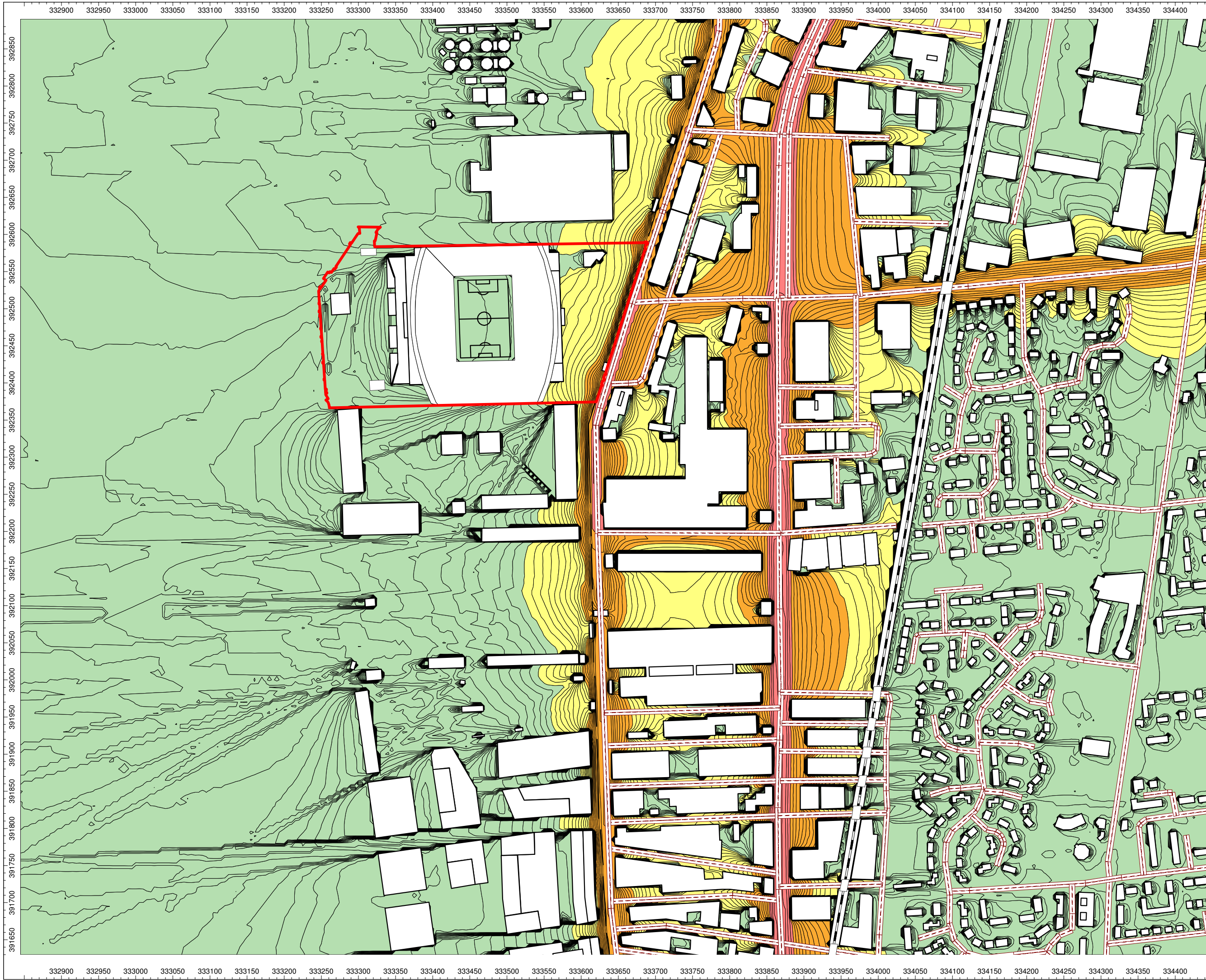




Client:
Everton Stadium
Development Ltd

Project:
The People's Project,
Merseyside

Project Number:
A100795

Drawing Title / Scenario:
Do Something LA10,18hr
Noise Contours (2028)

Drawing Number:
SK05

Key:

Site Boundary: —

- 0.0 - 50.0 dB
- 50.0 - 60.0 dB
- 60.0 - 70.0 dB
- > 70.0 dB

Scale : Not to scale

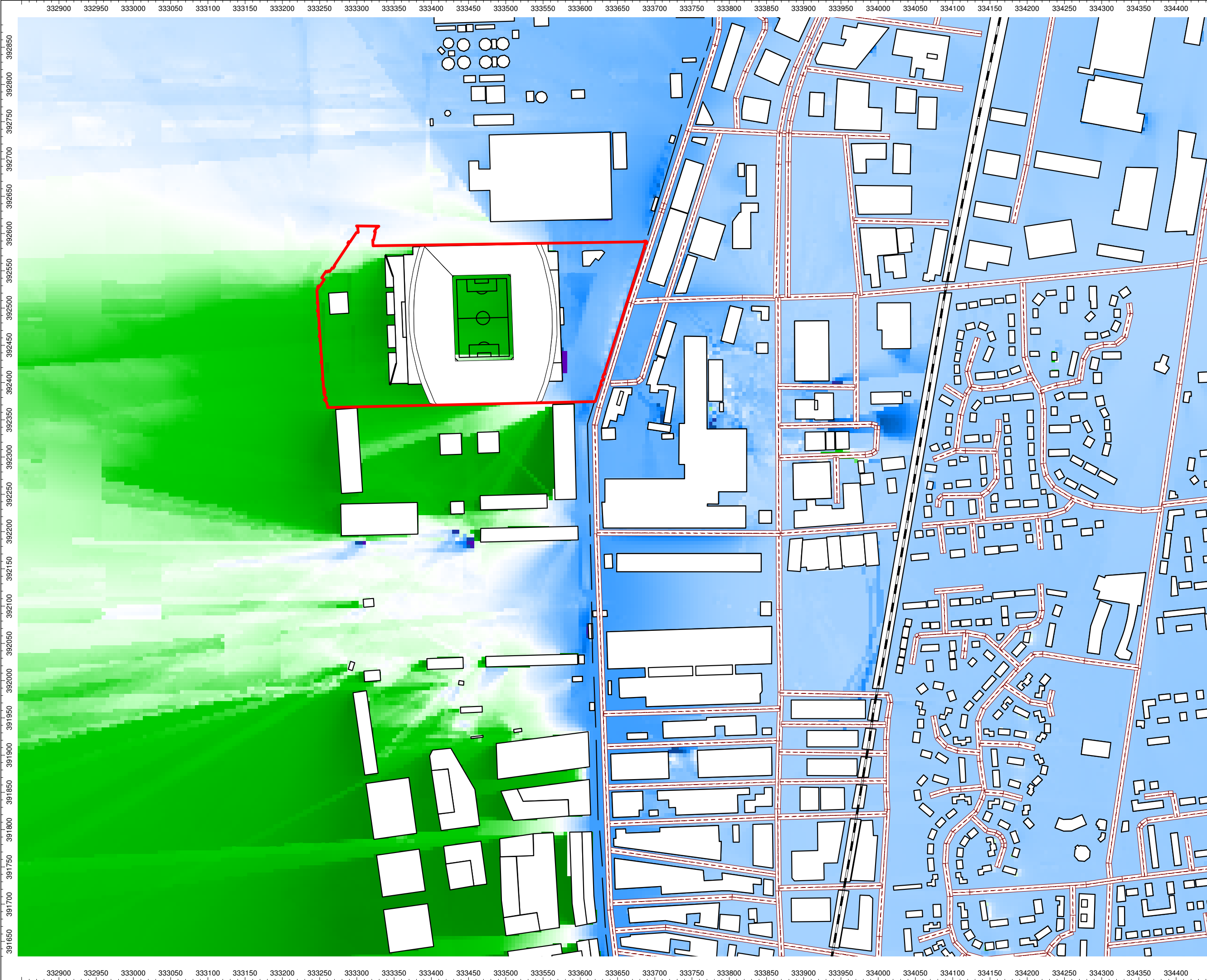
WYGE Leicester 20.08.20

Licence Number AL 553611



Executive Park
Avalon Way
Anstey
Leicestershire
LE7 7GR
Tel 0116 234 8000

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Client:
Everton Stadium
Development Ltd

Project:
The People's Project,
Merseyside

Project Number:
A100795

Drawing Title / Scenario:
Do Minimum 2023 / Do
Something 2028 Noise
Level Difference Contours

Drawing Number:
SK06

Key:

Site Boundary: —

- ≥ -10
- ≥ -5
- ≥ -3
- ≥ -1
- ≥ 4
- ≥ 5
- ≥ 10

Scale : Not to scale

WYGE Leicester 20.08.20

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Executive Park
Avalon Way
Anstley
Leicestershire
LE7 7GR
Tel 0116 234 8000

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Appendix C – Construction and Environmental Management Plan (CEMP) – Noise

A construction noise assessment has been undertaken in accordance with BS 5228:2009 which demonstrates that noise from daytime construction activity on the site is not considered to be significant. The full details of the assessment are presented in the noise technical report which supports the proposed scheme.

Despite the favourable assessment, a number of additional mitigation measures are recommended to keep construction site noise to a minimum. The following practices are derived from those detailed in BS 5228-1:2009 and those most appropriate to the site are outlined below.

Source Noise Control

Wherever possible noise will be controlled at source.

- a) avoid unnecessary revving of engines and switch off equipment when not required;
- b) keep internal haul routes well maintained and avoid steep gradients;
- c) use rubber linings in, for example, chutes and dumpers to reduce impact noise;
- d) minimize drop height of materials;
- e) start up plant and vehicles sequentially rather than all together.

As far as reasonably practicable, sources of significant noise will be enclosed or screened. The extent to which this can be done depends on the nature of the machine or process to be enclosed and their ventilation requirements. For maximum benefit, screens will be close to the source of noise.

Plant Location

The plant and activities to be employed on that site will be reviewed to ensure that they are the quietest available for the required purpose; this is in accordance with best practicable means. For an existing operational site, where reasonably practicable, noisy plant or activities will be replaced by less noisy alternatives if noise problems are occurring. Noise from existing plant and equipment can often be reduced by modification or by the application of improved sound reduction methods, but this will only be carried out after consultation with the manufacturer. Suppliers of plant will often have ready-made kits available and will often have experience of reducing noise from their plant.

Working Methods

Where reasonably practicable, quiet working methods will be employed, including use of the most suitable plant, reasonable hours of working for noisy operations, and economy and speed of operations.

Scheduling of Works

It is proposed that the scheduling of any construction works at the site be within daytime hours. The following hours of construction working are proposed;

- a) Monday to Friday: 07:00 – 19:00
- b) Saturday: 07:00 – 13:00
- c) Sundays and Bank Holidays: No Working

Where practicable, percussive piling activities will be scheduled to avoid migration/mating periods of sensitive ecological species as advised by the project ecologist.

No work is to be undertaken on Sundays or Public Holidays, unless written consent is obtained from LCC for extreme emergency cases. In this scenario the Contractor would be required to fully justify any proposed deviation from those operating periods, provide written justification to LCC, and notify neighbours in writing, before works outside normal hours commence.

Some elements of the construction process will require alternative working hour arrangements, as a consequence of their technical requirements. During the initial phase of the works, there is a requirement to fill the dock with imported material. This will be managed through a dredging method using sea transportation. This is typically done through a 24-hour/7 days-a-week approach. Alternative working hours are also proposed for the dock infill compaction process (07:00-19:00, six days-a-week). These working hours will be used through this phase upon agreement with all parties. As the floor slabs are to be power floated, this will require this (highly localised) activity to continue late into the evenings and sometimes overnight depending on environmental conditions and the concrete setting process.

Maintenance

Regular and effective maintenance by trained personnel is essential and will do much to reduce noise from plant and machinery. Increases in plant noise are often indicative of future mechanical failure.

Training

Operatives will be trained to employ appropriate techniques to keep site noise to a minimum, and will be effectively supervised to ensure that best working practice in respect of noise reduction is followed. All employees will be advised regularly of the following, as part of their training:

- a) the proper use and maintenance of tools and equipment;
- b) the positioning of machinery on site to reduce the emission of noise to the neighbourhood and to site personnel;
- c) the avoidance of unnecessary noise when carrying out manual operations and when operating plant and equipment;
- d) the protection of persons against noise;
- e) the operation of sound measuring equipment (selected personnel).

Special attention will be given to the use and maintenance of sound-reduction equipment fitted to power tools and machines.

Community Relations

Good relations with people living and working in the vicinity of site operations are of paramount importance. Early establishment and maintenance of these relations throughout the duration of site operations, will go some way towards allaying people's fears. It is suggested that good relations can be developed by keeping people informed of progress and by treating complaints fairly and expeditiously. The person, company or organization carrying out work on site will appoint a responsible person to liaise with the public.

In general, the longer the duration of activities on a site, the more likely it is that noise from the site will prove to be an issue. In this context, good public relations and communication are important. The hours of working will be planned in advance and disseminated. There will be a need to adhere strictly to the stated schedule and ensure that the community is informed of their likely durations.

Noise Monitoring

On-site noise levels will be monitored regularly, particularly if changes in machinery or project designs are introduced, by a suitably qualified person appointed specifically for the purpose. The following monitoring scheme is proposed;

Noise Monitoring Scheme

Noise monitoring during the construction phase will be undertaken in accordance with the guidance presented in Annex G of BS 5228-1:2009 which states that the following information will be recorded:

- a) the measured values of L_{Aeq} and, where appropriate, $L_{pA(max)}$ or L_{A01} , together with details of the appropriate time periods;
- b) details of the instrumentation and measurement methods used, including details of any sampling techniques, position of microphone(s) in relation to the site and system calibration data;
- c) any factors that might have adversely affected the reliability or accuracy of the measurements;
- d) plans of the site and neighbourhood showing the position of plant, associated buildings and notes of site activities during monitoring period(s);
- e) notes on weather conditions, including where relevant, wind speed/direction, temperature, presence of precipitation, etc.;
- f) time, date and name of person carrying out the measurement.

Proposed construction noise monitoring locations are shown on the accompanying Appendix C. It is proposed that noise levels will be routinely monitored and reported at these locations for 4 hours during construction activities on a monthly basis. Additional measurements will be undertaken to establish whether specific equipment or practices will be capable of achieving the Noise Emission Limits as set out below or in light of any complaints.

Vibration Monitoring

Vibration monitoring will be undertaken during the construction phase; monitoring will record ppv, max displacement, VDV and acceleration. Measurement will generally be undertaken in accordance with the procedure described in BS ISO 4866:2010: Guidelines for the measurement of vibrations and evaluation of their effects on structures.

Baseline monitoring to be undertaken on Grade II listed Dock Walls and Hydraulic Tower immediately (minimum 2 days) prior to works starting on site to establish appropriate monitoring trigger levels for vibration and displacement.

Works will stop and alternative methods employed if vibration exceeds the established thresholds.

Records of the monitoring will be consistent with the requirements of BS7385:1990 and will include:

- Description of the vibration source
- Type and condition of the building
- Purpose of the measurement
- Reference to BS7385
- Position of transducer and manner of coupling type and make of transducer
- Frequency range and linearity
- Assessment of the sources of error
- PPV recorded and associated frequency

Appendix D – Acoustic Consultants’ Qualifications

The lead project Acoustic Consultant is Graham Davis. The report has been checked by Nigel Mann. Relevant qualifications, membership and experience are summarised below.

Table D1 Acoustic Consultants’ Experience & Qualifications

Name	Education	Institute of Acoustics Post Graduate Diploma in Acoustic and Noise Control (Pass Date)	Experience in Undertaking Noise Assessments (Start date of working in noise & acoustics)	Attained Associate Membership of the Institute of Acoustics (date)	Attained Membership of the Institute of Acoustics (date)
Emma Aspinall	MGeol (2017)	Expected Dec 2020	Jul 2017	-	-
Lewis Kelter	BSc (2016) PGd (2018)	Dec 2018	Jun 2016	Dec 2018	-
Graham Davis	BA (2008) PGd (2013)	Nov 2013	Sep 2011	Jan 2014	-
Nigel Mann	BSc (1997) MSc (1999)	Nov 2001	Nov 1998	Nov 2001	Jul 2005

Appendix E – Report Conditions

This Report has been prepared using reasonable skill and care for the sole benefit of Everton Stadium Development Ltd (“the Client”) for the proposed uses stated in the report by [WYG Environment Planning Transport Limited] (“WYG”). WYG exclude all liability for any other uses and to any other party. The report must not be relied on or reproduced in whole or in part by any other party without the copyright holder’s permission.

No liability is accepted, or warranty given for; unconfirmed data, third party documents and information supplied to WYG or for the performance, reliability, standing etc of any products, services, organisations or companies referred to in this report. WYG does not purport to provide specialist legal, tax or accounting advice.

The report refers, within the limitations stated, to the environment of the Site in the context of the surrounding area at the time of the inspections'. Environmental conditions can vary, and no warranty is given as to the possibility of changes in the environment of the Site and surrounding area at differing times. No investigative method can eliminate the possibility of obtaining partially imprecise, incomplete or not fully representative information. Any monitoring or survey work undertaken as part of the commission will have been subject to limitations, including for example timescale, seasonal and weather-related conditions. Actual environmental conditions are typically more complex and variable than the investigative, predictive and modelling approaches indicate in practice, and the output of such approaches cannot be relied upon as a comprehensive or accurate indicator of future conditions. The “shelf life” of the Report will be determined by a number of factors including; its original purpose, the Client’s instructions, passage of time, advances in technology and techniques, changes in legislation etc. and therefore may require future re-assessment.

The whole of the report must be read as other sections of the report may contain information which puts into context the findings in any executive summary.

The performance of environmental protection measures and of buildings and other structures in relation to acoustics, vibration, noise mitigation and other environmental issues is influenced to a large extent by the degree to which the relevant environmental considerations are incorporated into the final design and specifications and the quality of workmanship and compliance with the specifications on Site during construction. WYG accept no liability for issues with performance arising from such factors.