

Remediation Strategy

Former Methodist Church, New Trent Street, Ealand



Remediation Strategy

Former Methodist Church, New Trent Street, Ealand

Report Status

Project Number	20399
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Appendices Drawings > Material Suitability – Chemical Suitability (Generic Assessment Criteria)

Appointment

Soil and Structures Ltd were instructed by Airedale Architects on behalf of Mr and Mrs Winter (the Client) in April 2024 to prepare a Remediation Strategy (*this Report*) in support of the development of the former Methodist Church, New Trent Street, Ealand (the Site).

Development proposals are understood to include for the renovation of the former church for use as a residential dwelling and construction of a new detached property to the south with associated hardstanding (driveways) and soft landscaping (gardens).

Reliance on the advice presented herein rests solely with the Client.

Scope and Context

The Remediation Strategy offers advice on risk mitigation measures or ‘remedial actions’ that are required to bring the site up to a condition that would be deemed ‘suitable for use’.

The legal context of this advice is rooted within national planning policy guidance (the National Planning Policy Framework) that is governed by planning law (various acts).

In this context, the Site would be deemed ‘suitable for use’ if residual risk is reduced relating to one historic, ground-related hazard; potentially harmful material.

Other ground-related hazards, e.g. shrink-swell clays, are beyond the scope of this Report but should be addressed through the design process.

Background to this Report

This Report is preceded by existing ground-related reporting including a Ground Investigation Report (desk-based) prepared by Soil and Structures Ltd (ref. 20399-R-001-V02).

This Report was revised (V02) following discussions and consultations with the Local Planning Authority. In general, the revisions include for bringing the language of the Report more in-line with that set out within current guidance; Land Contamination Risk Management.

References

The Remediation Strategy has been written with reference to various sources of information including; design drawings (appended) and existing ground-related report referenced above (not appended; readers of this Report assumed have access to it).

Reference is also made to the ‘Engineer’ within this Report that relates to the appointed design engineer (structural and/or civil) who is most likely to be the main point of contact within the design team.

Non-Technical Summary

The existing Ground Investigation Report (desk-based) recommended confirming the chemical quality of existing Topsoil deposits if they were planned for reuse as well as a precautionary approach to managing the risk presented by any unsuitable material (chemically or physically) beneath proposed areas of soft landscaping.

Development proposals are outlined within this Report.

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1.0 The Site and Proposed Development

1.1 The Site

Location and size: The Site (the planning boundary) comprises a parcel of land approximately 0.13 ha in area with an address of Former Methodist Church, New Trent Street / Main Street, Ealand (Figure 1).

Access: The Site is accessed on foot and by vehicle via an existing driveway off New Trent Street / Main Street.

Topography: surface topography of the Site is level resting around 5 mAOD.

Utilities: Below ground utilities are expected to be present beneath the Site (drainage, power and possible gas) with evidence of overhead lines also noted on Site and along the eastern boundary.

Existing structures: At the point of issue, the former Methodist Church building was present on Site that appears to comprise a masonry construction (two storey height) with hip roof and single storey extensions to the rear (west).

1.2 The Proposed Development

Development proposals: Development proposals (Figure 1) are understood to include for the renovation of the former church for use as a residential dwelling and construction of a new detached property to the south with associated hardstanding (driveways) and soft landscaping (gardens).

Development works and risk: An appreciation of the construction processes is essential for development-related risk assessments given the groundworks stand to meaningfully alter the level of risk, e.g. unstable slopes being removed by earthworks, or unsuitable material being exposed as part of the works.

To enable this development, the following groundworks are likely to be required, N.B. listing is outline only.

- > **Preparation:** Surface strip of existing shallow soils across the proposed development footprint.
- > **Earthworks (cut and fill):** Are not expected to be required here with existing and proposed levels generally remaining consistent.
- > **Utility Excavations:** Excavation of any drainage and other utility alignments.
- > **Foundations:** Subject to the selected foundation solution, construction of sub-structures (foundations).
- > **Surfacing:** Reinstatement of soft landscaping and formation of new hardstanding surfaces.

Risk profile of the proposed development for human health: The proposed development would see a former place of worship converted to a residential use with the presence of a former structure (Sunday school associated with the church; since demolished) noted as a key feature.

Constructed in the mid to late 19th century, the two former structures are expected to have been heated by coal fired boilers or open fires that would have generated coal ash. Occasionally disposed of remotely, this ash was commonly discarded within soft landscaping or used as bedding material for paths. These practices commonly result in the chemical quality of shallow soils being degraded, sometimes to the point that they present a risk of potential harm to the health of future Site users. This presents a background threat for land quality around any structures of this age. In addition, any renovation works on the structures may have included the use of asbestos containing materials however, there is no evidence to suggest this was the case.

Soil and Structures typically advocate for a responsive strategy for dealing with land quality issues in scenarios such as this whilst emphasising the importance for a high level of duty of care and record keeping during groundworks so good confidence can be had that the proposed development can be deemed suitable for use; the ultimate aim of the process.

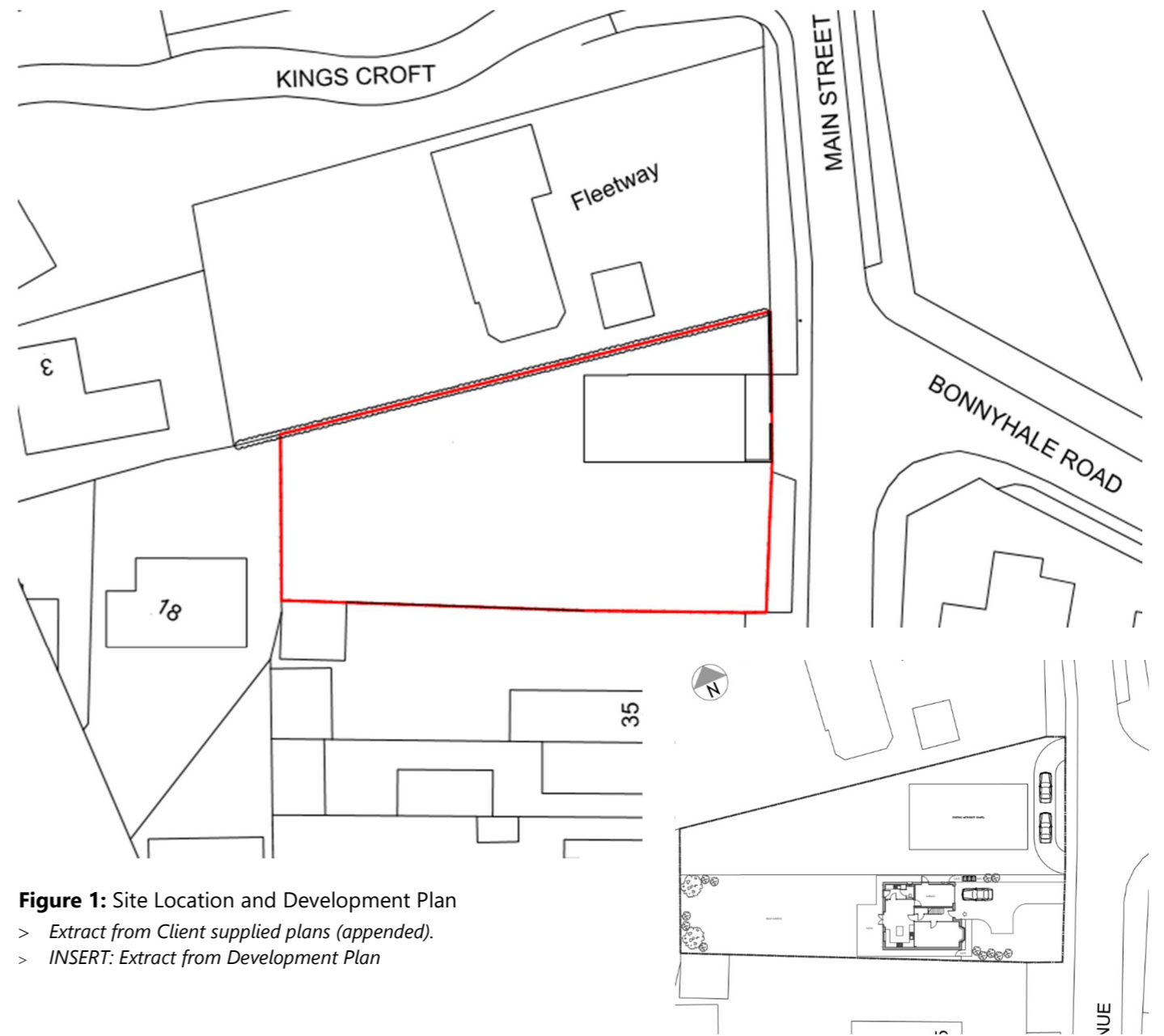


Figure 1: Site Location and Development Plan

- > Extract from Client supplied plans (appended).
- > INSERT: Extract from Development Plan

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2.0 Remedial Works

Remedial action has been recommended on a precautionary basis for one, contaminated land related hazard:

⚠ Potentially harmful material

More specifically, any residual Made Ground present on Site is assumed to not be chemically suitable for retention within proposed soft landscaping areas.

It is also noted that the residual Made Ground is also likely to be physically unsuitable for retention owing to the potential presence of 'sharps', e.g. glass or angular brick.

Remedial action is therefore recommended to prevent (*source removal or pathway intervention*) end users (*receptors*) being exposed to residual Made Ground deposits (*the source of potentially harmful material*).

① **Precautionary Remedial Action:** The remedial action is 'precautionary' in lieu of intrusive investigation and chemical testing of the soils having been conducted.

This approach is recommended in this scenario as a more robust means to confirm that the Site is suitable for use.

It should be borne in mind that, the alternative of further assessment (in the form of chemical testing of the soils) may demonstrate that the risk presented by potentially harmful material is acceptably low (for all contaminant linkages) and that no specific remedial action is required.

It is the experience of the Author of this Report that, in scenarios such as this (former Victorian era structures with subsequent phases of modification and demolition) this approach commonly under-assesses the 'real' risk presented by potentially harmful material; risk that is only evident when Site-wide groundworks are progressed.

In plainer terms, spot sampling of soils may 'miss' areas where potentially harmful material is present whereas, adopting precautionary remedial action, that may otherwise not be required, will offer greater confidence that the risk associated with any of this material has been reduced to acceptably low levels.

It is also noted that development proposals include for inherent risk mitigation through the provision of a hardstanding driveway and construction of the new dwelling over the former Sunday School structure; the areas where residual Made Ground is more likely to be present.

2.1 Remedial Action 1 – Risk reduction for potentially harmful material

The objective of this remedial action is to prevent end users of the Site being exposed to any residual Made Ground that is: i) likely to be physically unsuitable for retention within soft landscaping areas on Site; and, in lieu of quality testing, ii) assumed to be chemically unsuitable.

This remedial action can be achieved through one of two options detailed below.

It is understood that Option 1 is expected to be adopted with Option 2 only adopted if and where unexpectedly deep Made Ground deposits are encountered, i.e. > 1.0 m.

Option 1: Removal of the Made Ground deposits (*source removal*) where present beneath soft-landscaping areas:

If requiring disposal:

- > **Waste classification:** the waste classification should be agreed with the groundwork contractor.
- > **Disposal:** should be to a suitably licensed disposal facility via covered wagons with appropriate certification, e.g. waste transfer notes.

Alternatives to disposal:

- > **Transfer of the Made Ground to a soil treatment plant** (if and where its chemical composition falls within accepted and permitted limits); or,

> **Re-use of the Made Ground on the development Site:**

In order for re-use of the Made Ground on Site to be considered then, unless falling under a waste exemption or else, a Materials Management Plan (MMP) would need to be developed and declared in line with CL:AIRE's Definition of Waste: Code of Practice (v2).

The MMP process is based being able to demonstrate four main factors: (1) ensuring the Made Ground doesn't present an adverse risk to human health of the environment; (2) ensuring that the Made Ground is 'suitable' without treatment; (3) that there is a specified use for the Made Ground; and, (4) that the quantity of use is defined.

The need for further assessment, e.g. additional testing, may be required to confirm: the chemical suitability if it is to be re-used within soft landscaping; and, the geotechnical suitability if it is to be re-used within load bearing situations, e.g. under hardstanding.

- > **Soft landscaping:** following evidenced removal of the Made Ground deposits from proposed soft landscaping areas, the 'clean capping' can be designed to the landscape architect's specification noting that generally at least 150 mm of Topsoil is recommended to support grass growth.

It is also noted that the quality of any soil forming material, e.g. Topsoil, would still need to be confirmed even when this approach is adopted. Advice on this is given under Option 2 below.

Option 2: Provision of a 'clean capping' (*pathway interruption*) to any areas where the Made Ground is present beneath soft-landscaping areas.

A clean capping or 'cover system' is designed to serve as a dedicated barrier (pathway interruption) between potentially harmful material (residual Made Ground) and end users (residents).

The requirement for a clean capping is only required if and where residual Made Ground (non-natural soils) are present beneath areas of proposed soft landscaping.

As noted above, if it can be demonstrated, through inspection, that the sub-grade is free from Made Ground and comprised of natural soil, there would be no requirement for a dedicated clean capping to be provided and the soft landscaping design can be architect led.

- > **Thickness (Table 1):** If following reduced level excavations, residual Made Ground (non-natural soils) is present beneath the soft landscaping areas, it is recommended that 'two spade depths' or 600 mm of clean capping is provided to these areas of soft landscaping.

This thickness aligns with current guidance¹ and a precautionary assessment of risk.

If and where visible evidence of potentially harmful material is encountered then deeper thicknesses of capping may be required or an alternative construction, e.g. no-dig layers. It is noted that such an occurrence would be an 'unexpected encounter' for which a pre-agreed response plan would need to be agreed with the local planning authority (as detailed within Section 3.2)

¹ Cover Systems for Land Regeneration - Thickness of cover systems for Contaminated Land BRE/AGS/NHBC: 2004 (under review)

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For tree and shrub planting areas, the advice of the landscape architect should be sought however, in general, at least 600 mm of soil is likely to be required.

Table 1: Clean capping design

Soft Landscaping Area	Clean Capping Component and Thickness			Total Depth
	Topsoil	Subsoil	Other	
All soft landscaping areas where residual Made Ground is present	Min. 150 mm*	450 mm	N/A	600 mm
All soft landscaping areas where residual Made Ground is NOT present	Min. 150 mm*	N/A	N/A	Min. 150 mm

* In general, the provision of topsoil thicknesses greater than 300 mm is liable to induce a collapse of the soil structure (compression or collapse)

> **Geotextile:** At this stage, the requirement for a geotextile demarcation layer as part of the clean capping is not recommended. If and where unforeseen material is revealed that may be potentially harmful, the use of a geotextile may be considered necessary as part of a response plan.

> **Sourcing:** Topsoil could be sourced from either;

- On site recovered Topsoil that would require check testing to confirm it is 'suitable for use'; or,
- Off Site from a reputable supplier who can provide source testing data to confirm the chemical suitability of the material before being transported to Site.

> **Quality:** Topsoil quality is defined both in terms of its physical and chemical suitability.

Physical suitability considers the material's structure, texture and macro-nutrients and is generally beyond the scope of validation works as far as 'contaminated land' matters are concerned. In some instances, e.g. where a material described as a soil-forming material is clearly not, the physical suitability will be called into question however, this is typically the landscape or landscape architect's responsibility.

Chemical suitability considers whether the material presents a risk to human health from direct contact, ingestion, inhalation of dust and other pathways. This is the focus of 'contaminated land' planning conditions.

The chemical suitability of the soil forming material (including Site-won Topsoil) shall be assessed against Generic Assessment Criteria (screening chemical compounds) that reflect the proposed end use of the development (residential with homegrown produce).

A copy of the Generic Assessment Criteria screening sheet is appended for reference.

The exact frequency and scope of the chemical testing would need to be confirmed once the source and volume of soil forming material (recovered Topsoil or imported) was confirmed.

The requirements for testing frequency and scope are set out within Local Planning Authority guidance² that are not reproduced herein (given sources of soil forming material have yet to be confirmed) but is hyperlinked below.

2.2 Response plan for 'Unforeseen Contamination'

If and where any material is revealed on Site that is suspected as being unsuitable, i.e. potentially harmful, then the advice of the Engineer or the author of this Report should be sought.

Examples of 'unforeseen contamination' could include visibly stained or odorous soils. If and where soils are encountered that differ physically or in colour from those detailed and illustrated herein then it is also recommended that of the Engineer or the author of this Report is sought.

The Engineer should in turn notify North Lincolnshire's Contaminated Land Team of the encounter.

If and where the unforeseen contamination requires remedial action that differs from the actions detailed herein, then a revised Remediation Strategy should be submitted to North Lincolnshire's Contaminated Land Team and agreed in advance of any work on or around the potentially contaminated material recommencing.

2.3 Other Actions

New water supply pipes are expected to be formed into natural sub-soil and, if trenches can be confirmed to be free from any potentially polluting material, e.g. stained or odorous soils, can be constructed of any suitable material, e.g. HDPE.

² [YALPAG Guidance - Verification of Cover Systems version 4.1 - na.pdf \(northyorks.gov.uk\)](#)

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3.0 Validation Plan

This section sets out the lines of evidence required to demonstrate, or validate, how the recommended remedial works achieve their stated aim.

On completion of the development works (including the required remedial action) a Validation Report should be prepared and submitted to the Local Planning Authority for approval. This can be in any format but should set out the necessary lines of evidence detailed below.

3.1 Validation of Remedial Action 1

The following lines of evidence should be sought to demonstrate Made Ground deposits are either not present or covered by a suitable thickness of 'clean capping' this work has been completed:

Option 1: Removal of the Made Ground deposits (*source removal*) where present beneath soft-landscaping areas:

> *For the excavation works:*

- Photographic evidence of the reduced level illustrating removal of the Made Ground and presence of a natural sub-grade.

> *For the removal and disposal / treatment off Site:*

- Waste transfer notes relating to Made Ground disposal and/or duty of care relating to the treatment off Site.

> *For the quality of soft landscaping soils:*

- Even where Made Ground is removed from the soft landscaping areas and a natural soil sub-grade is confirmed, either recovered Topsoil or imported soils will be required to form the soft landscaping.
- As detailed within Section 2.1, the suitability of the recovered Topsoil or any imported soil forming materials needs to be confirmed.
- The exact frequency and scope of the chemical testing would need to be confirmed once the source and volume of soil forming material (recovered Topsoil or imported) was confirmed. The requirements for testing frequency and scope are set out within Local Planning Authority guidance³.
- The chemical suitability of the soil forming material shall be assessed against Generic Assessment Criteria (screening chemical compounds) that reflect the proposed end use of the development (residential with homegrown produce). A copy of the Generic Assessment Criteria screening sheet is appended for reference.

Option 2: Provision of a 'clean capping' (*pathway interruption*) to any areas where residual Made Ground is present beneath soft-landscaping areas.

> *For the clean capping thickness (where required):*

- Hand excavated trial pits (one per every 50 m² of soft landscaping) illustrating (through photographic evidence) how, the required thickness of clean capping has been provided over the residual Made Ground. Guidance on the requirement for photographic evidence can be found in Local Planning Authority guidance³.

- Relative comparisons of reduced and final level surveys are not considered suitable however photographic evidence of the reduced level surface, prior to clean capping placement can be used to supplement the validation works.
- > *For the clean capping quality:*
 - As detailed within Section 2.1, the suitability of Site-won Topsoil or any imported soil forming materials needs to be confirmed.
 - The exact frequency and scope of the chemical testing would need to be confirmed once the source and volume of soil forming material (recovered Topsoil or imported) was confirmed. The requirements for testing frequency and scope are set out within Local Planning Authority guidance³.
 - The chemical suitability of the soil forming material shall be assessed against Generic Assessment Criteria (screening chemical compounds) that reflect the proposed end use of the development (residential with homegrown produce). A copy of the Generic Assessment Criteria screening sheet is appended for reference.
- > *For other forms of barrier, e.g. paving, driveways:*
 - Photographic evidence of the physical barrier will be required that can take the form of photographs of the general condition of development following completion of the landscaping works.

3.2 Other Actions

If and where any unexpected encounters of potentially harmful or polluting material are made, then confirmation of the response plan having been completed satisfactorily should be included within the Validation Report.

³ [YALPAG Guidance - Verification of Cover Systems version 4.1 - na.pdf \(northyorks.gov.uk\)](#)

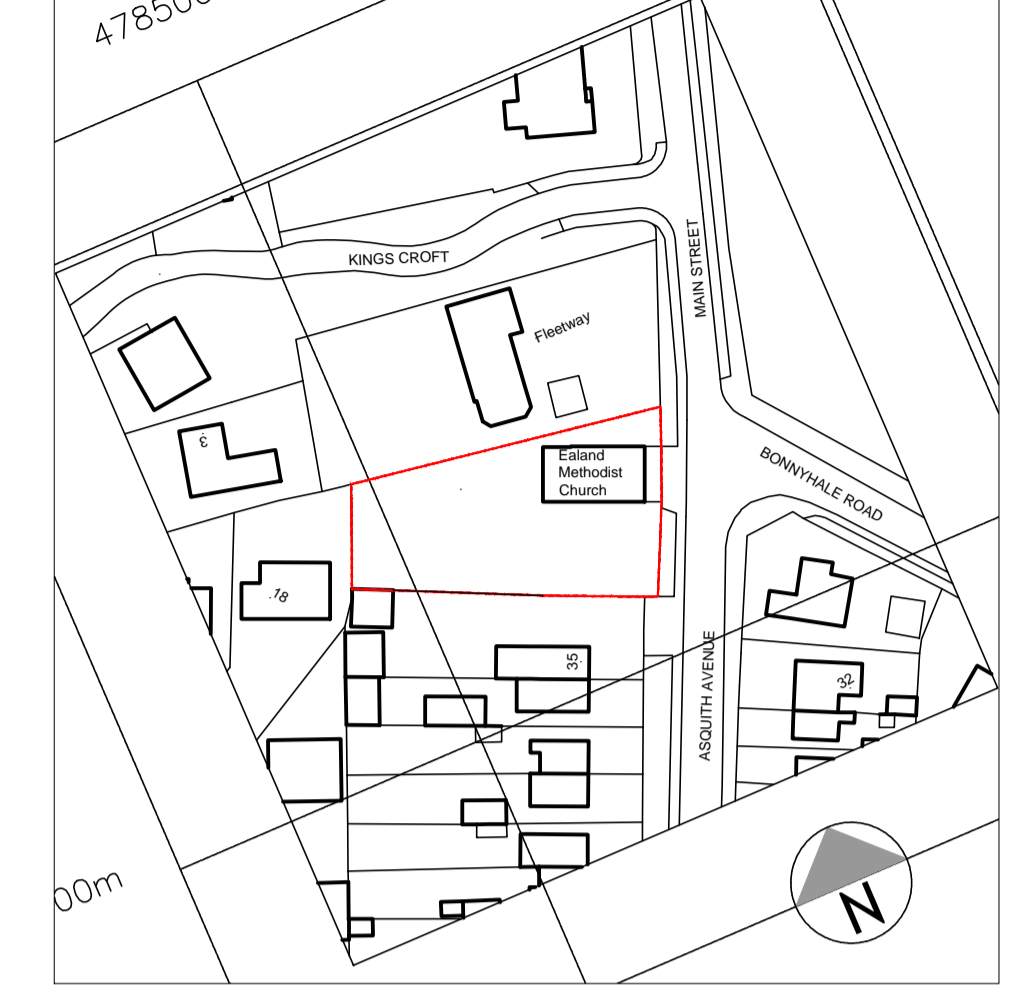


A1 1:200
A3 1:400



Written dimensions on these drawings shall take precedence over scaled dimensions. Contractors shall verify and be responsible for all dimensions and conditions on the project and Airedale Architects must be notified of any variations from the dimensions and conditions shown by these drawings prior to commencement of any work. All contractors are deemed to have made themselves aware of site conditions prior to entering into any contract.

A1 1:1250
A3 1:2500



REV	DESCRIPTION	DATE	DRAWN

airedalearchitects

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office@airedalearchitects.com www.airedalearchitects.com

CLIENT Mr and Mrs Winter

ADDRESS Former Ealand Methodist Chapel
New Trent Street, Ealand, DN17 4JJ

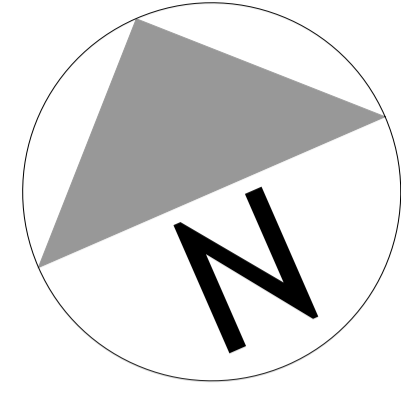
PROJECT Property Conversion and New Dwelling

DRAWING Site and Location Plans

DRAWN OS DATE March 2024 SCALE 1:200@A1

DWG No. 2422/01

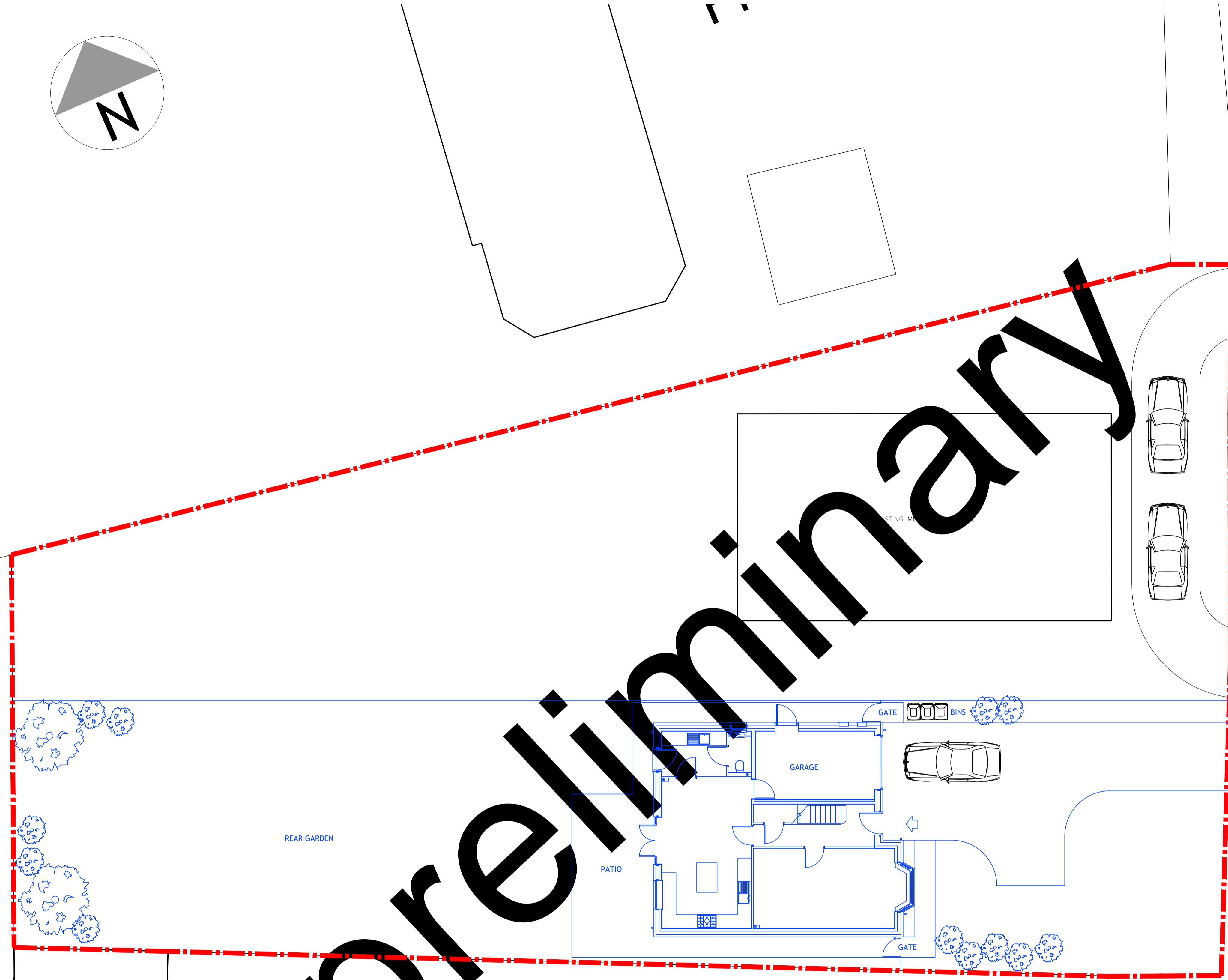
STATUS EXISTING



A1 1:100
A3 1:200



Written dimensions on these drawings shall take precedence over scaled dimensions. Contractors shall verify and be responsible for all dimensions and conditions on the project and Airedale Architects must be notified of any variations from the dimensions and conditions shown by these drawings prior to commencement of any work. All contractors are deemed to have made themselves aware of site conditions prior to entering into any contract.



REAR GARDEN

PATIO

GARAGE

GATE

BINS

GATE

35

ENUE

REV	DESCRIPTION	DATE	DRAWN

airedalearchitects

5A Chapel Lane, Bingley, BD16 2NG 01274 551140
office@airedalearchitects.com www.airedalearchitects.com

CLIENT	Mr and Mrs Winter		
ADDRESS	Former Ealand Methodist Chapel New Trent Street, Ealand, DN17 4JJ		
PROJECT	Property Conversion and New Dwelling		
DRAWING	Proposed Site Plan Layout Detached House		
DRAWN	KM	DATE	March 2024
		SCALE	1:100@A1
DWG No.			
STATUS	EXISTING		

