DUSTON PARISH COUNCIL

Duston Parish Council
Duston Community Centre
Pendle Road
Duston
Northampton
NN5 6DT

Planning Committee

Cllrs Ingram, Barnes, Liddon, Mumford, Enright-King

8th December 2022

Dear Councillor,

You are hereby summoned to attend a meeting of the Planning Committee to be held at Duston Community Centre on Wednesday 14th December 2022 commencing at 7.00pm for the purpose of transacting the following business.

Issued by:

G. Youens

Gary Youens
Parish Clerk, Duston Parish Council

AGENDA

PC044/22. To receive apologies for absence

PC045/22. To receive and approve for signature the minutes of the meeting held on 24th November 2022 (APPENDIX A)

PC046/22. To receive declarations of interest under the Council's Code of Conduct related to business on the agenda *(Members should disclose any interests in the business to be discussed*

and are reminded that the disclosure of a Disclosable Pecuniary Interest will require that the member withdraws from the meeting room during the transaction of that item of business).

PC047/22. Public Participation Session *(Persons wishing to address the committee on an agenda item may register their intention to do so by telephone or email by 12 noon on the day of the meeting and may speak for a maximum of 3 minutes).*

PC048/22. Planning Applications

a) WNN/2022/1287 - 321 HARLESTONE ROAD, NORTHAMPTON, NN5 6PG - CONSTRUCTION OF TWO STOREY SIDE EXTENSION AND ORANGERY TO THE REAR AND DEMOLITION OF EXISTING GARAGE AND REAR CONSERVATORY

b) WNN/2022/1314 – LAND REAR OF 519 , HARLESTONE ROAD, NORTHAMPTON - TWO STOREY 3 BEDROOM DETACHED DWELLING

c) WNN/2022/1288 - 44 MAIN ROAD DUSTON - INSTALLATION OF PLANT TO THE REAR ELEVATION, REMOVAL OF LOUVRES TO REAR WALLS AND INFILLING WITH BRICKWORK

PC049/22. CIL / S106

- To discuss the latest situation with regards to outstanding CIL / S106 owed to Duston

PC050/22. Next Meeting Dates

- To agree the following dates for the two Planning Committee meetings
  26th January 2023
  23rd February 2023

APPENDIX A

DUSTON PARISH COUNCIL

Duston Parish Council
Duston Community Centre
Pendle Road
Duston
Northampton
NN5 6DT

Planning Committee
MINUTES 24th November 2022

PC037/22. To receive apologies for absence

- Apologies were received from Cllrs Bottwood and Stonehouse

PC038/22. To receive and approve for signature the minutes of the meeting held on 28th July 2022 (APPENDIX A)

- **RESOLVED:** That the minutes of the meeting held on 28th July 2022 were approved as a true record and signed by the Chair.

PC039/22. To receive declarations of interest under the Council's Code of Conduct related to business on the agenda

- There were no declarations of interest.

PC040/22. Public Participation Session

- There were no speakers from the public.

PC041/22. Planning Applications

a) WNN/2022/1224 – 7 SOUTHFIELD ROAD, NORTHAMPTON, NN5 6HN

- **RESOLVED:** No observation or Comment.

b) WNN/2022/1237 – 23 WEGGS FARM ROAD, NORTHAMPTON, NN5 6HD

- **RESOLVED**: No Objection, will the development impact upon street parking?

Will the street scene be affected by the development?

PC042/22. CIL / S106

- **RESOLVED:**

a) To note the verbal update regarding outstanding CIL / S106 owed to Duston.

b) To recommend to Full Council that a defibrillator be installed at Errington Park and that prioritising the Four Year Plan would be an effective way in which the CIL monies could be spend.

PC043/22. Next Meeting Dates

- **RESOLVED**: That the following dates for the next three Planning Committee meetings were agreed to:
  13th December 2022
  26th January 2023
  23rd February 2023

WNN/2022/1287 - 321 HARLESTONE ROAD, NORTHAMPTON, NN5 6PG - CONSTRUCTION OF TWO STOREY SIDE EXTENSION AND ORANGERY TO THE REAR AND DEMOLITION OF EXISTING GARAGE AND REAR CONSERVATORY

West Northamptonshire Council

Planning Department
Place & Economy Directorate
West Northamptonshire Council
Northampton Area Office
Guildhall, St Giles Square, Northampton
NN1 1DE
0300 126 7000
www.westnorthants.gov.uk | planning.nbc@westnorthants.gov.uk

Gary Youens
Duston Parish Council
Duston Community Centre
Pendle Road
Northampton
NN5 6DT

Our Ref:	WNN/2022/1287
Contact:	Andrew Mackriell
Telephone No:	0300 126 7000
Email:	planning.nbc@westnorthants.gov.uk
Date:	29 November 2022

Dear Sir/Madam

TOWN & COUNTRY PLANNING (DEVELOPMENT MANAGEMENT PROCEDURE) (ENGLAND) ORDER 2015

PROPOSAL: **CONSTRUCTION OF TWO STOREY SIDE EXTENSION AND ORANGERY TO THE REAR AND DEMOLITION OF EXISTING GARAGE AND REAR CONSERVATORY**
LOCATION: **321 HARLESTONE ROAD, NORTHAMPTON, NN5 6PG**

We are in receipt of the above application and would be grateful for any observations which you may wish to make. They should reach the Planning Service no later than **21 days** from the date of this email.

Please follow the link below in order to view plans and information regarding this application. Insert reference **WNN/2022/1287** into the Application Number search box and click submit. Please note, only this one box needs to be filled in, and it can take up to 2 hours to appear online from the time of this email being sent to you.

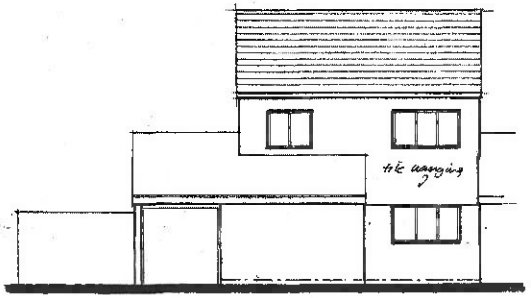
http://planning.northamptonboroughcouncil.com/planning

Please send your response to planning.nbc@westnorthants.gov.uk

If no comments are received within this period it will be assumed that you have no observations to make.

Yours faithfully

Andrew Mackriell
Planning Officer
Planning Service



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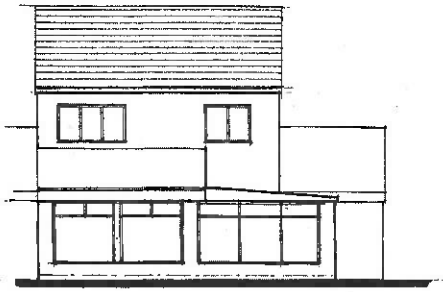

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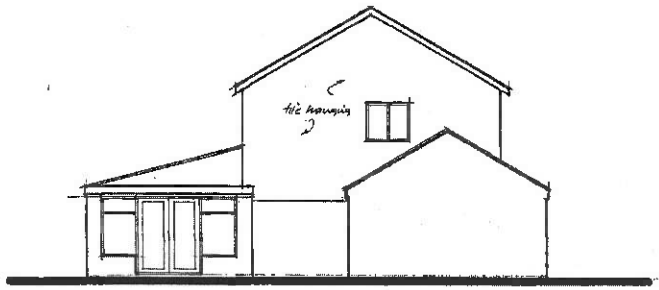

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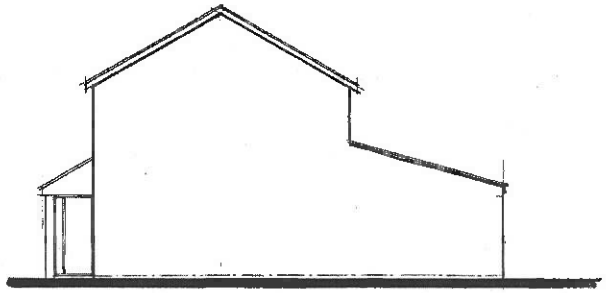

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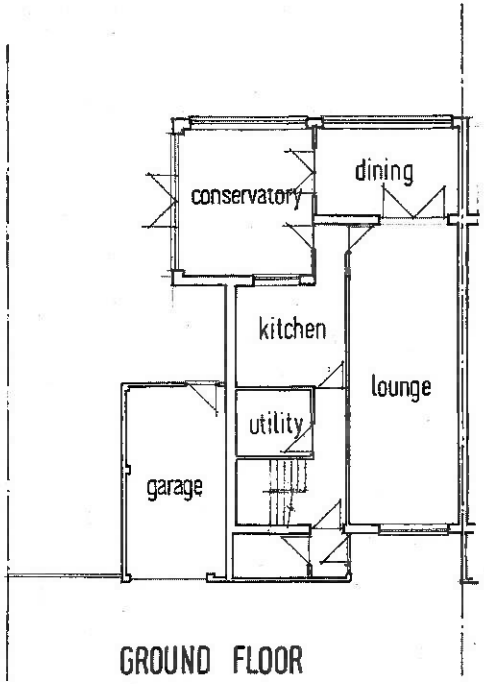

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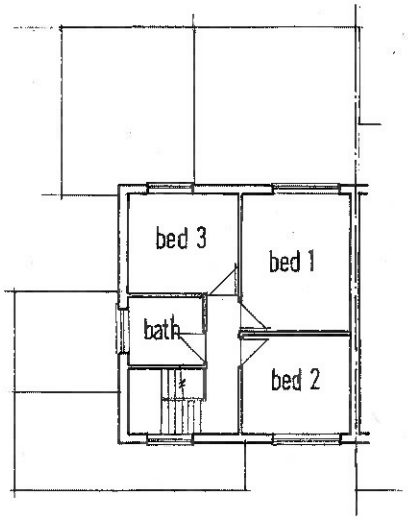

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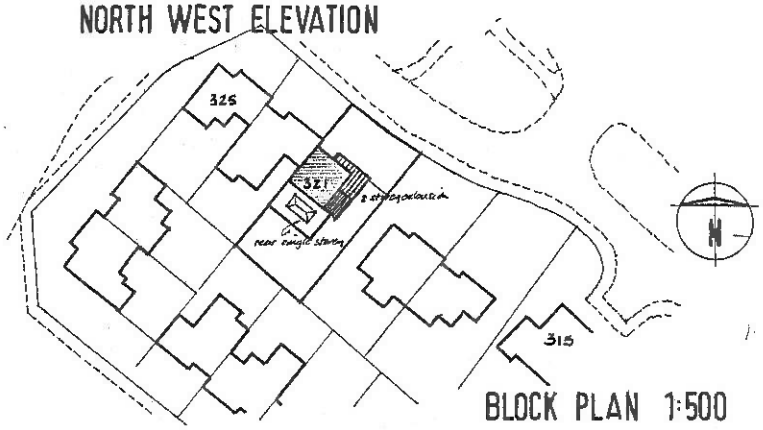


BLOCK PLAN 1:500

0 5 10

Scale bar 1:100

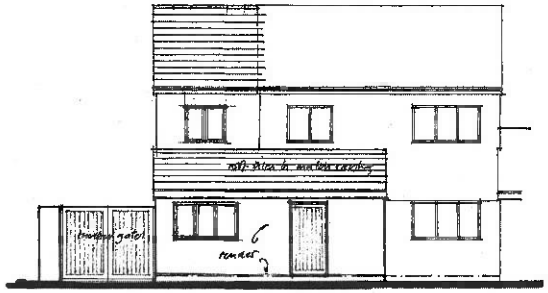
321 HARLESTON RD. NORTHAMPTON NN5 6PG

EXISTING PLANS

ZIELINSKI BAKER & Partners

The Studio - Meadow Lane - Little Houghton - Northampton - NN7 1AH - Tel: 01604 890890
Architecture - Building Surveying - Project Management - Planning and Development Consultants

Scale -	1:100
Date -	NOV. 2022
Drawn by -	
Drawing no.	23062/1



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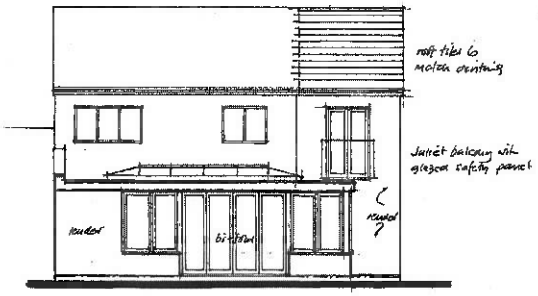

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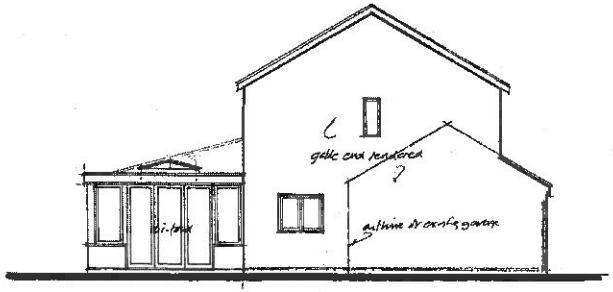

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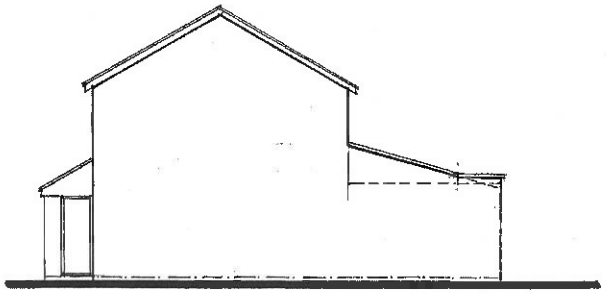

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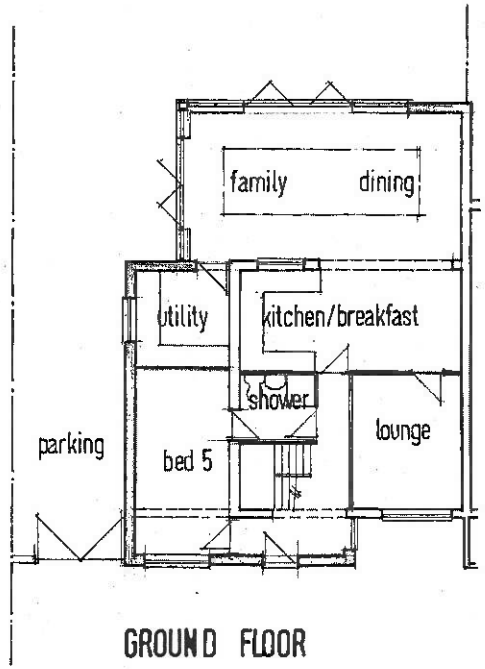

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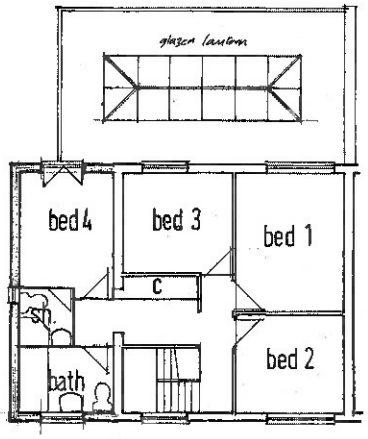


FIRST FLOOR

0 5 10

Scale bar 1:100

321 HARLESTONE RD. NORTHAMPTON NN5 6PG

PROPOSALS

ZIELINSKI BAKER & Partners

The Studio - Meadow Lane - Little Houghton - Northampton - NN7 1AH - Tel: 01604 890890
Architecture - Building Surveying - Project Management - Planning and Development Consultants

Scale -	1:100
Date -	NOV. 2022
Drawn by -	
Drawing no.	23062/2

H.M. LAND REGISTRY

TITLE NUMBER	
NN11500	

ORDNANCE SURVEY PLAN REFERENCE	COUNTY	SHEET	NATIONAL GRID	SECTION
	NORTHAMPTONSHIRE		SP 7262	E

Scale: 1/1250

NORTHAMPTON COUNTY BOROUGH

WNN/2022/1314 – LAND REAR OF 519, HARLESTONE ROAD, NORTHAMPTON - TWO STOREY 3 BEDROOM DETACHED DWELLING

West Northamptonshire Council

Planning Department
Place & Economy Directorate
West Northamptonshire Council
Northampton Area Office
Guildhall, St Giles Square, Northampton
NN1 1DE
0300 126 7000
www.westnorthants.gov.uk | planning.nbc@westnorthants.gov.uk

Gary Youens
Duston Parish Council
Duston Community Centre
Pendle Road
Northampton
NN5 6DT

Our Ref:	WNN/2022/1314
Contact:	Jonathan Moore
Telephone No:	0300 126 7000
Email:	planning.nbc@westnorthants.gov.uk
Date:	5 December 2022

Dear Sir/Madam

TOWN & COUNTRY PLANNING (DEVELOPMENT MANAGEMENT PROCEDURE) (ENGLAND) ORDER 2015

PROPOSAL: TWO STOREY 3 BEDROOM DETACHED DWELLING
LOCATION: LAND REAR OF 519 , HARLESTONE ROAD, NORTHAMPTON

We are in receipt of the above application and would be grateful for any observations which you may wish to make. They should reach the Planning Service no later than **21 days** from the date of this email.

Please follow the link below in order to view plans and information regarding this application. Insert reference **WNN/2022/1314** into the Application Number search box and click submit. Please note, only this one box needs to be filled in, and it can take up to 2 hours to appear online from the time of this email being sent to you.

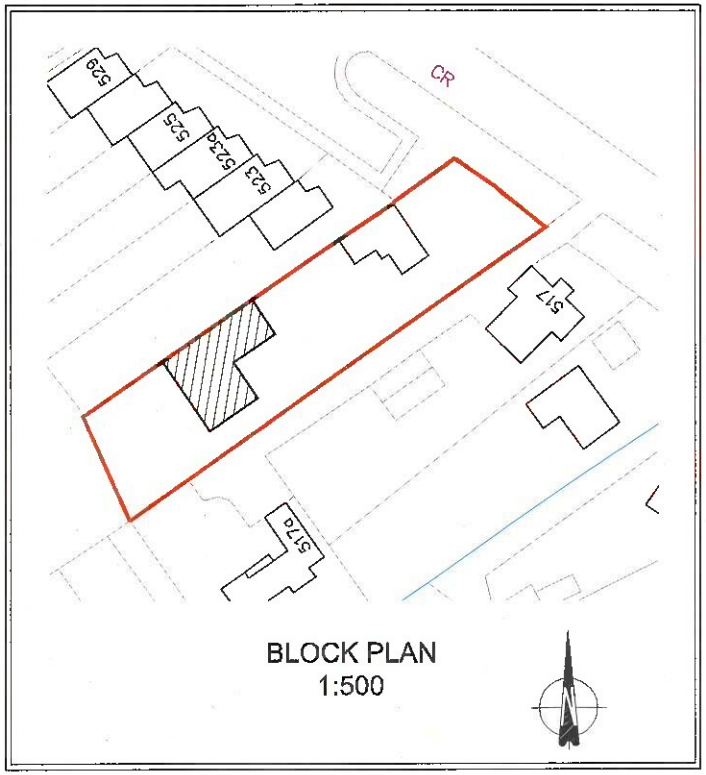
http://planning.northamptonboroughcouncil.com/planning

Please send your response to planning.nbc@westnorthants.gov.uk

If no comments are received within this period it will be assumed that you have no observations to make.

Yours faithfully

Jonathan Moore
Senior Planning Officer
Planning Service



BLOCK PLAN
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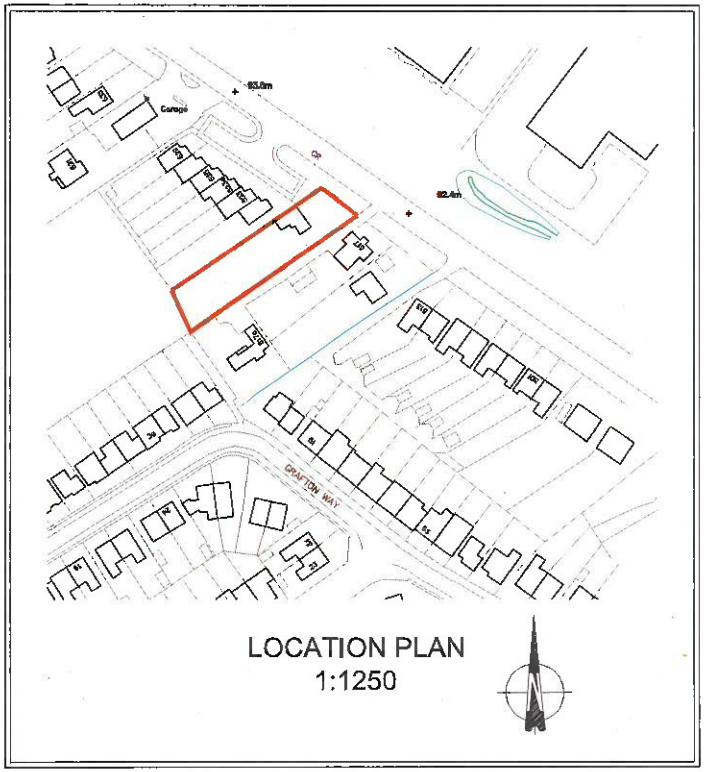


LOCATION PLAN
1:1250

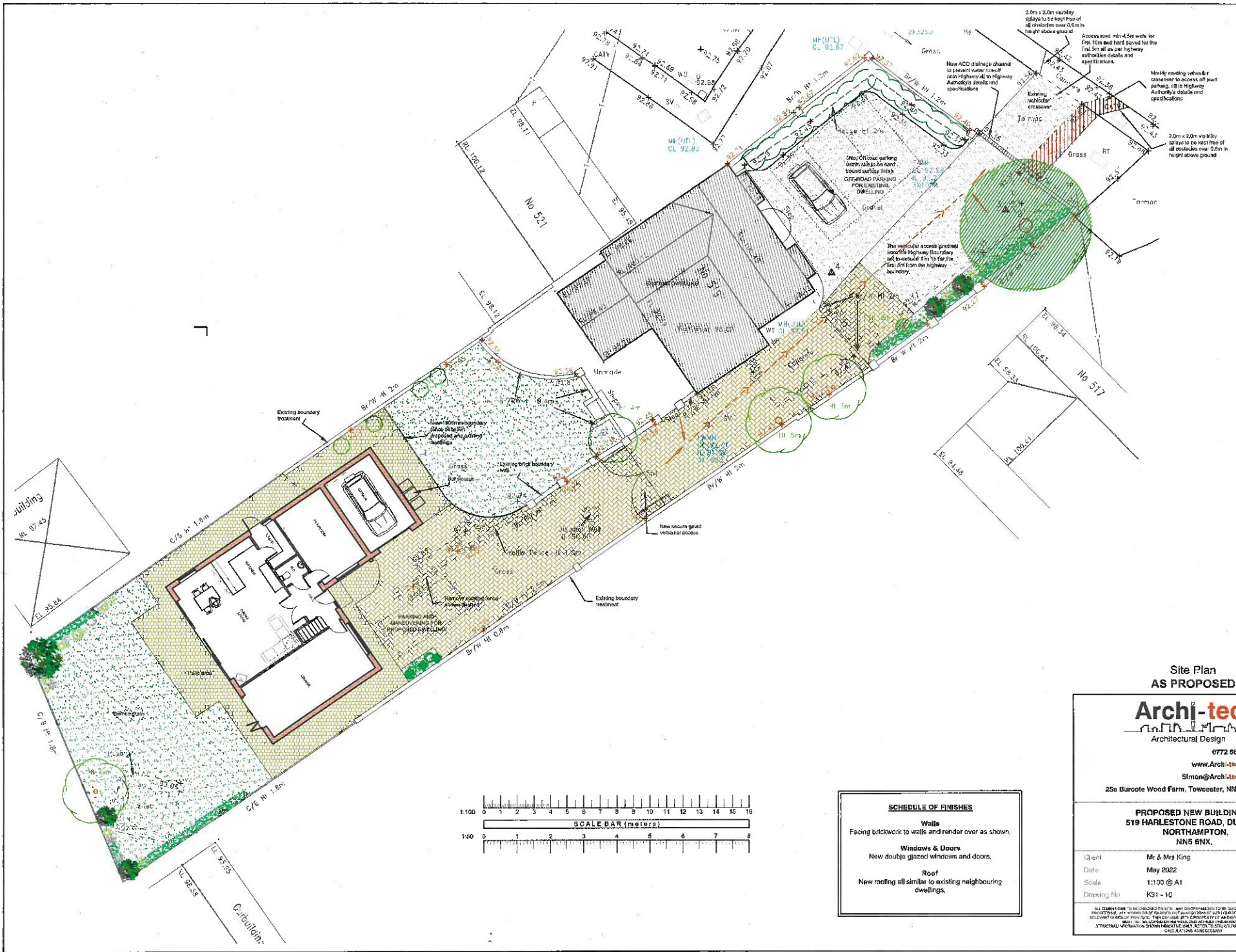
1:500 0 10 20 30 40

SCALE BAR (meters)

1:1250 0 20 40 60 80 100

Archi-tec
Architectural Design
0772 565 8850 Telephone
www.Archi-tec.co.uk Website
Simon@Archi-tec.co.uk Email
25a Burcote Wood Farm, Towcester, NN12 8TA Address

PROPOSED NEW BUILDING at
519 HARLESTONE ROAD, DUSTON,
NORTHAMPTON,
NN5 6NX.



SCHEDULE OF FINISHES

Walls
Facing brickwork to walls and render over as shown.

Windows & Doors
New double glazed windows and doors.

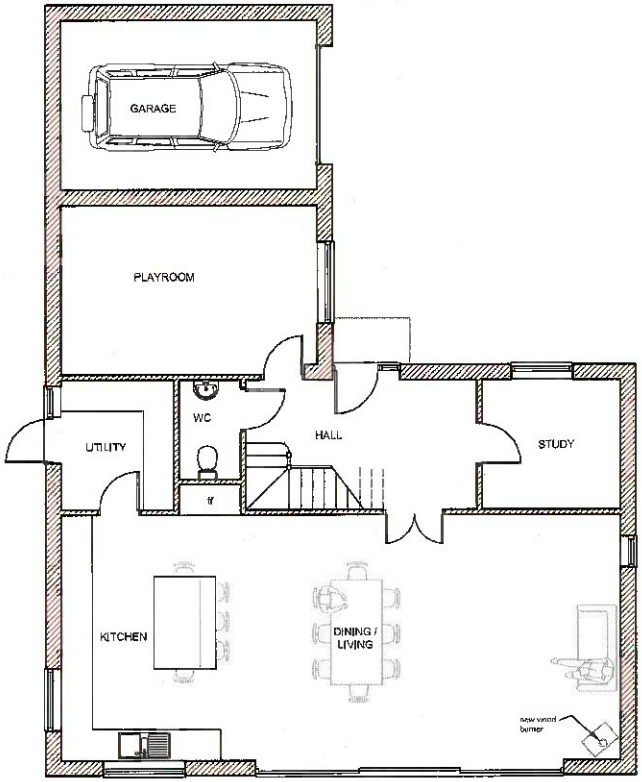
Roof
New roofing all similar to existing neighbouring dwellings.

Site Plan
AS PROPOSED

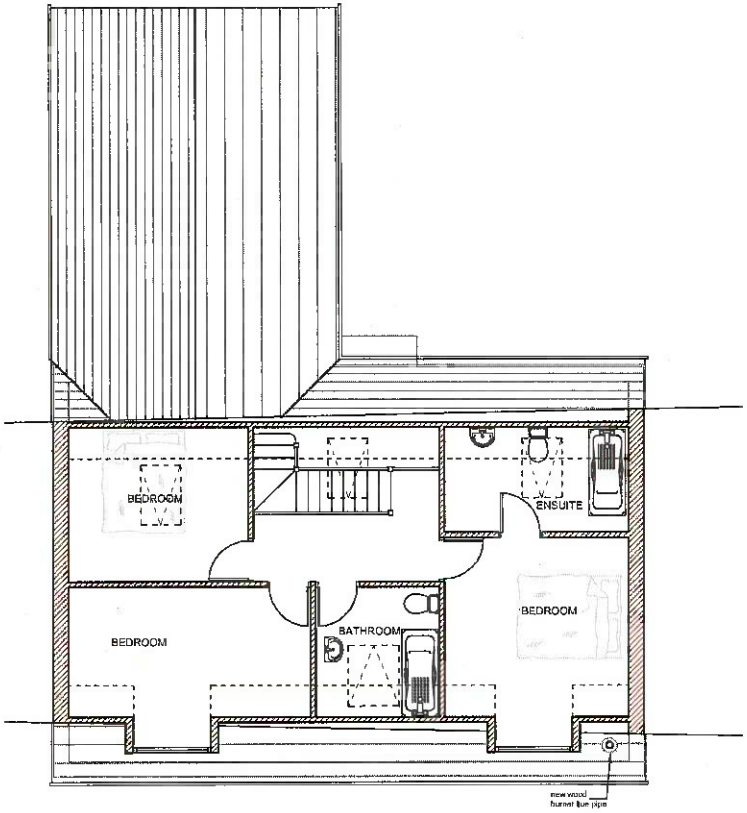
Archi-tec
Architectural Design
07725658850 Telephone
www.Archi-tec.co.uk Website
Simon@Archi-tec.co.uk Email
25a Burcote Wood Farm, Towcester, NN12 8TA Address

PROPOSED NEW BUILDING at
519 HARLESTONE ROAD, DUSTON, NORTHAMPTON, NN5 6NX.

Client	Mr & Mrs King
Date	May 2022
Scale	1:100 @ A1
Drawing No	K31 - 10



GROUND FLOOR PLAN



FIRST FLOOR PLAN

SIDE ELEVATION

SIDE ELEVATION

REAR ELEVATION

FRONT ELEVATION

SCHEDULE OF FINISHES

Walls
Facing brickwork to walls and render over as shown.

Windows & Doors
New double glazed windows and doors.

Roof
New roofing all similar to existing neighbouring dwellings.

REVISION D: Amended following clients comments. 19/10/2022

REVISION C: Amended following clients comments. 02/08/2022

REVISION B: Amended following clients comments. 04/05/2022

REVISION A: Amended following clients comments. 19/04/2022

Plans & Elevations
AS PROPOSED

Archi-tec
Architectural Design
0772 566 6850 Telephone
www.Archi-tec.co.uk Website
Simon@Archi-tec.co.uk Email
25a Burcote Wood Farm, Towcester, NN12 8TA Address

PROPOSED NEW BUILDING at
519 HARLESTONE ROAD, DUSTON,
NORTHAMPTON,
NN5 6NX.

Client	Mr & Mrs King
Date	July 2021
Scale	1:50 / 1:100 @ A1
Drawing No	K31 - 1D

WNN/2022/1288 - 44 MAIN ROAD DUSTON - INSTALLATION OF PLANT TO THE REAR ELEVATION, REMOVAL OF LOUVRES TO REAR WALLS AND INFILLING WITH BRICKWORK

West Northamptonshire Council

Planning Department
Place & Economy Directorate
West Northamptonshire Council
Northampton Area Office
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0300 126 7000
www.westnorthants.gov.uk | planning.nbc@westnorthants.gov.uk

Gary Youens
Duston Parish Council
Duston Community Centre
Pendle Road
Northampton
NN5 6DT

Our Ref:	WNN/2022/1288
Contact:	Satu Pardivalla
Telephone No:	0300 126 7000
Email:	planning.nbc@westnorthants.gov.uk
Date:	5 December 2022

Dear Sir/Madam

TOWN & COUNTRY PLANNING (DEVELOPMENT MANAGEMENT PROCEDURE) (ENGLAND) ORDER 2015

PROPOSAL: **INSTALLATION OF PLANT TO THE REAR ELEVATION, REMOVAL OF LOUVRES TO REAR WALLS AND INFILLING WITH BRICKWORK**

LOCATION: **44 MAIN ROAD**
DUSTON
NORTHAMPTON
NORTHAMPTONSHIRE
NN5 6JF

We are in receipt of the above application and would be grateful for any observations which you may wish to make. They should reach the Planning Service no later than **21 days** from the date of this email.

Please follow the link below in order to view plans and information regarding this application. Insert reference **WNN/2022/1288** into the Application Number search box and click submit. Please note, only this one box needs to be filled in, and it can take up to 2 hours to appear online from the time of this email being sent to you.

http://planning.northamptonboroughcouncil.com/planning

Please send your response to planning.nbc@westnorthants.gov.uk

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Yours faithfully

Satu Pardivalla
Planning Officer
Planning Service

PO Box 1030, Warrington, Cheshire WA4 9FJ
t. 01925 723333 www.adcacoustics.co.uk

ARR/C/2217.80

18th November 2022

One Stop

Assessment of External Plant Noise
for Proposed Store at Duston NN5 6JQ

Prepared for :-

One Stop
Apex Road
Brownhills,
Walsall
WS8 7TS

Prepared by :-

Andrew Raymond

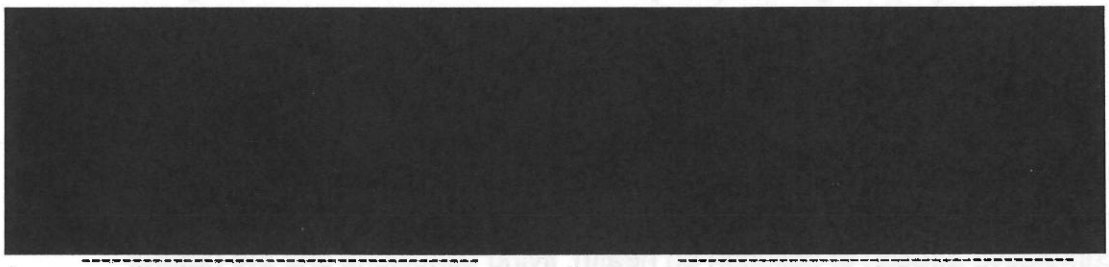
CONTENTS

1.0 SUMMARY

The dominant source of noise affecting the nearby houses was from within the plant room at the rear of the building through the louvred vents. During the night, the plant room stopped for short periods, during which time traffic on the A4500 was audible and constant.

Based on an assumption of all equipment running on full load throughout the night, the predicted noise from the proposed external mechanical equipment is likely under a BS 43142 *"initial estimate"* as *"low impact depending on the context"*.

The context of course is an established commercial area and existing mechanical equipment at a higher level than the proposed equipment. This is based on the assumption that the proposed equipment will run through the night on full load, which is extremely unlikely.



A R Raymond P J Durell

2.0 INTRODUCTION

ADC was asked to carry out an independent assessment of the plant area of the proposed new One Stop store and predict the overall impact at the nearest noise-sensitive positions.

This report begins by discussing the various assessment criteria applicable to this situation. We follow by describing in simple terms our basic approach to calculations and modelling.

After a brief statement of survey details we discuss basic results and the resulting assessment. The impact is discussed along with any recommendations for mitigation.

3.0 ASSESSMENT STANDARDS

3.1 NPPF, NPSE and NPPG

The National Planning Policy Framework (NPPF), the Noise Policy Statement for England (NPSE) and the National Planning Practice Guidance (NPPG) provide nothing in the way of quantitative criteria but instead provide general policy aims and statements and some guidance on how certain situations can be interpreted.

The NPPF's main statement on noise is to be found in paragraph 185:-

> 185. **Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:**
>
> **a) 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[65];**
>
> **b) identify and protect tranquil areas which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason; and**
>
> **c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.**

Paragraph 187 is also relevant:-

187. 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.

The NPPF refers to the NPSE which sets out the following aims:-

1. *avoid significant adverse impacts on health and quality of life;*
2. *mitigate and minimise adverse impacts on health and quality of life;*

   and

3. *where possible, contribute to the improvement of health and quality of life.*

It also introduces the concepts of:

- *NOEL – No Observed Effect Level. In simple terms, below this level, there is no detectable effect on health and quality of life due to the noise.*
- *LOAEL – Lowest Observed Adverse Effect Level. This is the level above which adverse effects on health and quality of life can be detected.*
- *SOAEL – Significant Observed Adverse Effect Level. This is the level above which significant adverse effects on health and quality of life occur.*

SOAEL is clearly something the policy seeks to avoid in aim 1. Aim 2 represents situations between SOAEL and LOAEL, and seeks to minimise and mitigate the effects.

The NPPG section on noise adds some further detail, much of it reproducing the NPPF and NPSE, but some useful qualitative guidance is provided Noise Exposure Hierarchy, as follows:-

Response	*Examples of outcomes*	*Increasing effect level*	*Action*
No Observed Effect Level			
Not present	No Effect	No Observed Effect	No specific measures required
No Observed Adverse Effect Level			
Present and not intrusive	Noise can be heard, but does not cause any change in behaviour, attitude or other physiological response. Can slightly affect the acoustic character of the area but not such that there is a change in the quality of life.	No Observed Adverse Effect	No specific measures required
Lowest Observed Adverse Effect Level			
Present and intrusive	Noise can be heard and causes small changes in behaviour, attitude or other physiological response, e.g. turning up volume of television; speaking more loudly; where there is no alternative ventilation, having to close windows for some of the time because of the noise. Potential for some reported sleep disturbance. Affects the acoustic character of the area such that there is a small actual or perceived change in the quality of life.	Observed Adverse Effect	Mitigate and reduce to a minimum
Significant Observed Adverse Effect Level			
Present and disruptive	The noise causes a material change in behaviour, attitude or other physiological response, e.g. avoiding certain activities during periods of intrusion; where there is no alternative ventilation, having to keep windows closed most of the time because of the noise. Potential for sleep disturbance resulting in difficulty in getting to sleep, premature awakening and difficulty in getting back to sleep. Quality of life diminished due to change in acoustic character of the area.	Significant Observed Adverse Effect	Avoid
Present and very disruptive	Extensive and regular changes in behaviour, attitude or other physiological response and/or an inability to mitigate effect of noise leading to psychological stress, e.g. regular sleep deprivation/awakening; loss of appetite, significant, medically definable harm, e.g. auditory and non-auditory.	Unacceptable Adverse Effect	Prevent

It also makes the point that the subjective nature of noise means that there is not a simple relationship between noise levels and the impact on those affected. This will depend on how various factors combine in any particular situation, including the level of the noise in absolute terms and how it might compare with the underlying background noise, the impulsiveness or intermittence pattern of the noise, its spectral content, and the time of day. It discusses in very general terms the issues to consider when introducing noise sources to existing noise sensitive area, new residential development in areas affected by existing noise sources (most of which have their own specific guidance, such as BS 4142, BS 8233, etc.) and the potential impact on wildlife.

3.2 BS 8233

BS 8233 was updated in March 2014. Quantitatively, however, the design criteria are little changed – just expressed differently to reduce ambiguity in certain situations. Its guidance is primarily intended for new buildings, but the criteria are routinely referred to for putting general noise climates into context.

The criteria in Table 4 of BS 8233 are based on WHO guidance and give the desirable criteria for indoor ambient noise levels for dwellings as follows:-

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 $L_{Aeq,8hour}$	30 dB $L_{Aeq,8hour}$

Note that the standard accepts the widely used rule of thumb that, for a partly open window, the levels just outside will be 15dB higher than those just inside. This brings us to an external equivalent of the above table, as follows:-

Activity	Location	07:00 to 23:00	23:00 to 07:00
Resting	Living room	50 dB $L_{Aeq,16hour}$	-
Dining	Dining room/area	55 dB $L_{Aeq,16hour}$	-
Sleeping (daytime resting)	Bedroom	50 dB $L_{Aeq,8hour}$	45 dB $L_{Aeq,8hour}$

It goes on to state that, where necessary, the criteria can be relaxed by up to 5 dB and still achieve reasonable conditions. Note that the new version does not explicitly state criteria for bedroom noise in terms of dB L_{Amax}.

Garden area criteria are unchanged with 50 dB L_{Aeq} and 55 dB L_{Aeq} being considered desirable and reasonable respectively.

Note that the new version of BS 8233 more explicitly specifies the assessment periods as 16 hour and 8 hour for daytime and night time respectively.

3.3 BS 4142

BS 4142 was updated in November 2014. The standard is very complicated but, basically, it describes methods for rating and assessing sound of an industrial and/or commercial nature, which includes:

a) sound from industrial and manufacturing processes

b) sound from fixed installations which comprise mechanical and electrical plant and equipment

c) sound from the loading and unloading of goods and materials at industrial and/or commercial premises

d) sound from mobile plant and vehicles that is an intrinsic part of the overall sound emanating from premises or processes, such as that from forklift trucks, or that from train or ship movements on or around an industrial and/or commercial site.

The methods described in this British Standard use outdoor sound levels to assess the likely effects of sound on people who might be inside or outside a dwelling or premises used for residential purposes upon which sound is incident.

Characteristics and Context

Certain acoustic features can increase the significance of impact over that expected from a basic comparison between the specific sound level and the background sound level. Where such features are present at the assessment location, we need to add a character correction to the specific sound level to obtain the rating level.

These features can include tonality, impulsivity and intermittency with corrections typically ranging potentially from 0dB to 9 dB. Corrections at the higher end would represent characteristics which are highly perceptible in the context of the ambient noise as a whole. Corrections at the lower end would represent characteristics which are just perceptible in the presence of the ambient noise as a whole,

The significance of sound of an industrial and/or commercial nature depends upon both the margin by which the rating level of the specific sound source exceeds the background sound level and the context in which the sound occurs. An effective assessment cannot be conducted without an understanding of the reason(s) for the assessment and the context in which the sound occurs/will occur. When making assessments and arriving at decisions, therefore, it is essential to place the sound in context.

Assessment

We obtain an *initial estimate* of the impact of the specific sound by subtracting the measured background sound level from the rating level and considering the following.

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

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

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

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

indication of the specific sound source having a low impact, depending on the context.

Where the initial estimate of the impact needs to be modified due to the context, pertinent factors need to be taken into consideration, including the following.

1) The absolute level of sound.

   For a given difference between the rating level and the background sound level, the magnitude of the overall impact might be greater for an acoustic environment where the residual sound level is high than for an acoustic environment where the residual sound level is low.

   Where background sound levels and rating levels are low, absolute levels might be as, or more, relevant than the margin by which the rating level exceeds the background. This is especially true at night.

   Where residual sound levels are very high, the residual sound might itself result in adverse impacts or significant adverse impacts, and the margin by which the rating level exceeds the background might simply be an indication of the extent to which the specific sound source is likely to make those impacts worse.

2) The character and level of the residual sound compared to the character and level of the specific sound.

   We need to consider whether it would be beneficial to compare the frequency spectrum and temporal variation of the specific sound with that of the ambient or residual sound, to assess the degree to which the specific sound source is likely to be distinguishable and will represent an incongruous sound by comparison to the acoustic environment that would occur in the absence of the specific sound. Any sound parameters, sampling periods and averaging time periods used to undertake character comparisons should reflect the way in which sound of an industrial and/or commercial nature is likely to be perceived and how people react to it.

3) The sensitivity of the receptor and whether dwellings or other premises used for residential purposes will already incorporate design measures that secure good internal and/or outdoor acoustic conditions.

3.4 Local Authority

We are not aware of any criteria from the Local Authority.

4.0 BASIC APPROACH TO MODELLING

We have used the well-established CadnaA modelling software which calculates noise propagation based on the processes of *ISO 9613 : Acoustics – Attenuation of sound during propagation outdoors.* Obviously, modelling software is reliant on the inputs and assumptions. The keys ones are:-

1. The ground is mainly reflective (coefficient of 0.11 assumed).

2. Calculations are based on two orders of reflections.

3. The proposed site buildings and the surrounding buildings are assumed to be mainly reflective (0.5 dB loss on reflection assumed).

4. The surrounding trees and vegetation will provide a small degree of absorption but this has been neglected.

5. Where acoustic fences are used, they are also assumed to be reflective the same as the buildings, unless specified otherwise.

6. The source data is based on manufacturers' literature. This is entered into the model along with the conditions under which the data was established (eg. free field, over hard ground, etc.) and tested to ensure the manufacturers' figure are faithfully reproduced in the model. When enclosures or silencers are specified, these are built into the figures.

7. All units are assumed to run continuously on full load.

5.0 SURVEY DETAILS

5.1 Site Times and Personnel

The site surveys were carried out by Mark Pimlett of ADC Acoustics from approximately 21:00 to 22:00 on 23:30, and from 02:00 to 04:00 the following night. The times were chosen to represent evening opening times of the store, and through the quietest times of the night.

5.2 Instrumentation

Instrumentation used was a Rion NL-52. This is a Class I sound level meter which holds a current calibration certificate and which was field-calibrated as necessary. The meter was set up to measure continuous 5 minute samples of the noise climate.

All measurements have been gathered in terms of dB L_{eq}, dB L_{max} and dB L_{90} in overall A-weighted terms, and in octave bands across the frequency range. See Definition of Acoustic Terms in Appendix 1.

5.3 Measurement Positions

The main measurement positions were as shown on the following plan.

Position 1 was chosen to represent the nearest residential properties. Brief measurements were also carried out at Position 2 to simulate positions less affected by the existing mechanical noise.

The microphone was 1.3 m above ground and well away from other reflecting surfaces.

5.4 Survey Conditions

Weather conditions were as follows :-

Rain	:	none, dry roads
Cloud	:	20%
Temperature	:	8 -14 Celsius
Wind	:	negligible

The general noise climate appeared to be normal and representative.

6.0 RESULTS AND DISCUSSIONS

6.1 Background Noise and Design Targets

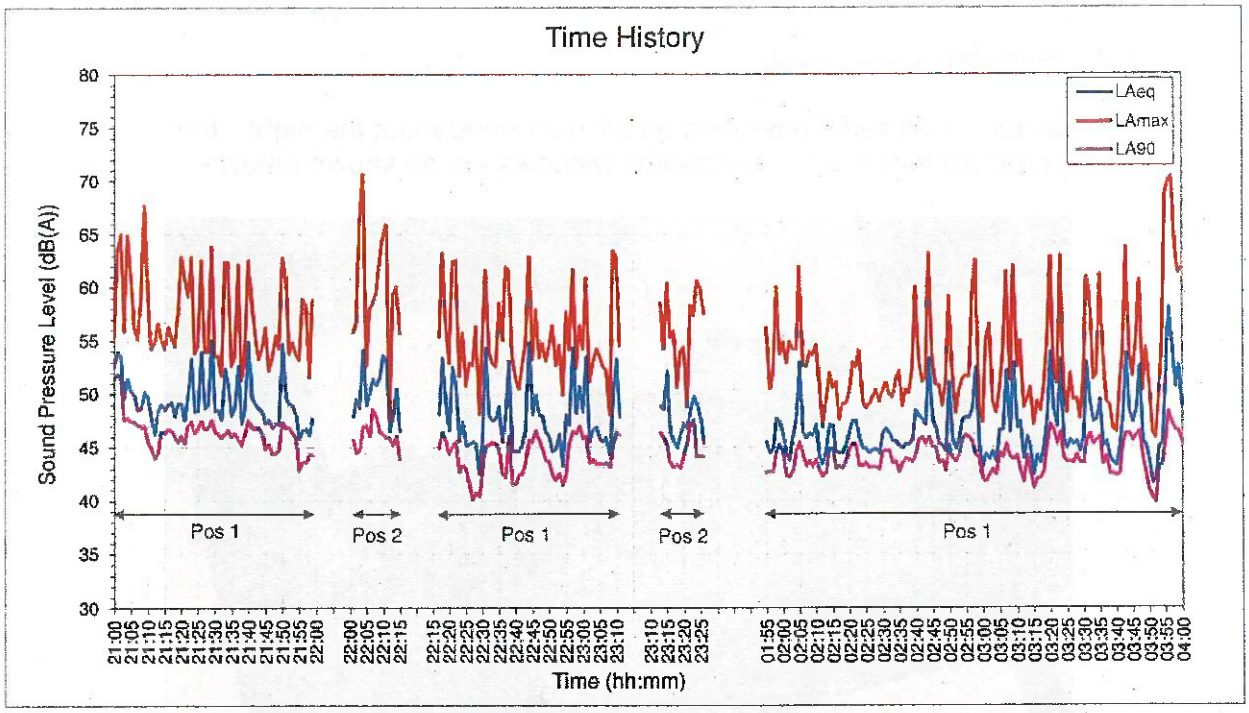
The dominant source of noise affecting position 1 was from within the plant room at the rear of the building through the louvred vents.

For most of the time it was a constant noise with periodic boosts which increased the noise. Note that the three existing aircon units were inaudible throughout. Two short measurements were made at position 2 in an attempt to represent the effect of the plant room not present. It was still audible during the boost phases but generally inaudible for the quieter periods.

During the evening period there was traffic entering and leaving the car park as well as the sound of sounded like bell-ringing practice and occasional aircraft.

During the night, the plant room stopped for short periods, during which time traffic on the A4500 was audible and constant.

Full results are shown in Appendix 2. They are summarised graphically below.



We have used the lowest 15 minute periods for the evening and night time measurements in the assessments. BS 4142 does not require us to use the lowest periods but it is a means mitigating against potential uncertainty of varying conditions, for instance on different days of the week. The levels for these periods are as follows:-

Lowest 15 minute Periods	*Index*	*dB(A)*
Position 1 Evening	Leq	49
	Lmax	57
	L90	45
Position 2 Evening	Leq	51
	Lmax	63
	L90	46
Position 1 Night Time	Leq	48
	Lmax	57
	L90	44
Position 2 Night Time	Leq	48
	Lmax	56
	L90	44

6.2 Manufacturer's Noise Data

The following data was provided:-

Unit A - Danfoss MPPM044VVLP01E (Size h560mm x w1106mm x d466mm) : Noise - 43dB(A) @ 10m
Unit B - Daikin RZASG140MV1 (Size h990mm x w940mm x d320mm) : Noise - 57dB(A) @ 1m
Unit C - Daikin RZASG140MV1 (Size h990mm x w940mm x d320mm) : Noise - 57dB(A) @ 1m
Unit D - Daikin RZASG140MV1 (Size h990mm x w940mm x d320mm) : Noise - 57dB(A) @ 1m
Unit E - Daikin RZAG35A (Size h734mm x w870mm x d373mm) : Noise - 48dB(A) @ 1m

Where only the single figure (dB(A) or dB L_A) are available but no octave band data (spectral shape or noise levels across the frequency range), for calculation purposes we have assumed a spectral shape based on similar units.

6.3 Predicted Noise Levels

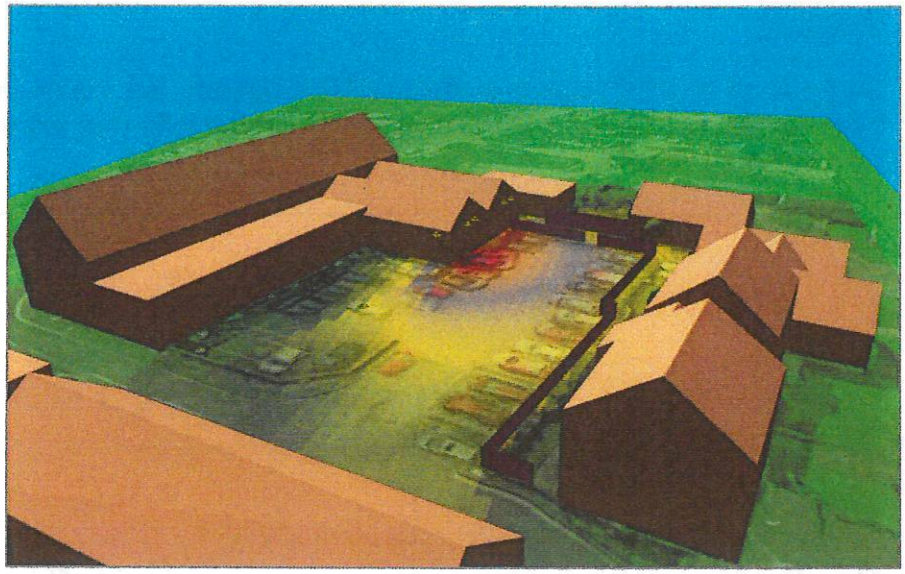
Based on all items operating on full load throughout the night[1], the predicted levels at the residential windows are as shown below:-

Note that:-

- The beige shapes are surrounding buildings and the application site building in its proposed form.
- The magenta lines are fences.
- The yellow crosses are the mechanical equipment point sources.
- The coloured numbers are the noise levels at the residential facades. Note that the software is set up to present the noisiest floor level.
- Note that the noise contours are shown for guidance as to how the noise propagates. The contours are at a height of 4 m.

The following 3D view should help to visualise the model.

[1]This is an extremely unlikely scenario, with most items rarely running beyond 70% for night time and rarely all items at the same time.



6.4 Assessments

For the assessment of proposed noise, BS 4142 requires us to assess the predicted industrial noise against the "background sound level" which is the noise climate without development described in terms of the underlying dB L_{A90} index.

The proposed equipment can potentially run 24 hour and so only the night time BS 4142 assessment is presented as follows:-

Specific Sound Level:	42 dB L_{Aeq}
Feature Corrections[2]	
tonality:	0 dB L_{Aeq}
impulsivity:	0 dB L_{Aeq}
intermittency:	0 dB L_{Aeq}
other:	0 dB L_{Aeq}
Rating Level:	42 dB L_{Ar}
Background Sound Level:	44 dB L_{A90}
Rating Level Excess re. Background	-2 dB

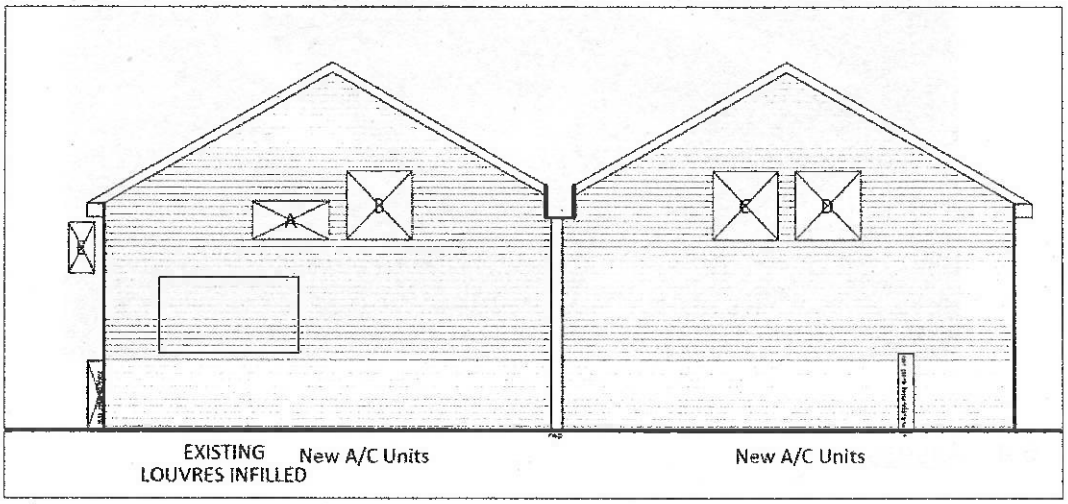
This is below what a BS 4142 *"initial impact"* rates as *"low impact depending on the context"*.

The context of course is an established commercial area and existing mechanical equipment at a higher level than the proposed equipment. This is based on the assumption that the proposed equipment will run through the night on full load. This is extremely unlikely and we are advised that equipment is unlikely ever to go beyond 70% capacity at night.

[2] Unlikely to be significant in the presence of residual sound. Even at source the equipment is unlikely to be tonal or impulsive. It will vary with demand but this should take the form ramping load, rather than on/off running.

6.5 Mitigation

We have no specific recommendations for mitigation, but the modelling relies on the units being arranged as shown on the following extract from the architect's drawings:



6.6 Discussion of Uncertainty

BS4142 requires us to

"Consider the level of uncertainty in the data and associated calculations. Where the level of uncertainty could affect the conclusion, take reasonably practicable steps to reduce the level of uncertainty".

The measurements of Background/Residual Sound were taken at times regarded as representing what are likely to be the worst case (quietest) parts of the opening times and through the night. We have no reason to believe that the conditions were anything other than representative of normal conditions. BS 4142 does not state what would be a representative background noise but there is certainly no suggestion that it should be the lowest. However, in order to allow for the possibility of variation in levels, we have used the lowest 15 minute period.

Source data is assumed to be reliable. Where uncertainty may exist for this we have mitigated it by assuming that all equipment is running on full load all of the time, which would in our experience would rarely occur, if ever.

Calculations are based on the processes of *ISO 9613 : Acoustics – Attenuation of sound during propagation outdoors.* We know of no concerns within our industry as to the basic reliability of these methods and it is cited in BS 4142 as *"a validated method of calculating sound levels".* The CadnaA software uses this standard and the input assumptions err on the side of caution and are stated in Section 4.

Varying meteorological conditions are unlikely to have a significant impact on results as the distances involved are small.

7.0 CONCLUSIONS/RECOMMENDATIONS

Based on an assumption of all equipment running on full load throughout the night, the predicted noise from the proposed external mechanical equipment is likely under a BS 43142 *"initial estimate"* as *"low impact depending on the context"*.

The context of course is an established commercial area and existing mechanical equipment at a higher level than the proposed equipment. This is based on the assumption that the proposed equipment will run through the night on full load, which is extremely unlikely.

Our only recommendation is that you issue this report to Planners and invite Officers to contact us directly with any queries.

Appendix 1

Definition of Acoustic Terms

The Decibel

The decibel is the basic unit of noise measurement and is denoted dB. Technically, it is a means of expressing the difference in noise level between the measured noise and a standard level of noise. Most often the threshold of human hearing is used as the standard reference but is really should be stated. The threshold of human hearing is a sound pressure of 20μPa or a sound power of 1pW.

A sound pressure level or SPL should be expressed in dB(re. 20μPa). A sound power level or SWL should be expressed in dB(re. 1pW). If the reference levels are omitted, it will often (but not always) be safe to assume that they are referenced to the threshold of human hearing.

A-Weighting and dB(A)

The human hearing system responds differently to different frequencies. The A-weighting system takes account of this by emphasising mid and high frequencies more than low frequencies to give an overall level. An A-Weighted noise level, therefore, reflects the way normal, healthy hearing would perceive the overall level of the noise. The basic unit is dB(A), although other systems of expressing an A-weighted levels are discussed below.

Other weighting systems, such as C-Weighting, denoted dB(C), reflect the human hearing system's response at higher noise levels.

NR and NC Levels

NR curves and NC curves are a series of curves representing noise levels across the frequency range. A given noise climate has an NR level or NC level if it equals a point on the curve at any frequency. They are particularly, although by no means exclusively, used as a means of specifying noise limits in an indoor environment, for instance from mechanical services or traffic noise break-in from the outside. They are typically expressed as NR or NC followed by a number, e.g. NR40, NC55, etc.

Equivalent Continuous Sound Level, L_{eq}

This can be simplistically described as a way of expressing the average noise level.

The unit is dB L_{eq}. For A-weighted levels the unit is dB(A) L_{eq} or, in more modern units, dB L_{Aeq}.

Maximum Level, L_{max}

This is the maximum level reached (usually for a fraction of a second) in the measurement period.

The unit is dB L_{max}. For A-weighted levels the unit is dB(A) L_{max} or, in more modern units, dB L_{Amax}.

Statistical (Percentile) Levels, L_n

During a measurement of fluctuating noise, it is often useful to establish the levels exceed for a percentage of the time. L_n is the index representing the level exceeded for n% of the measurement period.

The unit is dB L_n. For A-weighted levels, the unit is dB(A) L_n or, in more modern units, dB L_{An}.

Common examples are as follows :-

dB L_{A90} is the A-weighted level exceeded for 90% of the time and is often used to describe the underlying background noise.

dB L_{A50} is the A-weighted level exceed for 50% of the time. Mathematically, it is the median, another kind of average.

dB L_{A10} is the A-weighted level exceeded for 10% of the time and has traditionally been used to describe the intermittent highs in the noise climate such as passing cars or aircraft.

Frequency Analysis

Here the audible frequency range is divided up into bands and the noise level is expressed in each frequency band from low pitches to high pitches.

Octave Band analysis is where the frequency range is divided into 8 bands from 63 Hz to 8kHz, or sometimes into 10 bands from 31.5 Hz to 16kHz.

1/3 Octave Band analysis provides more detailed subdivision into 24 bands from 50 Hz to 10kHz, or sometimes into 30 bands from 20Hz to 20kHz.

Narrow Band analysis takes this further with the possibility of many thousands of bands, possibly only 1Hz wide, or even less.

In all types of frequency analysis, the level in each band can be expressed in terms of L_{eq}, L_{max}, L_n, etc. as defined above.

Sound Insulation

Sound insulation is best expressed across the frequency range in octave bands or third octave bands. Often, however, in known environments such as domestic sound insulation and speech privacy, it is simpler to express the sound insulation as a single figure. A higher value means better sound insulation.

The most common ways are dB D_{nTw}, dB R_w and $dB_{(mean\ 100\text{-}3150Hz)}$. The first two are ways of expressing average sound insulation, weighted to account for speech frequencies. The third is simply an un-weighted mean value.

The Building Regulations Approved Document E (ADE) routinely refer to $D_{nTw} + C_{tr}$ The C_{tr} term is a negative number which is used to modify the D_{nTw} value for the insulation properties at lower frequencies.

ADE also uses the L_{nTw} index for impact sound transmission. It is a measure of the level of noise in the room below a room in which a standard tapping machine is being used. It represents the impact sound transfer such as footfall noise, scraping chairs, washing machines, etc. A lower value means better insulation.

Reverberation Time

The most common measure of Reverberation Time is, effectively the time taken for sound from a steady source to decay by 60 dB after it has been abruptly cut off. In practice it is often difficult to measure a 60 dB decay and so decays of 30 dB, 20 dB, or even 10 dB are often used and adjusted pro rata, although the exact measure is not quite the same.

Reverberation Time is generally expressed as RT in seconds. We may, if we are being precise, add subscripts 60, 30, etc to show whether the basis of the measure is 60 dB decay, 30 dB decay, etc. E.g. the RT_{60} = 0.52s, the RT_{30} = 0.49s, etc.

RT can be expressed in octave bands or 1/3 octave bands across the frequency range, or at central frequencies such as 500 Hz or 1kHz.

A1 SHEET

NOTE:
ALL MEASUREMENTS TO INTERNAL AREAS OF SALES FLOOR ARE TAKEN TO THE SHOP FIT INSTALLATION, AS ALL WALLS ARE CONCEALED OR INACCESSIBLE
ALSO, INTERNAL MEASUREMENTS WERE RESTRICTED DUE TO THE STORAGE AND GOODS WITHIN STORAGE AREAS, ETC.
IT IS RECOMMENDED THAT FURTHER CHECK DIMENSIONS OF WALL POSITIONS ARE MADE FOLLOWING THE REMOVAL OF THE EXISTING SHOP FIT INSTALLATION AND GOODS, ETC.

DO NOT SCALE FROM THIS DRAWING. ALL DIMENSIONS TO BE VERIFIED BY THE CONTRACTOR ON SITE

Proposed Air Conditioning Units - Details

Unit A - Danfoss MPPM044VVLP01E (Size h560mm x w1106mm x d466mm) : Noise - 43dB(A) @ 10m
Unit B - Daikin RZASG140MV1 (Size h990mm x w940mm x d320mm) : Noise - 57dB(A) @ 1m
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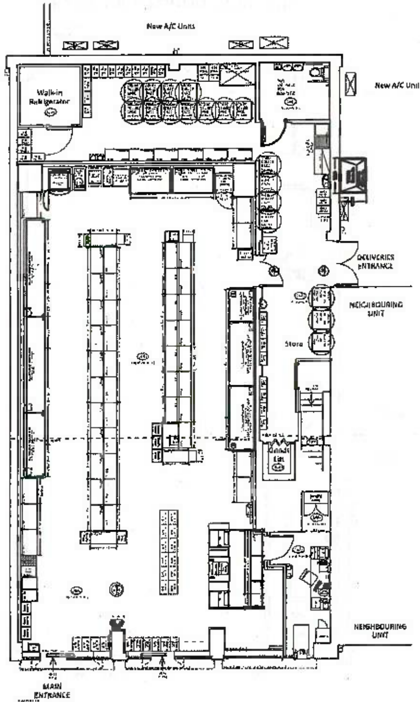
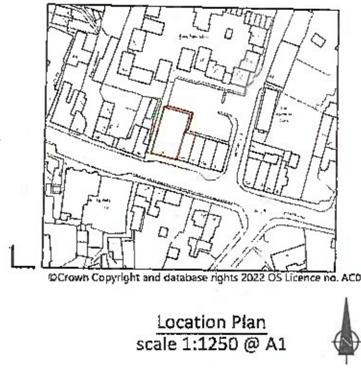


Proposed Ground Floor Plan
scale 1:100@ A1

Proposed Front Elevation
scale 1:100@ A1



Location Plan
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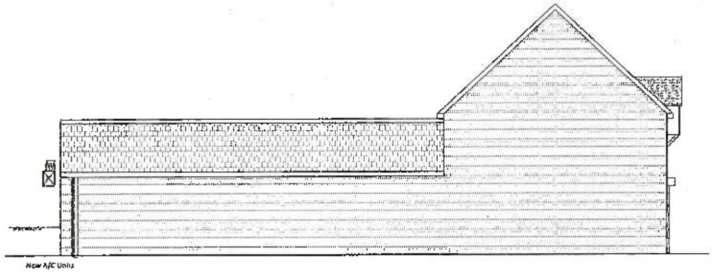
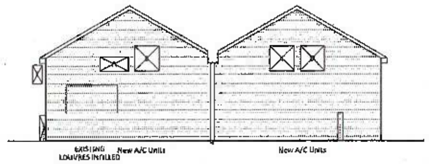


Proposed Left Side Elevation
scale 1:100@ A1



Proposed Rear Elevation
scale 1:100@ A1

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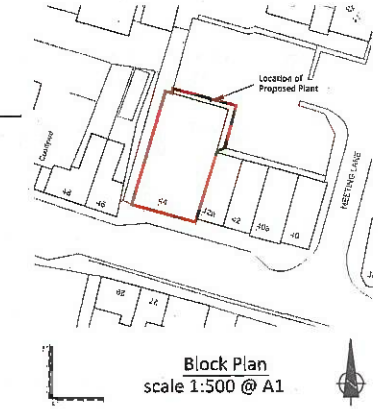

Block Plan
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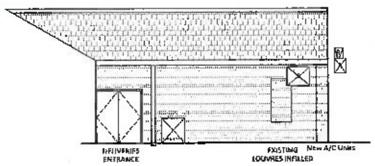

Proposed Rear Right Side Elevation
scale 1:100@ A1

PROPOSED - PLANNING

REV	DESCRIPTION	DATE	INIT	CHKD
C	[illegible]	[illegible]	PL	PM
B	AC positions altered to accord with acoustician requirements	21.11.2022	PL	PM
A	AC details added	17.11.2022	PL	PM

calfordseaden

Client
One Stop Stores Limited
Project
Former Co-op, 44 Main Road, Duston, Northampton, NN5 6JF
Title
Proposed Ground Floor Plan & Elevations - Planning

Scale	Date	Drawn By	Checked By	Project No	Drawing No	Revision
Varies@A1	07.11.2022	PAL	PM	B220072	B 201	C

Sequent Court 214 Hagley Road Edgbaston Birmingham B16 9PH
0121 454 1008 birmingham@calfordseaden.co.uk
calfordseaden.co.uk

A1 SHEET

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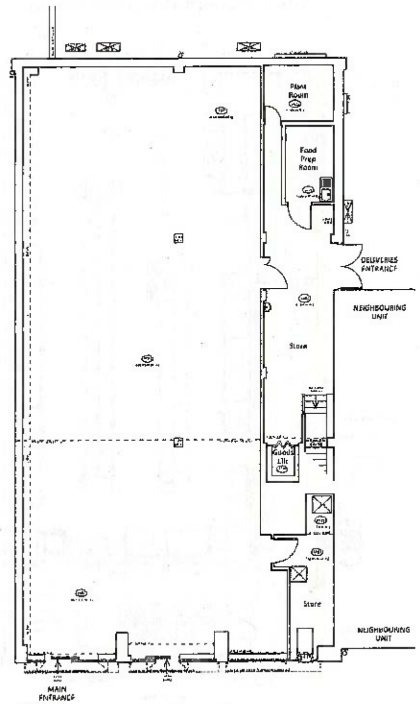

Existing Ground Floor Plan
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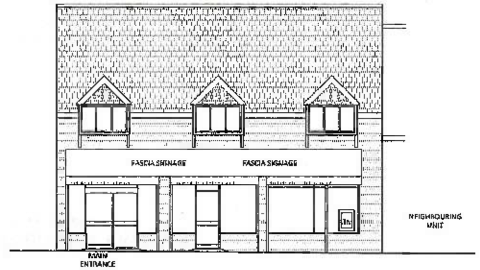

Existing Front Elevation
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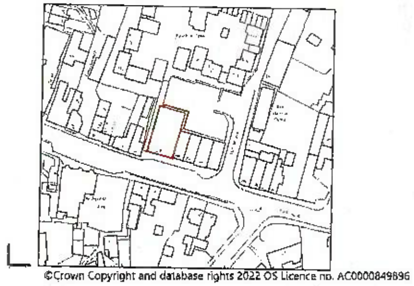

Location Plan
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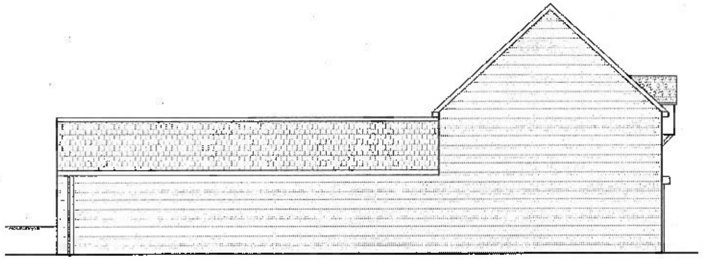
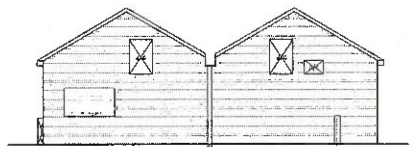

Existing Left Side Elevation
scale 1:100@ A1


Existing Rear Elevation
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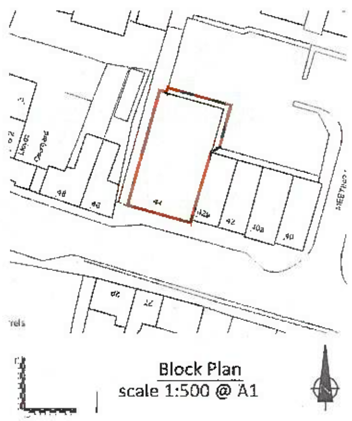

Block Plan
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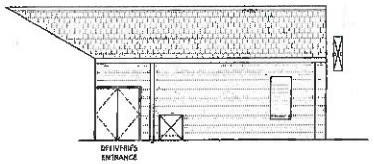

Existing Rear Right Side Elevation
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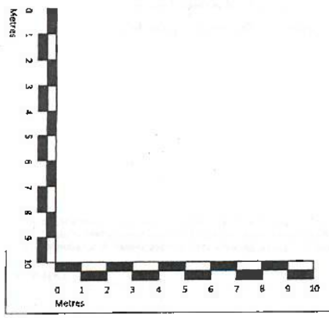

REV	DESCRIPTION	DATE	INIT	CHKD
A	Address altered	29.11.2022	PL	PF

EXISTING - PLANNING

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Client
One Stop Stores Limited
Project
Former Co-op, 44 Main Road, Duston, Northampton, NN5 6JF
Title
Existing Ground Floor Plan & Elevations - Planning

Scale	Date	Drawn By	Checked By	Project No:	Drawing No:	Revision
Varies@A1	07.11.2022	PAL	PM	B220072	- B 101	A

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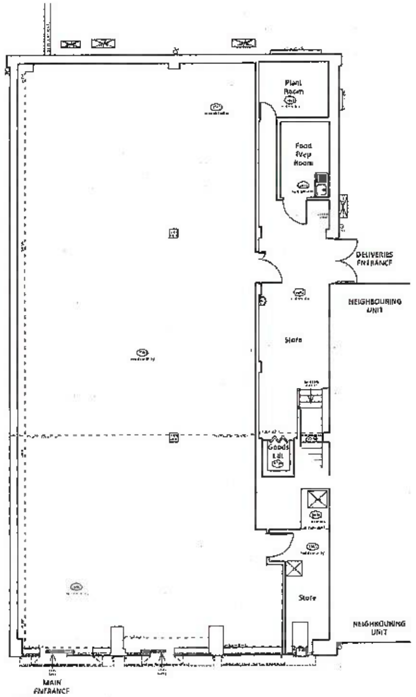
A1 SHEET

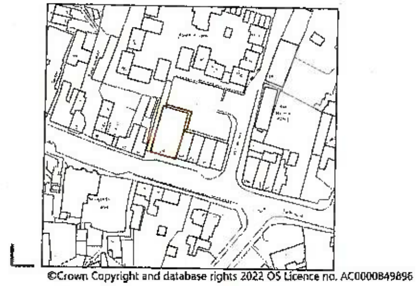
NOTE:
ALL MEASUREMENTS TO INTERNAL AREAS OF SALES FLOOR ARE TAKEN TO THE SHOP FIT INSTALLATION, AS ALL WALLS ARE CONCEALED OR INACCESSIBLE
ALSO, INTERNAL MEASUREMENTS WERE RESTRICTED DUE TO THE STORAGE AND GOODS WITHIN STORAGE AREAS, ETC.
IT IS RECOMMENDED THAT FURTHER CHECK DIMENSIONS OF WALL POSITIONS ARE MADE FOLLOWING THE REMOVAL OF THE EXISTING SHOP FIT INSTALLATION AND GOODS, ETC.

DO NOT SCALE FROM THIS DRAWING. ALL DIMENSIONS TO BE VERIFIED BY THE CONTRACTOR ON SITE



Existing Ground Floor Plan
scale 1:100@ A1

Existing Front Elevation
scale 1:100@ A1



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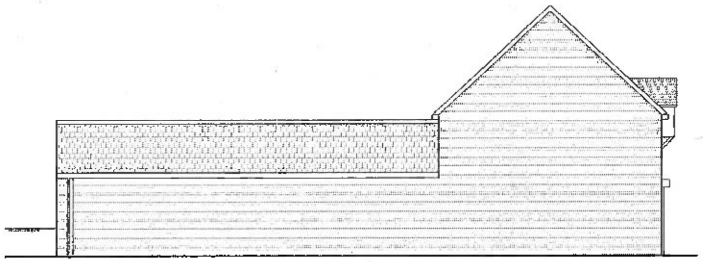
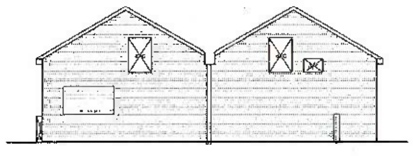
Location Plan
scale 1:1250 @ A1

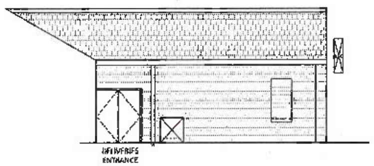


Existing Left Side Elevation
scale 1:100@ A1

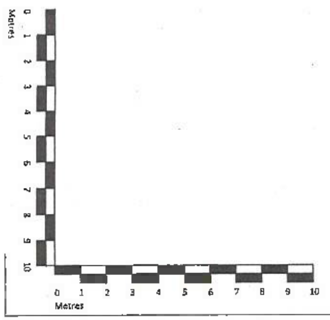


Existing Rear Elevation
scale 1:100@ A1

Block Plan
scale 1:500 @ A1



Existing Rear Right Side Elevation
scale 1:100@ A1



REV	DESCRIPTION	DATE	INIT	CHKD
A	address altered			

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Client
One Stop Stores Limited
Project
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EXISTING - PLANNING