NOISE LEVELS

Internal noise levels can be calculated from external noise levels, given the size and construction of the building façade elements including glazing and ventilation, as well as acoustic properties of the receiving room, such as the volume and reverberation time. Usually, it is the glazing and, depending upon the particular strategy, the ventilation apertures that admit most noise into residences. It is then a matter of providing façade elements with adequate acoustic performance to achieve sufficient noise reduction to meet the internal noise target.

The method that has been followed is described in Annex G2.1 of *BS 8233:2014 Guidance on sound insulation and noise reduction for buildings*.

The analysis carried out here assumes typical internal finishes for the type of rooms considered, based on acoustic properties Spectrum have measured in a range of occupied dwellings. The general construction of the building envelope is as follows:-

- External walls of brick cladding, with an insulated cavity to 2 layers of 12.5mm plasterboard.
- Window glazing having a specification as described below.
- Ventilation to meet the requirements of Part F of the Building Regulations.

Sound insulation data for the façade elements have been taken from sources such as standard data provided by BRE and DETR, Spectrum library of measurement data, calculations using Marshall Day's *Insul* software as well as manufacturer's data and the BRE/CIRIA publication 'Sound Control for Homes'.

Based on the internal layout drawings for the proposed dwellings, sample intrusive noise calculations for the most noise-exposed habitable rooms of the development, based on the room and façade dimensions are included in Appendix D. The calculations have been carried out in order to establish the façade glazing and ventilation specification necessary to achieve guideline internal noise levels.

Table 3 below details a sound insulation specification for the proposed dwellings. The numeric sound insulation rating for the glazing and the ventilator openings has been specified in terms of $R_w + C_{tr}$ and $D_{n,e,w} + C_{tr}$ respectively.

Note, the noise data from the measurement survey was carried out during a national lockdown due to the COVID-19 pandemic. Therefore, the proposed mitigation scheme has been designed so that an increase in ambient noise levels of 2dB would still result in acceptable internal noise levels being achieved across the entire development.

Room	Wall type	Window Performance $R_w + C_{tr}$ dB	Vent Performance $D_{n,e,w} + C_{tr}$ dB
Living Room	Brick/block	25	32
Dining/Kitchen	Brick/block	25	32
Bedrooms	Brick/block	25	32

Table 3: Sound insulation specification for the proposed development site



Acoustic performances in all of the proposed habitable rooms can typically be achieved by the following specification.

- Standard double-glazed units (rated $R_w + C_{tr}$ 25dB), typically comprising of 4mm float glass, 12mm cavity, 6mm float glass.
- Standard hit and miss trickle ventilators (rated at $D_{n,e,w} + C_{tr}$ 32dB).

6.2 NOISE LEVELS IN OUTDOOR LIVING SPACES

BS 8233:2014 suggests the following guidelines for noise levels in external spaces that are used for amenity space, such as gardens and patios. *“For traditional external areas that are used for amenity space, such as gardens and patios, it is desirable that the external noise level does not exceed 50 dB $L_{Aeq,T}$, with an upper guideline value of 55 dB $L_{Aeq,T}$ which would be acceptable in noisier environments. However, it is also recognized that these guideline values are not achievable in all circumstances where development might be desirable. In higher noise areas, such as city centres or urban areas adjoining the strategic transport network, a compromise between elevated noise levels and other factors, such as the convenience of living in these locations or making efficient use of land resources to ensure development needs can be met, might be warranted. In such a situation, development should be designed to achieve the lowest practicable levels in these external amenity spaces, but should not be prohibited.”*

The site by definition adjoins the strategic road network. Consequently, the residential scheme has been designed to achieve the lowest practicable noise levels in the outside amenity areas of properties.

National statistical data indicates that the reduced road traffic movements could have resulted in a 2dB reduction in noise levels during the ambient noise survey. However, despite this, noise levels in all of the gardens during the daytime would not exceed the $L_{Aeq,16hour}$ 55dB guideline suggested by BS 8233:2014.

7. CONCLUSIONS

Gleeson Homes have commissioned Spectrum Acoustic Consultants to complete a noise assessment in order to support a planning application in connection with a proposed residential development, at land off Lockwood Road in Goldthorpe, Barnsley, S63 9JY.

During the daytime noise levels across the site are dominated by road traffic movements on the A635 and other nearby roads. During the night-time road traffic movements reduce.

A noise mitigation strategy has been developed, by considering the character to the noise impacting on the proposed development, as well as the noise insulation and noise control requirements for the proposed plots. The mitigation scheme that has been proposed and specified satisfies internal noise levels than the guidelines set out for good internal conditions in BS 8233:2014 and WHO Guidelines for Community Noise. No mitigation measures are required in order to achieve acceptable noise levels in gardens.

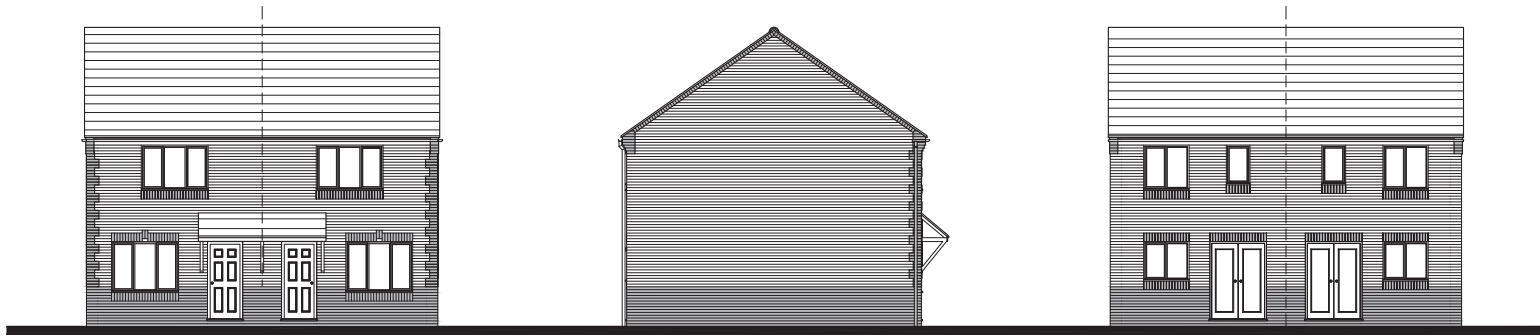
APPENDIX A

Existing Site Location Plan with Measurement Locations



APPENDIX B

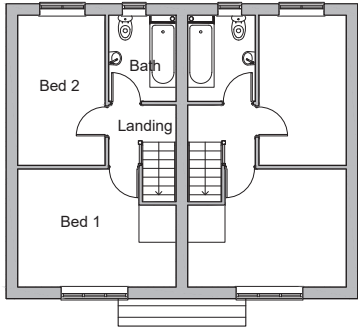
Proposed Scheme



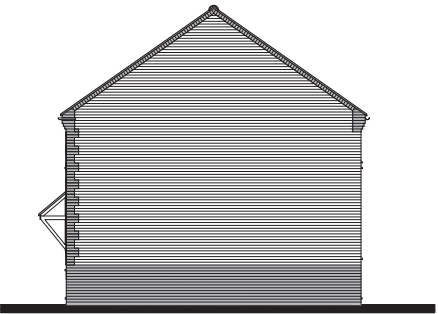
FRONT ELEVATION

SIDE ELEVATION

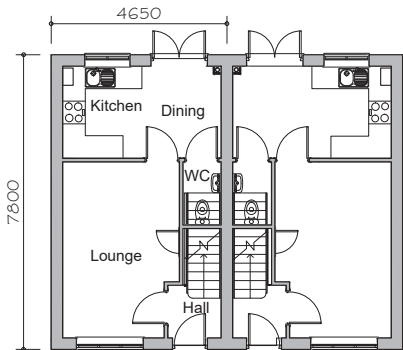
REAR ELEVATION



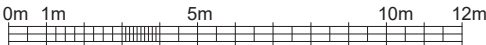
FIRST FLOOR PLAN



SIDE ELEVATION



GROUND FLOOR PLAN



PLANNING DRAWING

201 dwelling type

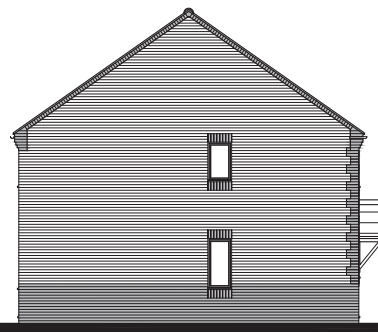
**GLEESON
HOMES & REGENERATION**

FLOOR AREA
60.48m², 651ft²

	Date	Scale
A. Internal layout revised	11.01.11	1:100 at A2
B. Brick detailing revised	15.02.12	
C. Ground floor WC revised	25.06.12	
D. Dimensions added	22.10.12	
E. Elevational styling revised	20.09.15	
F. Based on latest Rev 5 working drawings	27.09.14	Date
G. Based on latest Rev AP working drawings	10.06.19	
		July.10
		Dwg No
		201/1G



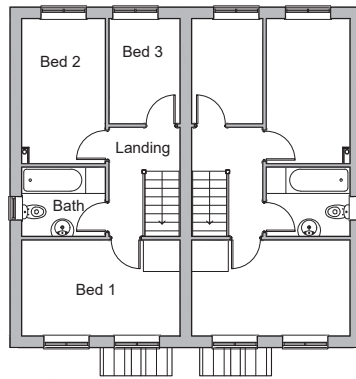
FRONT ELEVATION



SIDE ELEVATION



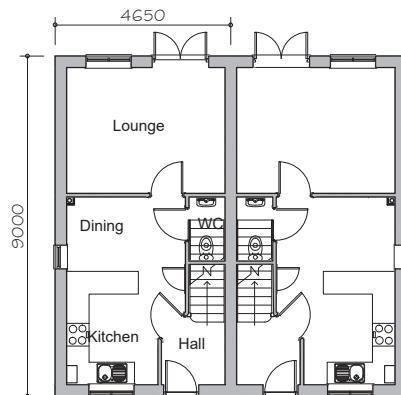
REAR ELEVATION



FIRST FLOOR PLAN



SIDE ELEVATION



GROUND FLOOR PLAN



FLOOR AREA
70.56m², 759ft²

PLANNING DRAWING

301 dwelling type

**GLEESON
HOMES & REGENERATION**

A	Type redesign	11.02.11	Scale
B	Front door canopy revised	25.05.11	
C	Brickwork detailing, front door option elevation	25.05.11	
D	Dimensions added	22.10.12	
E	Functional layout revised	20.09.13	
F	GP layout, rear window and patio door revised	06.12.14	
G	Based on latest Rev A1 working drawings	27.05.14	Date
H	Based on latest Rev A1 working drawings	10.06.19	
			July, 10
			Dwg No
			301/1H



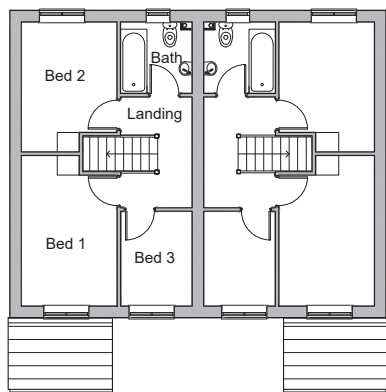
FRONT ELEVATION



SIDE ELEVATION



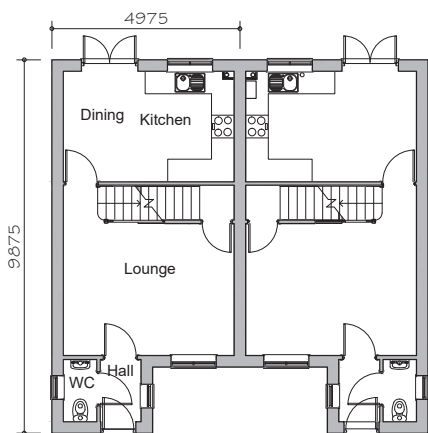
REAR ELEVATION



FIRST FLOOR PLAN



SIDE ELEVATION



GROUND FLOOR PLAN



FLOOR AREA
71.71m², 772ft²

PLANNING DRAWING

303 dwelling type

**GLEESON
HOMES & REGENERATION**

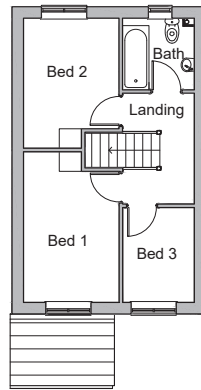
A	Minor external revisions and external details	29.02.11	Scale
B	Brick detailing, GF WC revised	29.06.12	
C	Dimensions added	22.10.12	1:100
D	Elevation detail revised	20.09.15	at A2
E	Based on latest Rev B working drawings	27.06.16	Date
			July.10
			Dwg No
			303/1E



FRONT ELEVATION

SIDE ELEVATION

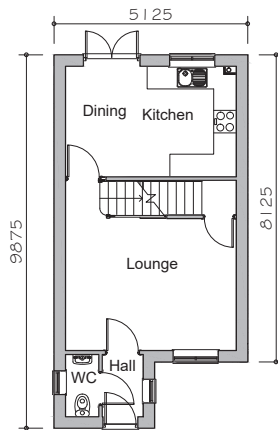
REAR ELEVATION



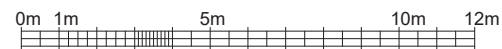
FIRST FLOOR PLAN



SIDE ELEVATION



GROUND FLOOR PLAN



PLANNING DRAWING

304 dwelling type

**GLEESON
HOMES & REGENERATION**

A. Redrawn, derived from 5025 type	29.09.11	Scale
B. Brickwork detailing, cf WC revised	29.08.12	
C. Dimensions added	22.10.12	1:100 at A2
D. Elevational styling revised	20.09.15	
E. Based on latest Rev P working drawings	27.06.16	Date
		July.10
		Dwg No
		304/1E



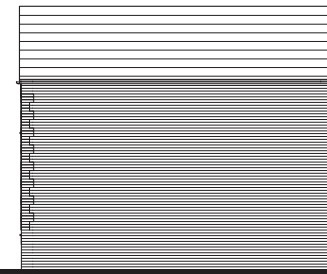
SIDE ELEVATION



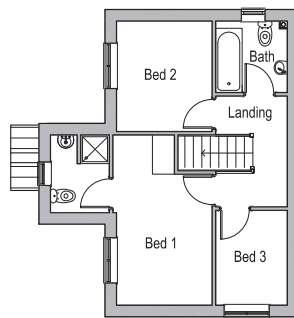
FRONT ELEVATION



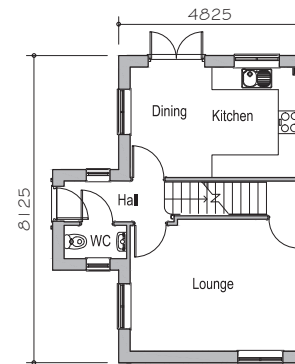
SIDE ELEVATION



REAR ELEVATION



FIRST FLOOR PLAN



GROUND FLOOR PLAN



FLOOR AREA
75.311m², 811ft²

PLANNING DRAWING

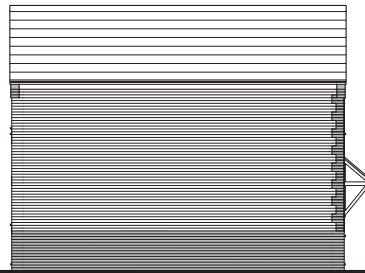
314 dwelling type

**GLEESON
HOMES & REGENERATION**

Scale	1:100 at A2
Date	Feb 2016
Dwg No	314/1-



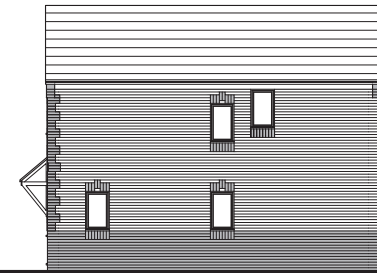
FRONT ELEVATION



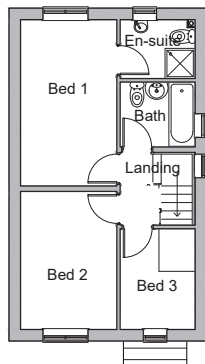
SIDE ELEVATION



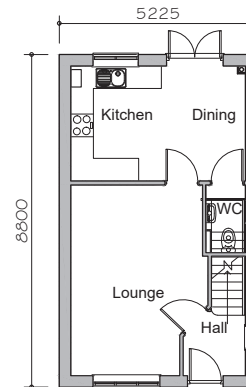
REAR ELEVATION



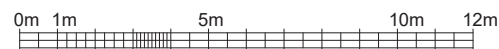
SIDE ELEVATION



FIRST FLOOR PLAN



GROUND FLOOR PLAN



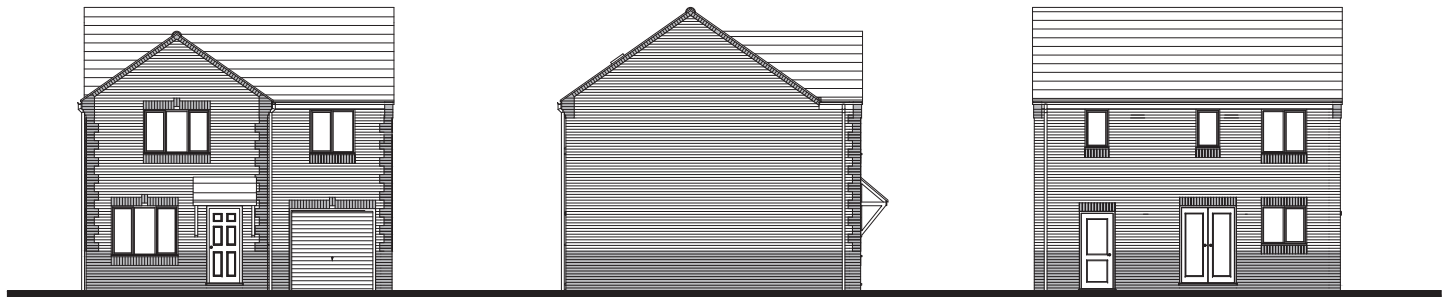
FLOOR AREA
75.85m², 816ft²

PLANNING DRAWING

315 dwelling type

**GLEESON
HOMES & REGENERATION**

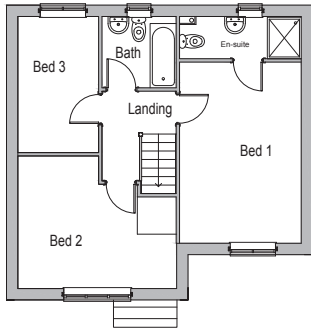
A1	Based on latest EIR AP working drawings	10.06.19	Scale
			1:100
			at A2
			Date
			May.18
			Dwg No
			315/1A



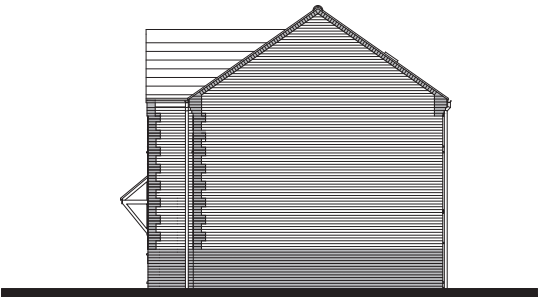
FRONT ELEVATION

SIDE ELEVATION

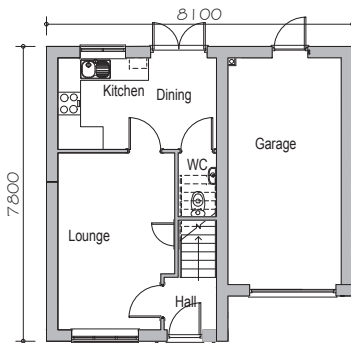
REAR ELEVATION



FIRST FLOOR PLAN



SIDE ELEVATION



GROUND FLOOR PLAN

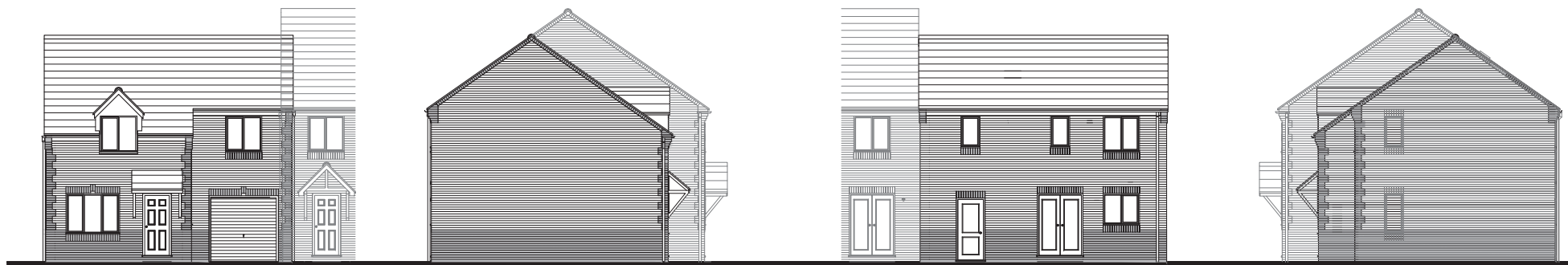


FLOOR AREA
80.25m², 864ft²

**PLANNING
DRAWING**

337 dwelling type
**GLEESON
HOMES & REGENERATION**

	Scale
	1:100 at A2
	Date
	Dec.19
	Dwg No
	337/1



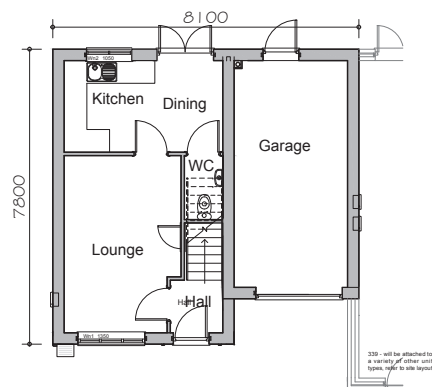
FRONT ELEVATION

339 - will be attached to a variety of others unit types, refer to site layout

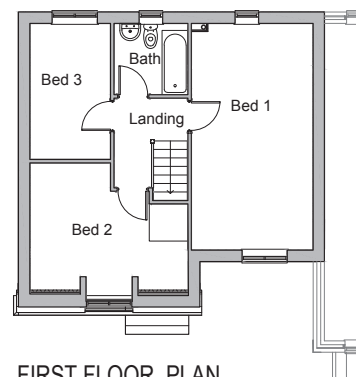
SIDE ELEVATION

REAR ELEVATION

SIDE ELEVATION



GROUND FLOOR PLAN



FIRST FLOOR PLAN



FLOOR AREA
77.96m², 839ft²

PLANNING DRAWING

339 dwelling type

**GLEESON
HOMES & REGENERATION**

	Scale
	1:100
	at A2
	Date
	Dec.19
	Dwg No
	339/1

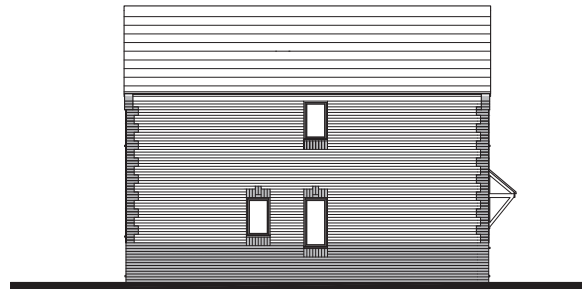


FRONT ELEVATION

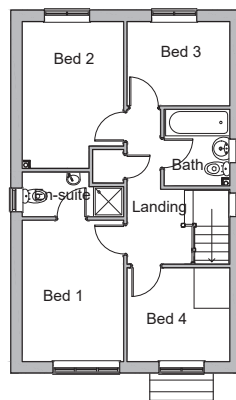
SIDE ELEVATION

REAR ELEVATION

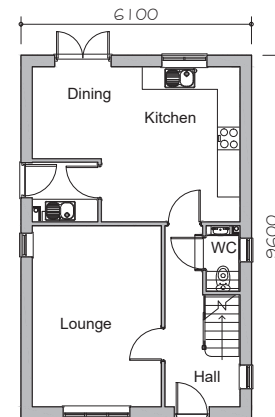
SIDE ELEVATION



SIDE ELEVATION
exposed corner plots



FIRST FLOOR PLAN



GROUND FLOOR PLAN



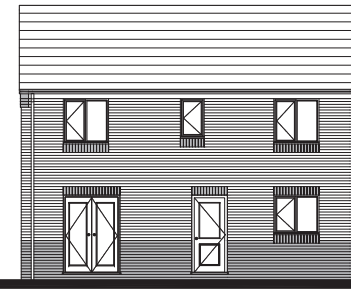
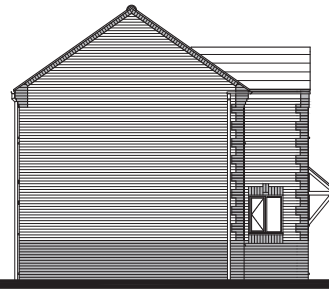
FLOOR AREA
99.00m², 1066ft²

PLANNING DRAWING

401 dwelling type

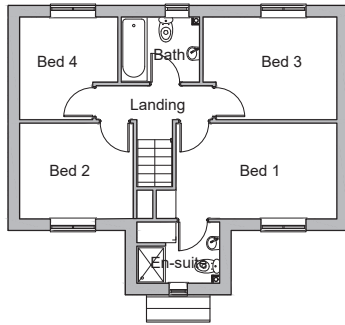
**GLEESON
HOMES & REGENERATION**

A. Kitchen & dining layout, external details.	29.02.11	Scale
B. Rear of layout revised, All side elevation added 19.07.11	05.09.12	1:100 at A2
C. Brickwork detailing, WC & landing window	22.10.12	
D. Dimensions added	20.09.15	Date
E. Elevational styling revised, Utility omitted kitchen Dining revised	15.11.15	
F. Utility added kitchen Dining revised	27.09.16	
G. Based on latest Rev D working drawings		
		July.10
		Dwg No
		401/1G

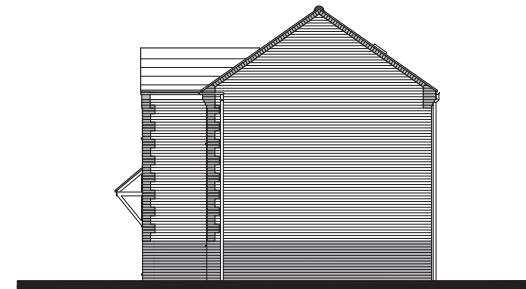


SIDE ELEVATION

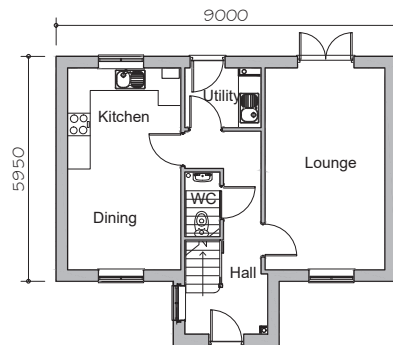
REAR ELEVATION



FIRST FLOOR PLAN



SIDE ELEVATION



GROUND FLOOR PLAN

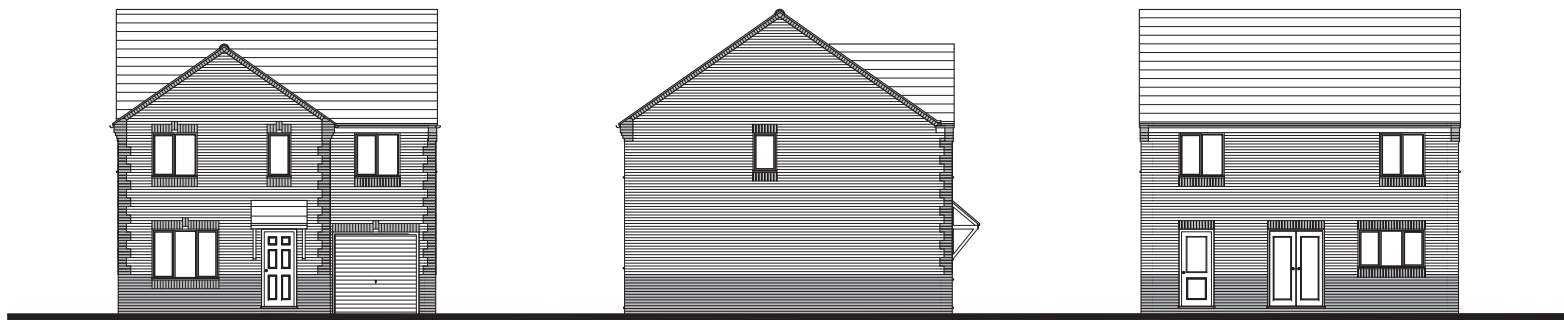
PLANNING DRAWING

403 dwelling type

**GLEESON
HOMES & REGENERATION**

A	Kitchen, bath and external detailing revised	24.02.11	Scale
B	Exterior sloper revised	25.05.11	
C	Updated to working drawings rev L	12.10.12	1:100 at A2
D	Dimensions added	22.10.12	
E	External styling revised	20.09.15	Date
F	Based on latest Rev J1 working drawings	28.09.14	
G	Based on latest Rev AP working drawings	15.04.19	
			July.10
			Dwg No
			403/1J

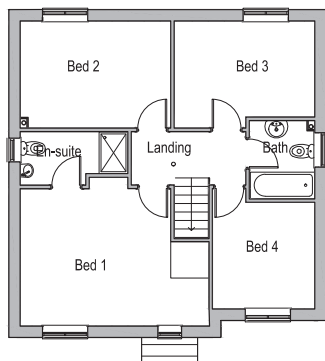
FLOOR AREA
97.36m², 1048ft²



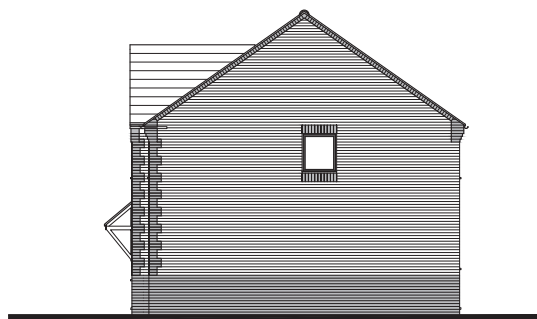
FRONT ELEVATION

SIDE ELEVATION

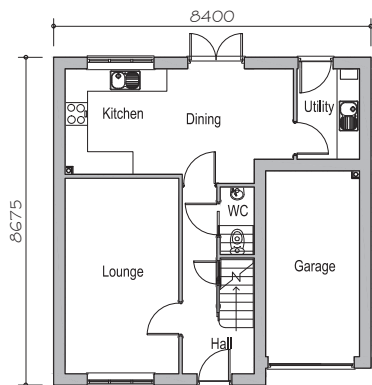
REAR ELEVATION



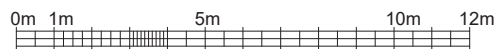
FIRST FLOOR PLAN



SIDE ELEVATION



GROUND FLOOR PLAN



FLOOR AREA
108.89m², 1172ft

PLANNING DRAWING

405 dwelling type

**GLEESON
HOMES & REGENERATION**

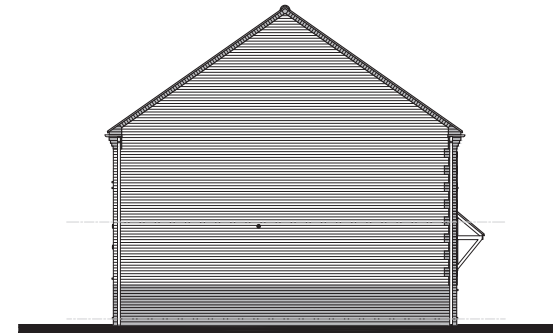
A. CP layout and external detailing revised	14.09.11	Scale
B. Dimensions added	22.10.12	
C. Elevational styling revised. Kitchen/ utility and bath, en-suite	26.09.15	1:100
Bed 2 & 4 layout revised	26.09.15	at A2
D. Based on latest Rev 'X' working drawings	26.09.14	Date
E. Based on latest Rev 'X' working drawings	19.10.15	
		July.10
		Dwg No
		405/1E



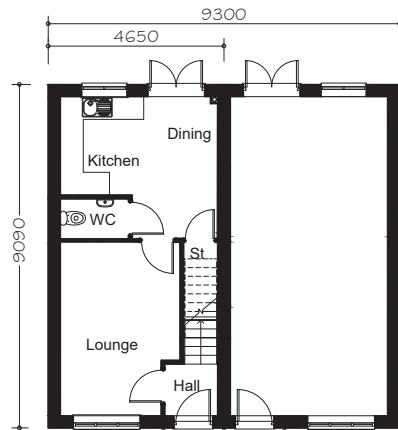
FRONT ELEVATION



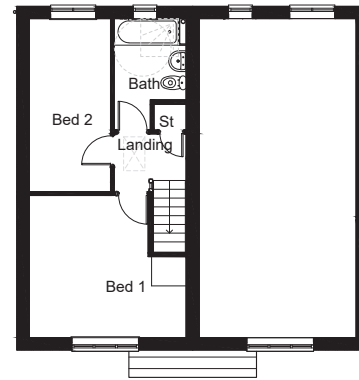
REAR ELEVATION



SIDE ELEVATION



GROUND FLOOR PLAN



FIRST FLOOR PLAN



FLOOR AREA
70.04m², 753ft²

PLANNING DRAWING

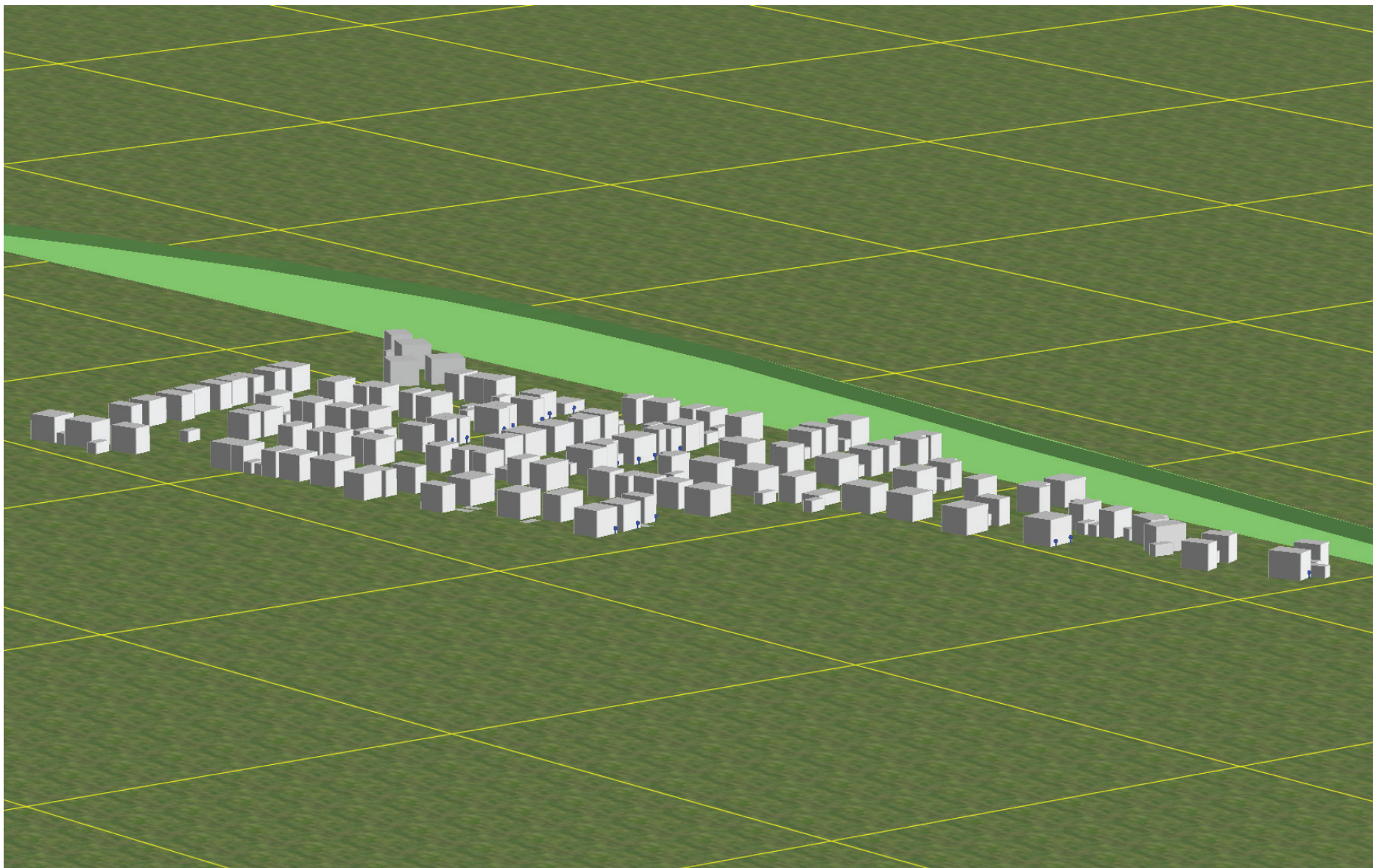
250 dwelling type

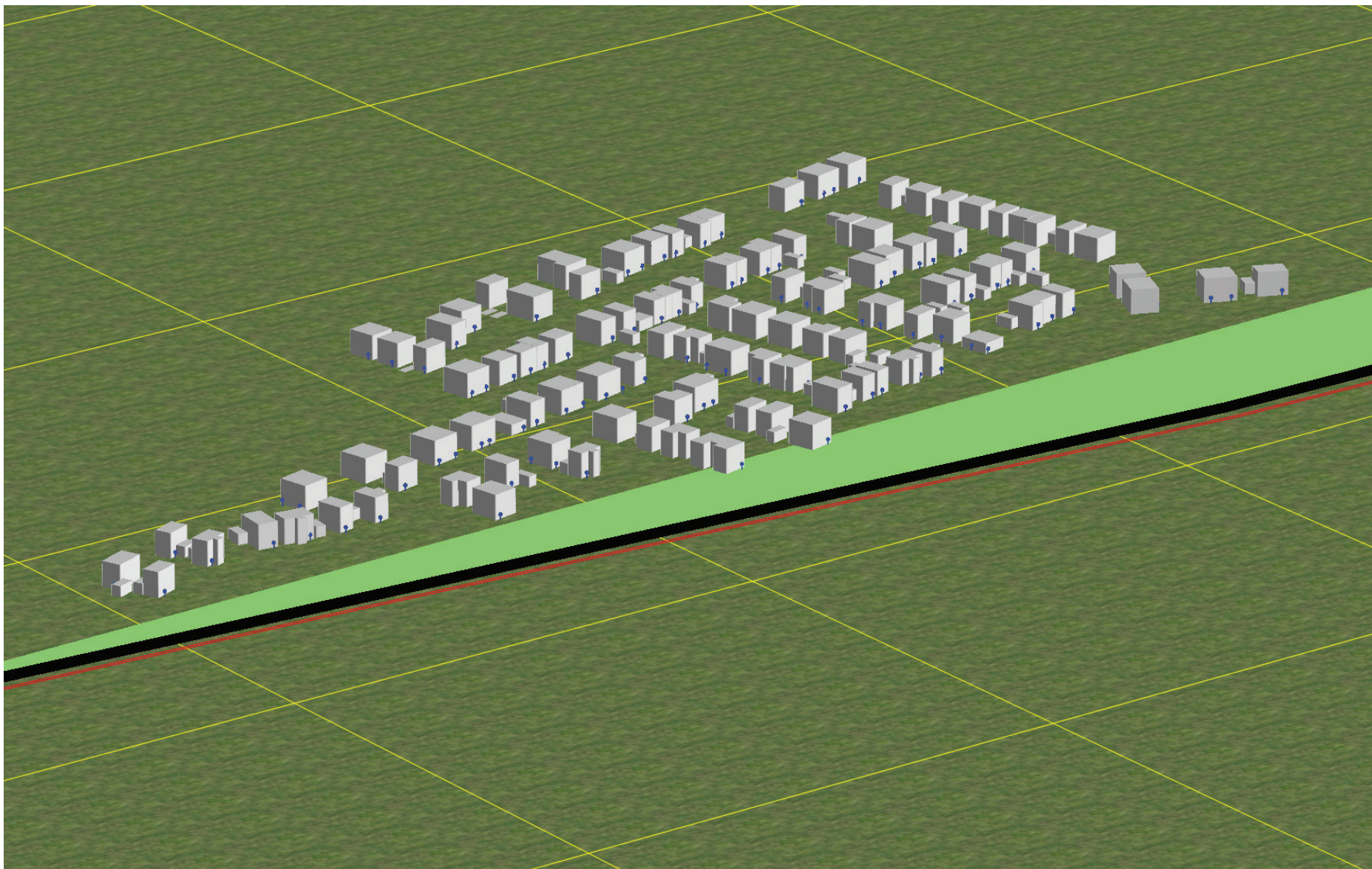
**GLEESON
HOMES & REGENERATION**

A	Start & PP Plans revised	21.02.20	Scale
B	WAK-21 requirements added	01.07.20	
			1:100 at A2
			Date
			Oct.19
			Dwg No
			250/1B

APPENDIX C

Computer Noise Prediction Model







Lockwood Road, Goldthorpe
Predicted LAeq,16hr - Daytime - Living Rooms

Report: Table of Results
Model: Daytime LAeq,16hr - Living Rooms - Rev 2 (July 21)
LAeq per octave: total results for receivers
Group: (main group)
Group Reduction: No

Name			Day								
Receiver	Description	Height	Total	63	125	250	500	1000	2000	4000	8000
_A	Plot 84	1.50	47	35	35	32	41	44	33	15	2
_A	Plot 100	1.50	47	34	34	31	41	44	33	15	3
_A	Plot 97	1.50	47	34	34	31	41	44	33	15	2
_A	Plot 81	1.50	46	34	34	31	40	43	32	14	1
_A	Plot 105	1.50	46	34	34	30	40	43	32	14	1
_A	Plot 108	1.50	45	33	33	30	39	42	31	13	--
_A	Plot 62	1.50	45	32	32	29	39	42	31	11	--
_A	Plot 59	1.50	45	32	32	30	39	42	31	12	--
_A	Plot 104	1.50	44	33	32	29	39	41	30	12	--
_A	Plot 57	1.50	44	32	32	29	39	41	30	11	--
_A	Plot 96	1.50	44	31	31	29	39	41	30	12	--
_A	Plot 109	1.50	44	32	32	29	38	41	30	12	--
_A	Plot 61	1.50	44	32	32	29	38	41	30	10	--
_A	Plot 82	1.50	44	32	31	28	38	41	30	11	--
_A	Plot 60	1.50	44	32	32	29	38	41	30	10	--
_A	Plot 102	1.50	44	32	32	28	38	41	30	13	--
_A	Plot 93	1.50	44	32	32	28	38	41	30	12	--
_A	Plot 56	1.50	44	32	32	29	38	41	29	10	--
_A	Plot 58	1.50	43	32	32	29	38	41	29	10	--
_A	Plot 55	1.50	43	31	32	29	38	40	29	10	--
Plot 98_A		1.50	43	31	31	28	37	41	30	11	--
_A	Plot 48	1.50	43	31	31	28	38	40	29	9	--
_A	Plot 85	1.50	43	30	30	27	37	40	29	11	--
_A	Plot 49	1.50	42	31	31	28	37	39	28	9	--
_A	Plot 99	1.50	42	30	30	27	36	39	28	10	--
_A	Plot 50	1.50	42	30	30	27	36	39	27	8	--
_A	Plot 83	1.50	41	29	29	26	36	39	27	9	--
_A	Plot 51	1.50	41	30	30	27	36	38	27	8	--
_A	Plot 52	1.50	41	28	28	25	35	39	27	7	--
_A	Plot 38	1.50	41	28	27	24	35	39	27	6	--
_A	Plot 54	1.50	41	30	29	26	35	38	27	8	--
_A	Plot 103	1.50	40	29	28	25	34	38	27	10	--
_A	Plot 37	1.50	40	27	27	24	34	38	27	6	--
_A	Plot 101	1.50	40	30	29	25	34	37	26	9	--
_A	Plot 36	1.50	40	26	27	24	34	38	27	6	--
_A	Plot 112	1.50	40	30	29	25	35	37	26	9	--
_A	Plot 86	1.50	40	29	28	24	34	38	27	9	--
_A	Plot 89	1.50	40	29	28	24	35	37	26	8	--
_A	Plot 33	1.50	40	26	26	24	34	38	27	5	--
_A	Plot 47	1.50	40	29	29	26	34	37	26	8	--

All shown dB values are A-weighted

Lockwood Road, Goldthorpe
Predicted LAeq,16hr - Daytime - Living Rooms

Report: Table of Results
Model: Daytime LAeq,16hr - Living Rooms - Rev 2 (July 21)
LAeq per octave: total results for receivers
Group: (main group)
Group Reduction: No

Name			Day								
Receiver	Description	Height	Total	63	125	250	500	1000	2000	4000	8000
_A	Plot 87	1.50	40	28	28	24	34	37	26	7	--
_A	Plot 88	1.50	40	29	28	24	34	37	26	7	--
_A	Plot 53	1.50	40	29	28	25	34	37	26	7	--
_A	Plot 34	1.50	40	26	26	23	34	37	26	5	--
_A	Plot 40	1.50	40	27	26	23	34	37	26	4	--
_A	Plot 31	1.50	39	25	25	23	34	37	26	3	--
_A	Plot 95	1.50	39	28	27	24	33	36	26	8	--
_A	Plot 113	1.50	39	29	28	24	33	36	25	7	--
_A	Plot 35	1.50	39	25	25	22	33	37	26	4	--
_A	Plot 94	1.50	39	29	28	24	33	36	25	8	--
_A	Plot 29	1.50	39	22	22	20	32	37	27	3	--
_A	Plot 114	1.50	39	28	27	24	33	36	25	7	--
_A	Plot 90	1.50	39	28	27	24	33	36	25	8	--
_A	Plot 32	1.50	39	25	25	22	33	37	26	3	--
_A	Plot 46	1.50	39	28	28	24	33	36	25	7	--
_A	Plot 42	1.50	39	27	26	23	33	36	25	4	--
_A	Plot 30	1.50	39	24	24	22	33	37	25	3	--
_A	Plot 115	1.50	39	28	27	23	32	36	25	6	--
_A	Plot 116	1.50	39	28	27	23	32	36	24	6	--
_A	Plot 63	1.50	38	27	26	23	33	35	24	5	--
_A	Plot 41	1.50	38	26	26	22	32	36	25	4	--
_A	Plot 117	1.50	38	28	27	23	32	35	24	5	--
_A	Plot 39	1.50	38	27	25	22	32	36	24	4	--
_A	Plot 91	1.50	38	27	26	23	32	35	24	7	--
_A	Plot 118	1.50	38	28	27	23	32	35	23	5	--
_A	Plot 28	1.50	38	25	24	22	32	35	24	1	--
_A	Plot 119	1.50	38	28	27	23	32	34	23	5	--
_A	Plot 92	1.50	38	26	25	23	32	35	24	6	--
_A	Plot 45	1.50	38	27	27	23	32	35	24	6	--
_A	Plot 120	1.50	38	28	27	23	32	34	23	4	--
_A	Plot 64	1.50	37	26	25	22	31	35	23	5	--
_A	Plot 111	1.50	37	27	26	22	31	34	23	6	--
_A	Plot 70	1.50	37	27	26	22	31	34	23	5	--
_A	Plot 44	1.50	37	26	25	22	31	34	23	5	--
_A	Plot 110	1.50	37	26	25	22	31	34	23	5	--
_A	Plot 121	1.50	37	27	26	22	31	33	22	4	--
_A	Plot 123	1.50	37	27	26	22	31	33	22	4	--
_A	Plot 122	1.50	36	27	26	22	31	33	22	4	--
_A	Plot 71	1.50	36	26	25	21	30	33	24	6	--
_A	Plot 72	1.50	36	26	25	21	30	33	22	5	--

All shown dB values are A-weighted

Lockwood Road, Goldthorpe
Predicted LAeq,16hr - Daytime - Living Rooms

Report: Table of Results
Model: Daytime LAeq,16hr - Living Rooms - Rev 2 (July 21)
LAeq per octave: total results for receivers
Group: (main group)
Group Reduction: No

Name			Day								
Receiver	Description	Height	Total	63	125	250	500	1000	2000	4000	8000
_A	Plot 74	1.50	36	25	24	21	30	33	22	3	--
_A	Plot 73	1.50	36	26	25	21	30	33	22	4	--
_A	Plot 66	1.50	36	25	25	21	30	33	22	3	--
_A	Plot 43	1.50	36	26	25	21	30	33	22	3	--
_A	Plot 65	1.50	36	26	25	21	30	33	22	4	--
_A	Plot 26	1.50	36	25	24	21	30	33	21	--	--
_A	Plot 21	1.50	36	25	24	20	30	33	23	1	--
_A	Plot 107	1.50	36	27	25	21	30	32	22	5	--
_A	Plot 25	1.50	35	24	23	19	29	33	23	--	--
_A	Plot 106	1.50	35	26	25	20	29	32	22	5	--
_A	Plot 128	1.50	35	26	25	21	29	32	20	1	--
_A	Plot 127	1.50	35	26	24	20	29	32	20	1	--
_A	Plot 67	1.50	35	25	24	20	29	32	21	2	--
_A	Plot 27	1.50	35	24	24	20	29	32	20	--	--
_A	Plot 129	1.50	35	26	24	20	29	32	20	1	--
_A	Plot 22	1.50	35	25	24	20	29	32	21	0	--
_A	Plot 124	1.50	35	25	24	20	29	32	20	0	--
_A	Plot 80	1.50	35	25	24	20	29	32	20	1	--
_A	Plot 20	1.50	35	25	24	20	29	32	21	0	--
_A	Plot 68	1.50	35	24	24	20	28	32	21	2	--
_A	Plot 125	1.50	35	25	24	20	28	32	20	0	--
_A	Plot 126	1.50	35	25	24	20	29	31	20	1	--
_A	Plot 17	1.50	34	24	23	20	29	31	21	2	--
_A	Plot 69	1.50	34	24	22	18	28	31	20	1	--
_A	Plot 12	1.50	34	25	23	20	29	31	19	--	--
_A	Plot 79	1.50	34	25	23	19	29	31	19	--	--
_A	Plot 76	1.50	34	25	23	20	28	31	19	--	--
_A	Plot 135	1.50	34	24	23	19	28	31	19	--	--
_A	Plot 15	1.50	34	24	22	19	28	31	20	0	--
_A	Plot 18	1.50	34	25	24	20	28	30	19	--	--
_A	Plot 77	1.50	34	25	24	20	28	31	19	--	--
_A	Plot 19	1.50	34	25	24	20	28	30	19	--	--
_A	Plot 134	1.50	34	24	23	19	28	31	18	--	--
_A	Plot 14	1.50	34	25	23	19	28	31	19	--	--
_A	Plot 11	1.50	34	24	23	19	28	30	18	--	--
_A	Plot 78	1.50	34	25	23	19	28	30	19	--	--
_A	Plot 3	1.50	34	24	23	19	28	30	18	--	--
_A	Plot 13	1.50	34	24	23	19	28	30	19	--	--
_A	Plot 130	1.50	34	24	23	19	28	30	19	--	--
_A	Plot 7	1.50	33	24	23	19	28	30	18	--	--

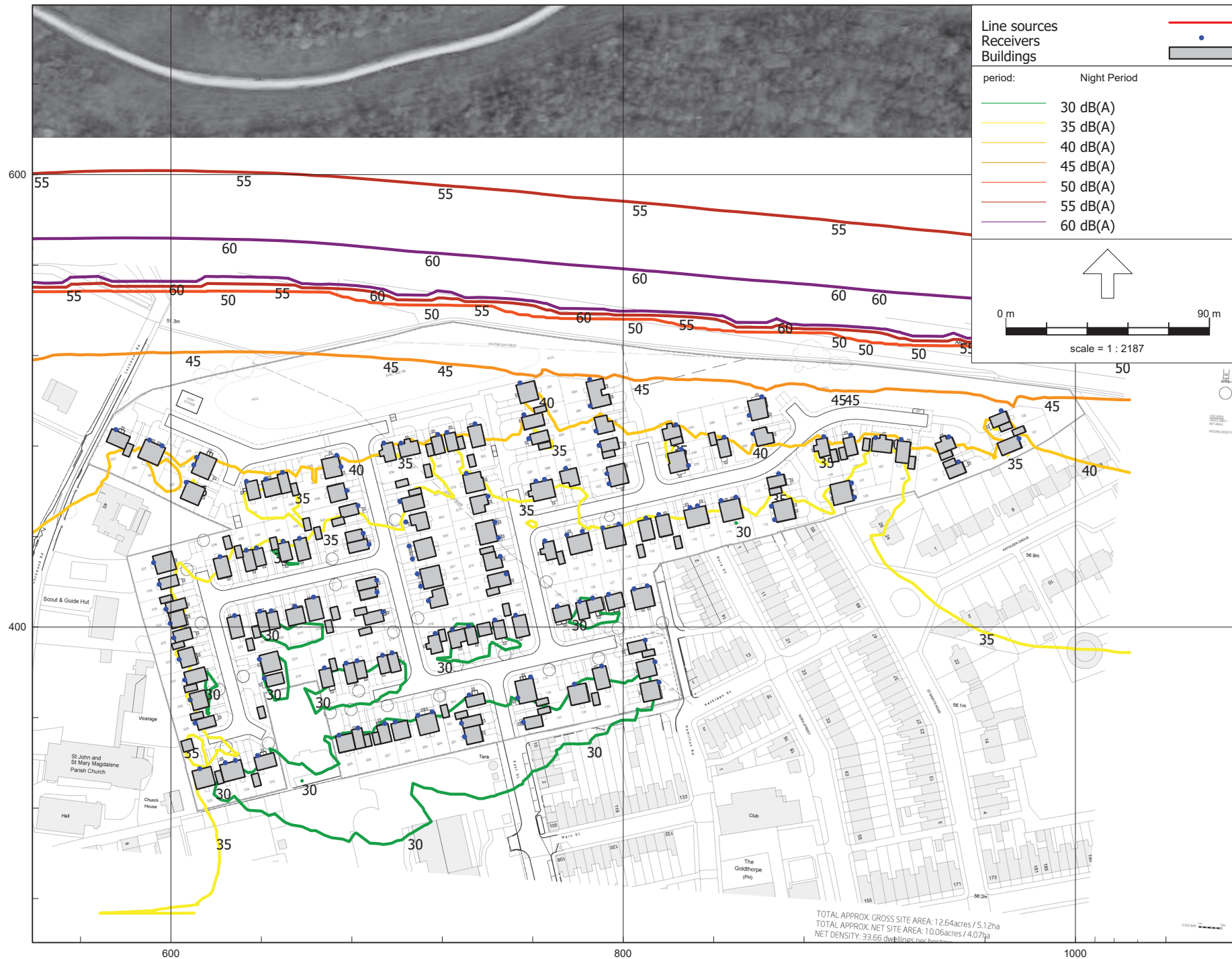
All shown dB values are A-weighted

Lockwood Road, Goldthorpe
Predicted LAeq,16hr - Daytime - Living Rooms

Report: Table of Results
 Model: Daytime LAeq,16hr - Living Rooms - Rev 2 (July 21)
 LAeq per octave: total results for receivers
 Group: (main group)
 Group Reduction: No

Name			Day								
Receiver	Description	Height	Total	63	125	250	500	1000	2000	4000	8000
_A	Plot 131	1.50	33	24	23	19	28	30	18	--	--
_A	Plot 5	1.50	33	24	23	19	27	30	18	--	--
_A	Plot 10	1.50	33	24	22	19	28	30	18	--	--
_A	Plot 8	1.50	33	24	23	19	27	30	18	--	--
_A	Plot 6	1.50	33	24	23	19	27	30	17	--	--
_A	Plot 132	1.50	33	24	22	18	27	30	18	--	--
_A	Plot 4	1.50	33	24	23	18	27	30	18	--	--
_A	Plot 9	1.50	33	24	22	18	27	30	17	--	--
_A	Plot 133	1.50	33	24	22	18	27	29	17	--	--
_A	Plot 23	1.50	33	22	20	16	27	30	19	--	--
_A	Plot 16	1.50	33	23	21	17	26	30	19	0	--
_A	Plot 24	1.50	33	22	20	16	27	30	22	--	--
_A	Plot 136	1.50	31	22	20	16	25	28	17	--	--
_A	Plot 137	1.50	31	22	20	16	25	28	16	--	--
_A	Plot 2	1.50	30	20	20	16	25	27	16	--	--
_A	Plot 1	1.50	30	21	19	15	25	27	16	--	--
_A	Plot 75	1.50	--	--	--	--	--	--	--	--	--

All shown dB values are A-weighted



Lockwood Road, Goldthorpe
Predicted LAeq,8hr - Night-time - Bedrooms

Report: Table of Results
Model: Night-time LAeq,8hr - Bedrooms - Rev 2 (July 21)
LAeq per octave: total results for receivers
Group: (main group)
Group Reduction: No

Name			Night								
Receiver	Description	Height	Total	63	125	250	500	1000	2000	4000	8000
_A	Plot 84	4.50	45	32	32	27	40	42	31	9	--
_A	Plot 100	4.50	44	32	32	26	39	41	30	9	--
_A	Plot 97	4.50	44	32	32	26	39	41	30	9	--
_A	Plot 81	4.50	43	31	32	26	38	40	29	8	--
_A	Plot 105	4.50	43	29	29	25	38	40	29	7	--
_A	Plot 108	4.50	42	30	30	24	37	39	28	6	--
_A	Plot 62	4.50	42	29	29	24	37	39	27	4	--
_A	Plot 104	4.50	41	30	30	24	36	38	27	6	--
_A	Plot 109	4.50	41	30	30	24	36	38	27	6	--
_A	Plot 82	4.50	41	29	29	23	36	38	27	4	--
_A	Plot 59	4.50	41	28	28	24	36	38	27	5	--
_A	Plot 102	4.50	41	29	29	23	36	38	27	6	--
_A	Plot 96	4.50	41	29	29	24	36	38	27	5	--
_A	Plot 93	4.50	41	29	29	23	36	38	27	6	--
_A	Plot 61	4.50	41	29	29	23	36	38	26	4	--
_A	Plot 57	4.50	41	29	29	23	36	38	26	4	--
_A	Plot 60	4.50	41	29	29	23	36	38	26	4	--
Plot 98_A		4.50	40	29	28	23	35	38	27	5	--
_A	Plot 56	4.50	40	29	29	23	35	37	26	3	--
_A	Plot 48	4.50	40	29	29	23	35	37	26	3	--
_A	Plot 58	4.50	40	29	29	23	35	37	26	3	--
_A	Plot 85	4.50	40	28	28	22	35	37	26	5	--
_A	Plot 47	4.50	40	28	28	23	35	37	25	2	--
_A	Plot 55	4.50	40	28	29	23	35	37	25	3	--
_A	Plot 101	4.50	39	29	28	22	34	36	25	5	--
_A	Plot 49	4.50	39	28	28	22	34	36	24	1	--
_A	Plot 99	4.50	39	28	28	21	34	36	25	3	--
_A	Plot 50	4.50	38	27	27	21	33	35	23	1	--
_A	Plot 83	4.50	38	27	26	21	33	35	24	2	--
_A	Plot 52	4.50	38	26	26	20	33	35	24	0	--
_A	Plot 89	4.50	38	27	26	20	33	35	23	1	--
_A	Plot 51	4.50	38	27	27	21	33	34	23	1	--
_A	Plot 94	4.50	38	27	27	20	33	34	23	2	--
_A	Plot 38	4.50	38	25	25	20	32	35	24	--	--
_A	Plot 86	4.50	38	27	26	20	32	35	24	2	--
_A	Plot 39	4.50	38	25	25	19	33	35	23	--	--
_A	Plot 103	4.50	38	27	27	20	32	35	23	2	--
_A	Plot 112	4.50	37	27	27	20	32	34	23	1	--
_A	Plot 40	4.50	37	25	25	19	32	35	23	--	--
_A	Plot 54	4.50	37	27	27	20	32	34	23	1	--

All shown dB values are A-weighted

Lockwood Road, Goldthorpe
Predicted LAeq,8hr - Night-time - Bedrooms

Report: Table of Results
Model: Night-time LAeq,8hr - Bedrooms - Rev 2 (July 21)
LAeq per octave: total results for receivers
Group: (main group)
Group Reduction: No

Name			Night								
Receiver	Description	Height	Total	63	125	250	500	1000	2000	4000	8000
_A	Plot 95	4.50	37	26	26	19	33	34	23	1	--
_A	Plot 87	4.50	37	26	25	19	32	34	23	0	--
_A	Plot 88	4.50	37	26	26	19	32	34	22	--	--
_A	Plot 37	4.50	37	24	24	19	32	34	23	--	--
_A	Plot 41	4.50	37	25	25	19	32	34	22	--	--
_A	Plot 42	4.50	37	25	25	19	31	34	22	--	--
_A	Plot 70	4.50	37	26	25	18	31	34	23	--	--
_A	Plot 113	4.50	37	26	26	19	32	33	22	--	--
_A	Plot 36	4.50	37	24	24	18	31	34	23	--	--
_A	Plot 53	4.50	37	26	26	19	32	33	22	0	--
_A	Plot 90	4.50	36	26	25	19	31	33	22	1	--
_A	Plot 114	4.50	36	26	25	19	31	33	22	--	--
_A	Plot 35	4.50	36	24	24	18	31	34	23	--	--
_A	Plot 63	4.50	36	25	25	19	31	33	22	--	--
_A	Plot 115	4.50	36	26	25	19	31	33	22	--	--
_A	Plot 116	4.50	36	26	25	18	31	33	22	--	--
_A	Plot 34	4.50	36	24	24	18	31	33	22	--	--
_A	Plot 46	4.50	36	25	25	19	31	33	22	--	--
_A	Plot 33	4.50	36	23	24	18	31	33	22	--	--
_A	Plot 32	4.50	36	23	23	18	31	33	22	--	--
_A	Plot 29	4.50	36	23	23	18	31	33	22	--	--
_A	Plot 31	4.50	36	23	23	17	31	33	22	--	--
_A	Plot 117	4.50	36	26	25	18	30	33	21	--	--
_A	Plot 64	4.50	36	24	24	18	31	33	21	--	--
_A	Plot 30	4.50	36	23	23	17	30	33	22	--	--
_A	Plot 118	4.50	35	26	25	18	30	32	20	--	--
_A	Plot 91	4.50	35	25	24	19	31	32	21	--	--
_A	Plot 28	4.50	35	23	23	17	30	32	21	--	--
_A	Plot 92	4.50	35	25	24	18	30	32	21	--	--
_A	Plot 119	4.50	35	25	25	18	30	32	20	--	--
_A	Plot 120	4.50	35	25	24	18	30	31	20	--	--
_A	Plot 45	4.50	35	25	24	18	30	32	20	--	--
_A	Plot 107	4.50	35	25	24	18	30	31	20	--	--
_A	Plot 121	4.50	35	25	24	18	30	31	20	--	--
_A	Plot 27	4.50	35	22	22	16	29	32	21	--	--
_A	Plot 122	4.50	35	25	24	17	30	31	19	--	--
_A	Plot 111	4.50	35	25	24	18	30	31	20	--	--
_A	Plot 123	4.50	34	25	24	17	30	31	19	--	--
_A	Plot 26	4.50	34	22	22	15	28	32	21	--	--
_A	Plot 66	4.50	34	23	23	17	29	31	19	--	--

All shown dB values are A-weighted

Lockwood Road, Goldthorpe
Predicted LAeq,8hr - Night-time - Bedrooms

Report: Table of Results
Model: Night-time LAeq,8hr - Bedrooms - Rev 2 (July 21)
LAeq per octave: total results for receivers
Group: (main group)
Group Reduction: No

Name			Night								
Receiver	Description	Height	Total	63	125	250	500	1000	2000	4000	8000
_A	Plot 44	4.50	34	23	23	16	29	31	20	--	--
_A	Plot 21	4.50	34	23	23	16	29	31	20	--	--
_A	Plot 71	4.50	34	24	23	16	29	31	21	--	--
_A	Plot 106	4.50	34	25	24	17	29	30	19	--	--
_A	Plot 65	4.50	34	24	23	17	29	30	20	--	--
_A	Plot 72	4.50	34	24	23	16	29	30	19	--	--
_A	Plot 110	4.50	34	24	23	17	29	30	19	--	--
_A	Plot 25	4.50	34	22	22	16	28	31	20	--	--
_A	Plot 43	4.50	34	23	22	16	28	31	19	--	--
_A	Plot 74	4.50	34	23	22	17	29	30	19	--	--
_A	Plot 73	4.50	33	24	23	16	28	30	19	--	--
_A	Plot 22	4.50	33	24	23	16	28	30	19	--	--
_A	Plot 67	4.50	33	23	22	16	28	30	19	--	--
_A	Plot 20	4.50	33	23	22	16	28	30	19	--	--
_A	Plot 129	4.50	33	24	23	16	28	30	18	--	--
_A	Plot 128	4.50	33	24	23	16	28	30	18	--	--
_A	Plot 127	4.50	33	24	23	16	28	30	17	--	--
_A	Plot 124	4.50	33	23	22	16	28	29	17	--	--
_A	Plot 18	4.50	33	23	22	16	28	29	18	--	--
_A	Plot 125	4.50	33	23	22	15	27	29	17	--	--
_A	Plot 126	4.50	33	23	22	15	27	29	17	--	--
_A	Plot 68	4.50	33	23	22	15	27	29	18	--	--
_A	Plot 80	4.50	33	23	22	15	28	29	17	--	--
_A	Plot 19	4.50	33	23	22	15	27	29	18	--	--
_A	Plot 76	4.50	33	23	22	15	27	29	17	--	--
_A	Plot 11	4.50	32	23	22	15	27	29	17	--	--
_A	Plot 79	4.50	32	23	22	15	27	29	17	--	--
_A	Plot 12	4.50	32	23	22	15	27	29	17	--	--
_A	Plot 77	4.50	32	23	22	15	27	29	17	--	--
_A	Plot 78	4.50	32	23	22	15	27	29	17	--	--
_A	Plot 135	4.50	32	22	22	15	27	29	17	--	--
_A	Plot 134	4.50	32	22	22	15	27	29	17	--	--
_A	Plot 14	4.50	32	23	22	15	27	29	18	--	--
_A	Plot 17	4.50	32	22	21	15	27	29	18	--	--
_A	Plot 13	4.50	32	23	22	15	27	29	17	--	--
_A	Plot 3	4.50	32	22	21	15	27	29	16	--	--
_A	Plot 69	4.50	32	22	21	14	27	29	17	--	--
_A	Plot 15	4.50	32	22	21	14	27	29	17	--	--
_A	Plot 5	4.50	32	22	21	15	27	28	16	--	--
_A	Plot 6	4.50	32	22	21	14	26	28	16	--	--

All shown dB values are A-weighted

Lockwood Road, Goldthorpe
Predicted LAeq,8hr - Night-time - Bedrooms

Report: Table of Results
 Model: Night-time LAeq,8hr - Bedrooms - Rev 2 (July 21)
 LAeq per octave: total results for receivers
 Group: (main group)
 Group Reduction: No

Name			Night								
Receiver	Description	Height	Total	63	125	250	500	1000	2000	4000	8000
_A	Plot 10	4.50	32	23	21	15	27	28	16	--	--
_A	Plot 7	4.50	32	22	21	14	26	28	16	--	--
_A	Plot 23	4.50	32	21	20	13	26	29	18	--	--
_A	Plot 8	4.50	32	22	21	14	26	28	16	--	--
_A	Plot 133	4.50	32	22	21	14	26	28	16	--	--
_A	Plot 4	4.50	32	22	21	14	26	28	16	--	--
_A	Plot 9	4.50	31	22	21	14	26	28	16	--	--
_A	Plot 24	4.50	31	21	20	13	26	28	19	--	--
_A	Plot 130	4.50	31	22	21	14	26	27	15	--	--
_A	Plot 16	4.50	31	21	20	13	26	27	16	--	--
_A	Plot 131	4.50	31	22	21	14	25	27	15	--	--
_A	Plot 132	4.50	30	21	20	13	25	26	15	--	--
_A	Plot 136	4.50	30	20	19	13	25	27	15	--	--
_A	Plot 137	4.50	29	20	19	12	24	26	14	--	--
_A	Plot 2	4.50	29	20	19	13	24	26	14	--	--
_A	Plot 1	4.50	29	20	19	12	24	25	13	--	--
_A	Plot 75	4.50	--	--	--	--	--	--	--	--	--

All shown dB values are A-weighted

Lockwood Road, Goldthorpe
Predicted LAFmax - Night-time - Plot 81

Report:	Table of Results
Model:	Night-time LAFmax - Bedrooms - Rev 2 (July 21)
LAeq per octave:	by Source/Group for receiver _A - Plot 81
Group:	(main group)
Group Reduction:	No

[illegible]

All shown dB values are A-weighted

Lockwood Road, Goldthorpe
Predicted LAFmax - Night-time - Plot 84

Report: Table of Results
Model: Night-time LAFmax - Bedrooms - Rev 2 (July 21)
LAeq per octave: by Source/Group for receiver _A - Plot 84
Group: (main group)
Group Reduction: No

Name			Night								
Source/Group	Description	Height	Total	63	125	250	500	1000	2000	4000	8000
_A	Plot 84	4.50	78	61	62	58	72	76	68	50	35
	A635 - LAFmax	0.50	60	43	44	39	54	58	50	32	19
	A635 - LAFmax	0.50	60	43	44	39	54	58	50	32	19
	A635 - LAFmax	0.50	60	43	44	39	54	58	50	32	19
	A635 - LAFmax	0.50	60	43	44	39	54	58	50	32	19
	A635 - LAFmax	0.50	60	43	44	39	54	58	50	32	19
	A635 - LAFmax	0.50	60	43	44	39	54	58	50	32	19
	A635 - LAFmax	0.50	60	43	44	39	54	58	50	32	19
	A635 - LAFmax	0.50	60	43	44	39	54	58	50	32	19
	A635 - LAFmax	0.50	60	42	44	39	53	58	49	32	18
	A635 - LAFmax	0.50	60	42	44	39	53	58	49	32	18
	A635 - LAFmax	0.50	60	42	44	39	53	57	49	32	18
	A635 - LAFmax	0.50	60	42	43	39	53	57	49	32	18
	A635 - LAFmax	0.50	60	42	43	39	53	57	49	32	18
	A635 - LAFmax	0.50	59	42	43	39	53	57	49	32	18
	A635 - LAFmax	0.50	59	42	43	39	53	57	49	32	18
	A635 - LAFmax	0.50	59	42	43	39	53	57	49	32	18
	A635 - LAFmax	0.50	59	42	43	39	53	57	49	32	18
	A635 - LAFmax	0.50	59	42	43	39	53	57	49	32	18
	A635 - LAFmax	0.50	59	42	43	38	53	57	49	31	17
	A635 - LAFmax	0.50	59	42	43	38	53	57	49	31	17
	A635 - LAFmax	0.50	59	42	43	38	53	57	49	31	17
	A635 - LAFmax	0.50	59	42	43	38	53	57	49	31	17
	A635 - LAFmax	0.50	59	42	43	38	52	57	48	31	17
	A635 - LAFmax	0.50	59	41	43	38	52	57	48	31	17
	A635 - LAFmax	0.50	59	41	42	38	52	56	48	31	17
	A635 - LAFmax	0.50	59	41	42	38	52	56	48	31	17
	A635 - LAFmax	0.50	58	41	42	38	52	56	48	31	16
	A635 - LAFmax	0.50	58	41	42	38	52	56	48	31	16
	A635 - LAFmax	0.50	58	41	42	38	52	56	48	30	16
	A635 - LAFmax	0.50	58	41	42	38	52	56	48	30	16
	A635 - LAFmax	0.50	58	41	42	37	52	56	48	30	16
	A635 - LAFmax	0.50	58	41	42	37	52	56	48	30	16
	A635 - LAFmax	0.50	58	41	42	37	52	56	48	30	16
	A635 - LAFmax	0.50	58	41	42	37	52	56	48	30	15
	A635 - LAFmax	0.50	58	41	42	37	51	56	47	30	15
	A635 - LAFmax	0.50	58	40	42	37	51	55	47	30	15

All shown dB values are A-weighted

Lockwood Road, Goldthorpe
Predicted LAFmax - Night-time - Plot 93

Report: Table of Results
Model: Night-time LAFmax - Bedrooms - Rev 2 (July 21)
LAeq per octave: by Source/Group for receiver _A - Plot 93
Group: (main group)
Group Reduction: No

Name			Night								
Source/Group	Description	Height	Total	63	125	250	500	1000	2000	4000	8000
_A	Plot 93	4.50	76	58	60	55	70	74	66	47	31
	A635 - LAFmax	0.50	57	39	40	36	50	55	47	29	14
	A635 - LAFmax	0.50	57	38	39	35	49	55	47	29	13
	A635 - LAFmax	0.50	57	38	39	34	49	55	47	29	13
	A635 - LAFmax	0.50	57	38	39	34	49	55	47	29	13
	A635 - LAFmax	0.50	57	39	40	36	50	54	47	29	14
	A635 - LAFmax	0.50	57	39	40	36	50	54	47	29	14
	A635 - LAFmax	0.50	57	38	39	34	49	55	47	29	12
	A635 - LAFmax	0.50	57	39	40	36	50	54	47	29	14
	A635 - LAFmax	0.50	56	39	40	36	50	54	47	29	14
	A635 - LAFmax	0.50	56	39	40	36	50	54	46	28	13
	A635 - LAFmax	0.50	56	37	39	34	49	55	47	29	12
	A635 - LAFmax	0.50	56	39	40	36	50	54	47	29	14
	A635 - LAFmax	0.50	56	39	40	36	50	54	46	28	13
	A635 - LAFmax	0.50	56	39	40	36	50	54	46	28	13
	A635 - LAFmax	0.50	56	39	40	36	50	54	46	28	13
	A635 - LAFmax	0.50	56	39	40	36	50	54	47	29	13
	A635 - LAFmax	0.50	56	39	40	36	50	54	46	28	13
	A635 - LAFmax	0.50	56	37	38	33	50	54	46	28	11
	A635 - LAFmax	0.50	56	39	40	36	50	54	46	28	13
	A635 - LAFmax	0.50	56	39	40	36	50	54	46	28	13
	A635 - LAFmax	0.50	56	39	40	36	50	54	46	28	13
	A635 - LAFmax	0.50	56	37	38	33	50	54	46	28	11
	A635 - LAFmax	0.50	56	39	40	36	50	54	46	28	13
	A635 - LAFmax	0.50	56	37	38	33	50	54	46	28	11
	A635 - LAFmax	0.50	56	39	40	36	50	54	46	28	13
	A635 - LAFmax	0.50	56	37	38	33	50	54	46	27	10
	A635 - LAFmax	0.50	56	39	40	35	50	54	46	28	12
	A635 - LAFmax	0.50	56	39	40	35	50	54	46	28	12
	A635 - LAFmax	0.50	56	39	40	35	50	54	46	28	12

All shown dB values are A-weighted

Lockwood Road, Goldthorpe
Predicted LAFmax - Night-time - Plot 97

Report:	Table of Results
Model:	Night-time LAFmax - Bedrooms - Rev 2 (July 21)
LAeq per octave:	by Source/Group for receiver _A - Plot 97
Group:	(main group)
Group Reduction:	No

[illegible]

All shown dB values are A-weighted

Lockwood Road, Goldthorpe
Predicted LAFmax - Night-time - Plot 100

Report: Table of Results
Model: Night-time LAFmax - Bedrooms - Rev 2 (July 21)
LAeq per octave: by Source/Group for receiver _A - Plot 100
Group: (main group)
Group Reduction: No

Name			Night								
Source/Group	Description	Height	Total	63	125	250	500	1000	2000	4000	8000
_A	Plot 100	4.50	78	61	62	58	72	76	68	50	35
	A635 - LAFmax	0.50	60	43	44	40	54	58	50	33	20
	A635 - LAFmax	0.50	60	43	44	40	54	58	50	33	20
	A635 - LAFmax	0.50	60	43	44	40	54	58	50	33	19
	A635 - LAFmax	0.50	60	43	44	40	54	58	50	33	19
	A635 - LAFmax	0.50	60	43	44	40	54	58	50	33	19
	A635 - LAFmax	0.50	60	43	44	40	54	58	50	33	19
	A635 - LAFmax	0.50	60	43	44	40	54	58	50	33	19
	A635 - LAFmax	0.50	60	43	44	40	54	58	50	33	19
	A635 - LAFmax	0.50	60	43	44	39	54	58	50	33	19
	A635 - LAFmax	0.50	60	43	44	39	54	58	50	33	19
	A635 - LAFmax	0.50	60	43	44	39	54	58	50	33	19
	A635 - LAFmax	0.50	60	43	44	39	54	58	50	33	19
	A635 - LAFmax	0.50	60	43	44	39	54	58	50	32	19
	A635 - LAFmax	0.50	60	43	44	39	54	58	50	32	19
	A635 - LAFmax	0.50	60	43	44	39	54	58	50	32	19
	A635 - LAFmax	0.50	60	42	44	39	53	58	49	32	18
	A635 - LAFmax	0.50	60	42	44	39	53	58	49	32	18
	A635 - LAFmax	0.50	60	42	43	39	53	57	49	32	18
	A635 - LAFmax	0.50	60	42	43	39	53	57	49	32	18
	A635 - LAFmax	0.50	59	42	43	39	53	57	49	32	18
	A635 - LAFmax	0.50	59	42	43	39	53	57	49	32	18
	A635 - LAFmax	0.50	59	42	43	38	53	57	49	31	17
	A635 - LAFmax	0.50	59	42	43	38	53	57	49	31	17
	A635 - LAFmax	0.50	59	41	43	38	53	57	49	31	17
	A635 - LAFmax	0.50	59	42	43	38	53	57	49	31	17
	A635 - LAFmax	0.50	59	41	43	38	52	56	48	31	17
	A635 - LAFmax	0.50	59	41	43	38	52	56	48	31	17
	A635 - LAFmax	0.50	58	41	42	38	52	56	48	31	16
	A635 - LAFmax	0.50	58	41	42	38	52	56	48	31	16
	A635 - LAFmax	0.50	58	41	42	37	52	56	48	30	16
	A635 - LAFmax	0.50	58	41	42	37	52	56	48	30	15
	A635 - LAFmax	0.50	58	41	42	37	51	56	47	30	16

All shown dB values are A-weighted

Lockwood Road, Goldthorpe

Report:	Table of Results
Model:	Night-time LAFmax - Bedrooms - Rev 2 (July 21)
LAeq per octave:	by Source/Group for receiver _A - Plot 105
Group:	(main group)
Group Reduction:	No

[illegible]

All shown dB values are A-weighted



Lockwood Road, Goldthorpe
Predicted LAeq,16hr - Daytime - Gardens

Report: Table of Results
Model: Daytime LAeq,16hr - Gardens- Rev 2 (July 21)
LAeq per octave: total results for receivers
Group: (main group)
Group Reduction: No

Name			Day								
Receiver	Description	Height	Total	63	125	250	500	1000	2000	4000	8000
_A	Plot 100	1.50	47	34	34	32	41	44	33	15	3
_A	Plot 81	1.50	46	35	34	31	41	44	32	14	1
_A	Plot 84	1.50	45	33	33	30	40	42	31	13	1
_A	Plot 97	1.50	45	33	33	30	39	42	31	13	0
_A	Plot 98	1.50	45	32	32	30	39	42	31	13	--
_A	Plot 96	1.50	44	31	31	29	39	41	30	12	--
_A	Plot 85	1.50	44	31	31	29	39	41	30	12	--
_A	Plot 52	1.50	44	30	30	27	38	42	31	10	--
_A	Plot 82	1.50	44	31	32	29	38	41	30	12	--
_A	Plot 101	1.50	44	32	32	29	38	41	30	13	0
_A	Plot 54	1.50	44	32	32	29	38	41	29	10	--
_A	Plot 93	1.50	43	32	32	29	38	40	30	12	--
_A	Plot 47	1.50	43	30	31	28	38	40	28	9	--
_A	Plot 48	1.50	43	31	31	28	37	40	28	9	--
_A	Plot 99	1.50	43	30	30	27	37	40	29	11	--
_A	Plot 55	1.50	42	28	28	27	37	40	29	8	--
_A	Plot 38	1.50	42	28	29	26	37	40	29	7	--
_A	Plot 57	1.50	42	29	29	26	37	40	29	9	--
_A	Plot 37	1.50	42	28	29	26	36	40	29	7	--
_A	Plot 53	1.50	42	30	30	27	37	39	28	9	--
_A	Plot 36	1.50	42	27	27	25	36	40	29	7	--
_A	Plot 88	1.50	42	30	30	26	36	39	28	9	--
_A	Plot 56	1.50	42	28	28	26	36	39	28	9	--
_A	Plot 83	1.50	42	29	28	27	36	39	28	10	--
_A	Plot 87	1.50	41	30	30	26	36	39	27	9	--
_A	Plot 86	1.50	41	29	29	25	36	39	28	10	--
_A	Plot 34	1.50	41	26	27	25	36	39	28	6	--
_A	Plot 35	1.50	41	27	27	24	34	39	29	7	--
_A	Plot 33	1.50	41	26	26	25	35	39	28	6	--
_A	Plot 102	1.50	41	31	30	27	36	38	27	10	--
_A	Plot 89	1.50	41	30	29	26	36	38	27	9	--
_A	Plot 95	1.50	41	29	29	26	35	38	27	10	--
_A	Plot 32	1.50	41	26	27	24	35	39	28	5	--
_A	Plot 31	1.50	41	26	26	24	35	39	28	5	--
_A	Plot 40	1.50	41	28	27	25	35	38	27	5	--
_A	Plot 94	1.50	41	30	29	26	35	38	27	10	--
_A	Plot 58	1.50	41	29	28	25	35	38	26	7	--
_A	Plot 30	1.50	40	25	26	24	35	38	27	5	--
_A	Plot 29	1.50	40	25	25	24	34	38	26	3	--
_A	Plot 46	1.50	40	28	28	25	34	37	26	7	--

All shown dB values are A-weighted

Lockwood Road, Goldthorpe
Predicted LAeq,16hr - Daytime - Gardens

Report: Table of Results
Model: Daytime LAeq,16hr - Gardens- Rev 2 (July 21)
LAeq per octave: total results for receivers
Group: (main group)
Group Reduction: No

Name			Day								
Receiver	Description	Height	Total	63	125	250	500	1000	2000	4000	8000
_A	Plot 90	1.50	40	28	27	24	34	37	26	9	--
_A	Plot 39	1.50	40	28	27	24	34	37	25	5	--
_A	Plot 41	1.50	40	27	26	23	34	37	27	6	--
_A	Plot 42	1.50	40	27	27	24	33	37	27	6	--
_A	Plot 103	1.50	39	29	28	25	34	36	26	9	--
_A	Plot 59	1.50	39	26	25	23	34	36	25	6	--
_A	Plot 91	1.50	39	28	28	24	33	36	25	8	--
_A	Plot 112	1.50	38	28	27	24	33	35	25	7	--
_A	Plot 92	1.50	38	27	26	24	33	35	24	7	--
_A	Plot 45	1.50	38	26	26	23	32	35	24	6	--
_A	Plot 111	1.50	37	27	27	23	32	34	23	6	--
_A	Plot 62	1.50	37	26	24	21	31	35	24	6	--
_A	Plot 70	1.50	37	26	26	22	31	35	24	5	--
_A	Plot 107	1.50	37	28	27	23	32	34	23	6	--
_A	Plot 110	1.50	37	26	26	23	32	34	23	6	--
_A	Plot 109	1.50	37	27	26	22	31	34	24	7	--
_A	Plot 108	1.50	37	26	25	22	31	34	24	7	--
_A	Plot 106	1.50	37	28	27	22	31	34	23	6	--
_A	Plot 63	1.50	37	27	26	22	31	34	23	5	--
_A	Plot 60	1.50	36	25	24	21	31	34	23	6	--
_A	Plot 71	1.50	36	26	25	22	31	33	22	4	--
_A	Plot 61	1.50	36	25	24	21	31	34	23	6	--
_A	Plot 127	1.50	36	26	26	22	31	33	22	3	--
_A	Plot 128	1.50	36	26	26	22	31	33	21	3	--
_A	Plot 104	1.50	36	27	25	21	30	33	22	6	--
_A	Plot 43	1.50	36	25	25	22	30	33	22	3	--
_A	Plot 64	1.50	36	25	25	21	30	33	22	4	--
_A	Plot 105	1.50	36	26	24	21	30	33	23	7	--
_A	Plot 129	1.50	36	26	25	21	30	33	21	2	--
_A	Plot 80	1.50	36	25	25	21	30	33	21	2	--
_A	Plot 28	1.50	36	20	20	19	30	34	23	--	--
_A	Plot 124	1.50	36	26	25	21	30	32	21	2	--
_A	Plot 126	1.50	36	25	25	21	30	33	21	2	--
_A	Plot 76	1.50	36	25	24	21	30	33	21	1	--
_A	Plot 44	1.50	36	25	25	21	30	33	21	3	--
_A	Plot 51	1.50	36	25	24	20	30	33	22	3	--
_A	Plot 73	1.50	35	25	24	21	30	32	21	3	--
_A	Plot 16	1.50	35	24	24	21	30	33	21	1	--
_A	Plot 65	1.50	35	25	24	20	30	32	22	3	--
_A	Plot 125	1.50	35	25	24	21	30	32	21	2	--

All shown dB values are A-weighted

Lockwood Road, Goldthorpe
Predicted LAeq,16hr - Daytime - Gardens

Report: Table of Results
Model: Daytime LAeq,16hr - Gardens- Rev 2 (July 21)
LAeq per octave: total results for receivers
Group: (main group)
Group Reduction: No

Name			Day								
Receiver	Description	Height	Total	63	125	250	500	1000	2000	4000	8000
_A	Plot 66	1.50	35	25	24	20	30	32	21	3	--
_A	Plot 14	1.50	35	25	23	21	30	32	21	0	--
_A	Plot 130	1.50	35	25	24	21	30	32	20	--	--
_A	Plot 12	1.50	35	24	24	20	30	32	20	0	--
_A	Plot 131	1.50	35	25	24	21	29	32	20	--	--
_A	Plot 72	1.50	35	25	24	20	29	32	21	3	--
_A	Plot 119	1.50	35	24	23	20	29	32	21	3	--
_A	Plot 77	1.50	35	24	23	20	29	32	21	1	--
_A	Plot 17	1.50	35	25	24	20	29	32	21	1	--
_A	Plot 132	1.50	35	25	24	20	29	31	20	--	--
_A	Plot 78	1.50	35	25	23	20	29	32	21	1	--
_A	Plot 117	1.50	35	24	23	20	29	32	21	3	--
_A	Plot 135	1.50	35	25	24	20	29	32	20	--	--
_A	Plot 50	1.50	35	24	23	19	28	32	22	4	--
_A	Plot 74	1.50	35	24	24	20	29	31	21	2	--
_A	Plot 13	1.50	35	24	23	20	29	31	20	--	--
_A	Plot 11	1.50	34	24	24	20	29	31	20	--	--
_A	Plot 67	1.50	34	25	24	20	29	31	20	2	--
_A	Plot 123	1.50	34	24	22	19	29	32	21	2	--
_A	Plot 75	1.50	34	24	23	19	29	31	20	2	--
_A	Plot 79	1.50	34	24	23	20	29	31	20	1	--
_A	Plot 49	1.50	34	25	23	19	28	31	21	4	--
_A	Plot 10	1.50	34	24	24	20	29	31	20	--	--
_A	Plot 68	1.50	34	24	24	20	29	31	20	2	--
_A	Plot 69	1.50	34	24	23	19	29	31	20	2	--
_A	Plot 120	1.50	34	23	22	19	29	31	21	3	--
_A	Plot 113	1.50	34	25	23	19	28	31	21	4	--
_A	Plot 116	1.50	34	24	22	19	28	31	21	3	--
_A	Plot 118	1.50	34	23	22	19	28	31	20	2	--
_A	Plot 122	1.50	34	23	22	18	28	31	20	2	--
_A	Plot 121	1.50	34	22	21	19	28	31	21	2	--
_A	Plot 115	1.50	34	23	22	19	28	31	21	3	--
_A	Plot 136	1.50	34	24	23	19	28	30	18	--	--
_A	Plot 3	1.50	33	23	23	19	28	30	18	--	--
_A	Plot 114	1.50	33	24	22	18	27	30	21	4	--
_A	Plot 15	1.50	33	22	22	18	27	30	19	0	--
_A	Plot 24	1.50	33	23	23	18	27	30	18	--	--
_A	Plot 23	1.50	33	23	23	19	27	29	18	--	--
_A	Plot 20	1.50	32	22	21	18	27	29	19	--	--
_A	Plot 21	1.50	32	21	22	18	27	29	20	0	--

All shown dB values are A-weighted

Lockwood Road, Goldthorpe
Predicted LAeq,16hr - Daytime - Gardens

Report: Table of Results
 Model: Daytime LAeq,16hr - Gardens- Rev 2 (July 21)
 LAeq per octave: total results for receivers
 Group: (main group)
 Group Reduction: No

Name			Day								
Receiver	Description	Height	Total	63	125	250	500	1000	2000	4000	8000
_A	Plot 137	1.50	32	23	22	18	27	29	17	--	--
_A	Plot 26	1.50	32	19	18	13	26	30	20	--	--
_A	Plot 22	1.50	32	22	20	17	26	29	19	--	--
_A	Plot 19	1.50	32	21	20	16	25	29	19	--	--
_A	Plot 2	1.50	32	22	21	17	26	28	17	--	--
_A	Plot 9	1.50	31	22	20	17	26	28	17	--	--
_A	Plot 1	1.50	31	21	20	16	25	28	17	--	--
_A	Plot 133	1.50	31	21	20	16	25	28	17	--	--
_A	Plot 18	1.50	31	20	18	14	24	28	18	--	--
_A	Plot 134	1.50	31	20	19	15	25	28	17	--	--
_A	Plot 25	1.50	30	21	19	15	24	26	15	--	--
_A	Plot 5	1.50	30	20	19	15	24	26	16	--	--
_A	Plot 4	1.50	29	20	19	15	23	26	16	--	--
_A	Plot 8	1.50	29	20	18	14	22	26	15	--	--
_A	Plot 6	1.50	29	19	18	14	23	26	16	--	--
_A	Plot 7	1.50	29	20	18	14	22	26	16	--	--
_A	Plot 27	1.50	28	19	18	14	22	25	15	--	--

All shown dB values are A-weighted

APPENDIX D

Intrusive Noise Calculations

Calculated Indoor Ambient Noise Levels (as per BS 8233:2014 Annex G)



Project:	Lockwood Road, Goldthorpe
Project number:	20444
Date:	11/08/2021

Plot:	Plot 81 (Type 405)
Room:	Living Room

Daytime ($L_{Aeq,16hr}$)		Unit	Value	Description	Term	Octave band centre frequency								Broadband term	
						63	125	250	500	1k	2k	4k	8k		
EXTERNAL NOISE LEVEL															
External noise level				Façade 1	$L_{eq,1}$	65	50	40	43	43	31	12	2	$L_{Aeq,1}$	46 dB
Façade correction factor					C	0	0	0	0	0	0	0	0		
INCIDENT FAÇADE NOISE LEVEL															
Incident noise level				Façade 1	$L_{eq,ff}$	65	50	40	43	43	31	12	2	$L_{Aeq,ff}$	46 dB
ROOM DATA															
Room description and reverberation time		Volume	37.5	Living Room	RT ₆₀	0.6	0.6	0.5	0.5	0.4	0.4	0.4	0.3		s
FAÇADE ELEMENTS (Façade 1)															
Glazing	Area	2.33333	Pilkington 4/6-16/4	Rw	20	21	17	25	35	37	31	36		Rw / Rw+Ctr	29 / 25 dB
Wall	Area	17.6667	Brick and block external wall	Rw	34	40	44	45	51	56	60	63		Rw / Rw+Ctr	50 / 47 dB
Vent	No. off.	3	Greenwood 4000 SBW (Hit and miss)	Dn,e	38	38	37	34	30	34	37	46		Dn,e,w / Dn,e,w+Ctr	33 / 32 dB
None			--												
RESULTS															
Total calculated indoor noise level					$L_{eq,2}$	44	27	19	18	19	3	-	-	$L_{Aeq,2}$	23 dB

Calculated Indoor Ambient Noise Levels (as per BS 8233:2014 Annex G)



Project:	Lockwood Road, Goldthorpe
Project number:	20444
Date:	11/08/2021

Plot:	Plot 81 (Type 405)
Room:	Bedroom 2

Daytime ($L_{Aeq,16hr}$)		Unit	Value	Description	Term	Octave band centre frequency								Broadband term	
						63	125	250	500	1k	2k	4k	8k		
EXTERNAL NOISE LEVEL															
External noise level				Façade 1	$L_{eq,1}$	59	50	40	43	43	31	13	2	$L_{Aeq,1}$	46 dB
Façade correction factor					C	0	0	0	0	0	0	0	0		
INCIDENT FAÇADE NOISE LEVEL															
Incident noise level				Façade 1	$L_{eq,ff}$	59	50	40	43	43	31	13	2	$L_{Aeq,ff}$	46 dB
ROOM DATA															
Room description and reverberation time		Volume	28	Bedroom	RT ₆₀	0.4	0.5	0.4	0.4	0.3	0.3	0.3	0.2		s
FAÇADE ELEMENTS (Façade 1)															
Glazing	Area	1.44	Pilkington 4/6-16/4	Rw	20	21	17	25	35	37	31	36		Rw / Rw+Ctr	29 / 25 dB
Wall	Area	15.56	Brick and block external wall	Rw	34	40	44	45	51	56	60	63		Rw / Rw+Ctr	50 / 47 dB
Vent	No. off.	2	Greenwood 4000 SBW (Hit and miss)	Dn,e	38	38	37	34	30	34	37	46		Dn,e,w / Dn,e,w+Ctr	33 / 32 dB
None			--												
RESULTS															
Total calculated indoor noise level					$L_{eq,2}$	35	26	17	17	17	1	-	-	$L_{Aeq,2}$	20 dB

Calculated Indoor Ambient Noise Levels (as per BS 8233:2014 Annex G)



Project:	Lockwood Road, Goldthorpe
Project number:	20444
Date:	11/08/2021

Plot:	Plot 81 (Type 405)
Room:	Bedroom 2

Night time ($L_{Aeq,8hr}$)				Octave band centre frequency													
	Unit	Value	Description	Term	63	125	250	500	1k	2k	4k	8k	Broadband term				
EXTERNAL NOISE LEVEL																	
External noise level			Façade 1	$L_{eq,1}$	57	48	35	41	40	28	7	2		$L_{Aeq,1}$	43 dB		
Façade correction factor				C	0	0	0	0	0	0	0	0	0				
INCIDENT FAÇADE NOISE LEVEL																	
Incident noise level			Façade 1	$L_{eq,ff}$	57	48	35	41	40	28	7	2		$L_{Aeq,ff}$	43 dB		
ROOM DATA																	
Room description and reverberation time	Volume	28	Bedroom	RT60	0.4	0.5	0.4	0.4	0.3	0.3	0.3	0.2			s		
FAÇADE ELEMENTS (Façade 1)																	
Glazing	Area	1.44	Pilkington 4/6-16/4	Rw	20	21	17	25	35	37	31	36		Rw / Rw+Ctr	29 / 25 dB		
Wall	Area	15.56	Brick and block external wall	Rw	34	40	44	45	51	56	60	63		Rw / Rw+Ctr	50 / 47 dB		
Vent	No. off.	2	Greenwood 4000 SBW (Hit and miss)	Dn,e	38	38	37	34	30	34	37	46		Dn,e,w / Dn,e,w+Ctr	33 / 32 dB		
None			--														
RESULTS																	
Total calculated indoor noise level				$L_{eq,2}$	33	24	12	15	14	-	-	-		$L_{Aeq,2}$	17 dB		

Calculated Indoor Ambient Noise Levels (as per BS 8233:2014 Annex G)



Project:	Lockwood Road, Goldthorpe
Project number:	20444
Date:	11/08/2021

Plot:	Plot 81 (Type 405)
Room:	Bedroom 2

Night time ($L_{A\text{Max}}$)				Octave band centre frequency												Broadband term	
Unit	Value	Description	Term	63	125	250	500	1k	2k	4k	8k						
EXTERNAL NOISE LEVEL																	
External noise level			Façade 1	$L_{\text{Max},1}$	67	58	47	55	57	47	30	18		$L_{A\text{Max},1}$	59 dB		
Façade correction factor				C	0	0	0	0	0	0	0	0					
INCIDENT FAÇADE NOISE LEVEL																	
Incident noise level			Façade 1	$L_{\text{Max},ff}$	67	58	47	55	57	47	30	18		$L_{A\text{Max},ff}$	59 dB		
ROOM DATA																	
Room description and reverberation time	Volume	28	Bedroom	RT_{60}	0.4	0.5	0.4	0.4	0.3	0.3	0.3	0.2			s		
FAÇADE ELEMENTS (Façade 1)																	
Glazing	Area	1.44	Pilkington 4/6-16/4	R_w	20	21	17	25	35	37	31	36		$R_w / R_w + C_{tr}$	29 / 25 dB		
Wall	Area	15.56	Brick and block external wall	R_w	34	40	44	45	51	56	60	63		$R_w / R_w + C_{tr}$	50 / 47 dB		
Vent	No. off.	2	Greenwood 4000 SBW (Hit and miss)	$D_{n,e}$	38	38	37	34	30	34	37	46		$D_{n,e,w} / D_{n,e,w} + C_{tr}$	33 / 32 dB		
None			--														
RESULTS																	
Total calculated indoor noise level				$L_{\text{Max},2}$	43	34	24	29	31	17	-	-		$L_{A\text{Max},2}$	33 dB		

Calculated Indoor Ambient Noise Levels (as per BS 8233:2014 Annex G)



Project:	Lockwood Road, Goldthorpe
Project number:	20444
Date:	11/08/2021

Plot:	Plot 93 (Type 314)
Room:	Living Room

Daytime ($L_{Aeq,16hr}$)		Unit	Value	Description	Term	Octave band centre frequency								Broadband term	
						63	125	250	500	1k	2k	4k	8k		
EXTERNAL NOISE LEVEL															
External noise level				Façade 1	$L_{eq,1}$	58	48	37	41	41	29	11	2	$L_{Aeq,1}$	44 dB
Façade correction factor					C	0	0	0	0	0	0	0	0		
INCIDENT FAÇADE NOISE LEVEL															
Incident noise level				Façade 1	$L_{eq,ff}$	58	48	37	41	41	29	11	2	$L_{Aeq,ff}$	44 dB
ROOM DATA															
Room description and reverberation time		Volume	39.375	Living Room	RT ₆₀	0.6	0.6	0.5	0.5	0.4	0.4	0.4	0.3		s
FAÇADE ELEMENTS (Façade 1)															
Glazing	Area	3.12	Pilkington 4/6-16/4	Rw	20	21	17	25	35	37	31	36		Rw / Rw+Ctr	29 / 25 dB
Wall	Area	22.13	Brick and block external wall	Rw	34	40	44	45	51	56	60	63		Rw / Rw+Ctr	50 / 47 dB
Vent	No. off.	3	Greenwood 4000 SBW (Hit and miss)	Dn,e	38	38	37	34	30	34	37	46		Dn,e,w / Dn,e,w+Ctr	33 / 32 dB
None			--												
RESULTS															
Total calculated indoor noise level					$L_{eq,2}$	37	26	17	17	17	1	-	-	$L_{Aeq,2}$	20 dB

Calculated Indoor Ambient Noise Levels (as per BS 8233:2014 Annex G)



Project:	Lockwood Road, Goldthorpe
Project number:	20444
Date:	11/08/2021

Plot:	Plot 93 (Type 314)
Room:	Bedroom 2

Daytime (<i>L</i> _{Aeq,16hr})				Octave band centre frequency												Broadband term	
Unit	Value	Description	Term	63	125	250	500	1k	2k	4k	8k						
EXTERNAL NOISE LEVEL																	
External noise level		Façade 1	<i>L</i> _{eq,1}	57	47	37	41	41	29	11	2		<i>L</i> _{Aeq,1}	44 dB			
Façade correction factor			C	0	0	0	0	0	0	0	0						
INCIDENT FAÇADE NOISE LEVEL																	
Incident noise level		Façade 1	<i>L</i> _{eq,ff}	57	47	37	41	41	29	11	2		<i>L</i> _{Aeq,ff}	44 dB			
ROOM DATA																	
Room description and reverberation time	Volume	18.75	Bedroom	RT60	0.4	0.5	0.4	0.4	0.3	0.3	0.3	0.2		s			
FAÇADE ELEMENTS (Façade 1)																	
Glazing	Area	1.32	Pilkington 4/6-16/4	Rw	20	21	17	25	35	37	31	36	Rw / Rw+Ctr	29 / 25 dB			
Wall	Area	11.805	Brick and block external wall	Rw	34	40	44	45	51	56	60	63	Rw / Rw+Ctr	50 / 47 dB			
Vent	No. off.	2	Greenwood 4000 SBW (Hit and miss)	Dn,e	38	38	37	34	30	34	37	46	Dn,e,w / Dn,e,w+Ctr	33 / 32 dB			
None			--														
RESULTS																	
Total calculated indoor noise level				<i>L</i> _{eq,2}	35	24	16	16	17	1	-	-		<i>L</i> _{Aeq,2}	20 dB		

Calculated Indoor Ambient Noise Levels (as per BS 8233:2014 Annex G)



Project:	Lockwood Road, Goldthorpe
Project number:	20444
Date:	11/08/2021

Plot:	Plot 93 (Type 314)
Room:	Bedroom 2

Night time ($L_{Aeq,8hr}$)		Unit	Value	Description	Term	Octave band centre frequency								Broadband term	
						63	125	250	500	1k	2k	4k	8k		
EXTERNAL NOISE LEVEL															
External noise level				Façade 1	$L_{eq,1}$	55	45	32	39	38	26	5	2	$L_{Aeq,1}$	41 dB
Façade correction factor					C	0	0	0	0	0	0	0	0		
INCIDENT FAÇADE NOISE LEVEL															
Incident noise level				Façade 1	$L_{eq,ff}$	55	45	32	39	38	26	5	2	$L_{Aeq,ff}$	41 dB
ROOM DATA															
Room description and reverberation time		Volume	18.75	Bedroom	RT ₆₀	0.4	0.5	0.4	0.4	0.3	0.3	0.3	0.2		s
FAÇADE ELEMENTS (Façade 1)															
Glazing	Area	1.32	Pilkington 4/6-16/4	Rw	20	21	17	25	35	37	31	36		Rw / Rw+Ctr	29 / 25 dB
Wall	Area	11.805	Brick and block external wall	Rw	34	40	44	45	51	56	60	63		Rw / Rw+Ctr	50 / 47 dB
Vent	No. off.	2	Greenwood 4000 SBW (Hit and miss)	Dn,e	38	38	37	34	30	34	37	46		Dn,e,w / Dn,e,w+Ctr	33 / 32 dB
None			--												
RESULTS															
Total calculated indoor noise level					$L_{eq,2}$	33	22	11	14	14	-	-	-	$L_{Aeq,2}$	17 dB

Calculated Indoor Ambient Noise Levels (as per BS 8233:2014 Annex G)



Project:	Lockwood Road, Goldthorpe
Project number:	20444
Date:	11/08/2021

Plot:	Plot 93 (Type 314)
Room:	Bedroom 2

Night time ($L_{A\text{Max}}$)		Unit	Value	Description	Term	Octave band centre frequency								Broadband term	
						63	125	250	500	1k	2k	4k	8k		
EXTERNAL NOISE LEVEL															
External noise level				Façade 1	$L_{\text{Max},1}$	65	56	45	53	55	46	28	15	$L_{A\text{Max},1}$	57 dB
Façade correction factor					C	0	0	0	0	0	0	0	0		
INCIDENT FAÇADE NOISE LEVEL															
Incident noise level				Façade 1	$L_{\text{Max},ff}$	65	56	45	53	55	46	28	15	$L_{A\text{Max},ff}$	57 dB
ROOM DATA															
Room description and reverberation time		Volume	18.75	Bedroom	RT ₆₀	0.4	0.5	0.4	0.4	0.3	0.3	0.3	0.2		s
FAÇADE ELEMENTS (Façade 1)															
Glazing	Area	1.32	Pilkington 4/6-16/4	Rw	20	21	17	25	35	37	31	36		Rw / Rw+Ctr	29 / 25 dB
Wall	Area	11.805	Brick and block external wall	Rw	34	40	44	45	51	56	60	63		Rw / Rw+Ctr	50 / 47 dB
Vent	No. off.	2	Greenwood 4000 SBW (Hit and miss)	Dn,e	38	38	37	34	30	34	37	46		Dn,e,w / Dn,e,w+Ctr	33 / 32 dB
None			--												
RESULTS															
Total calculated indoor noise level					$L_{\text{Max},2}$	43	33	24	28	31	18	-	-	$L_{A\text{Max},2}$	33 dB

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