

89 WENALLT ROAD
TONNA

PROPOSED
NEW DWELLING

SITE REMEDIATION

OPTIONS APPRAISAL
&
REMEDICATION
STRATEGY

November 2024

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PROPOSED NEW DWELLING AT 89 WENALLT ROAD TONNA

SITE REMEDIATION OPTIONS APPRAISAL AND STRATEGY

November 2024

24/009
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Proposed New Dwelling at 89 Wenallt – Site Remediation Options Appraisal and Strategy

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References

- A]** Site investigation supplementary Report Sept. 2024 [post demolition of former dwelling]
- B]** Integral Geotechnique Report -2021
- C]** Summary Results chart [2021 results & 2024 results comparison]

Appendices

- A-** Clean Cover Detail - Section and plan

89 WENALLT RD

1.0 Brief

1.1 General

To undertake a remediation options appraisal and then prepare a remediation strategy for the proposed new dwelling on land at 89 Wendall road SA11 3QH, following the undertaking of supplementary site investigations in 2024 3QH following demolition of the original existing dwelling, and to prepare a report document for submission to the local authority to support the planning application made to discharge Condition 1 of the NPT Planning Consent Approval Notice ref P2021/0416

2.0 Basis of Study and Report

2.1 The basis of this study into remediation options and development of a remediation strategy is as follows,

- 2.1.1** Review of 2021 Site Investigation report by Integral Geotechnique that was submitted with the original planning application
- 2.1.2** Review of the supplementary site investigations undertaken by ateb in 2024, as reported on in their report dated September 2024
- 2.1.3** Review of correspondence and discussion with the planning authority and the NPT environmental Dept following report submissions
- 2.1.4** Review of proposed new dwelling plans and proposals for the dwelling and external areas as per the scheme drawings
- 2.1.5** Development of Remediation options and their appraisal
- 2.1.6** Development of a suitable remediation strategy and factors that need to be taken into account in its implementation
- 2.1.7** Development of a verification outline plan for future implementation and confirmation of remediation works at end of the build project

2.2 Report Author

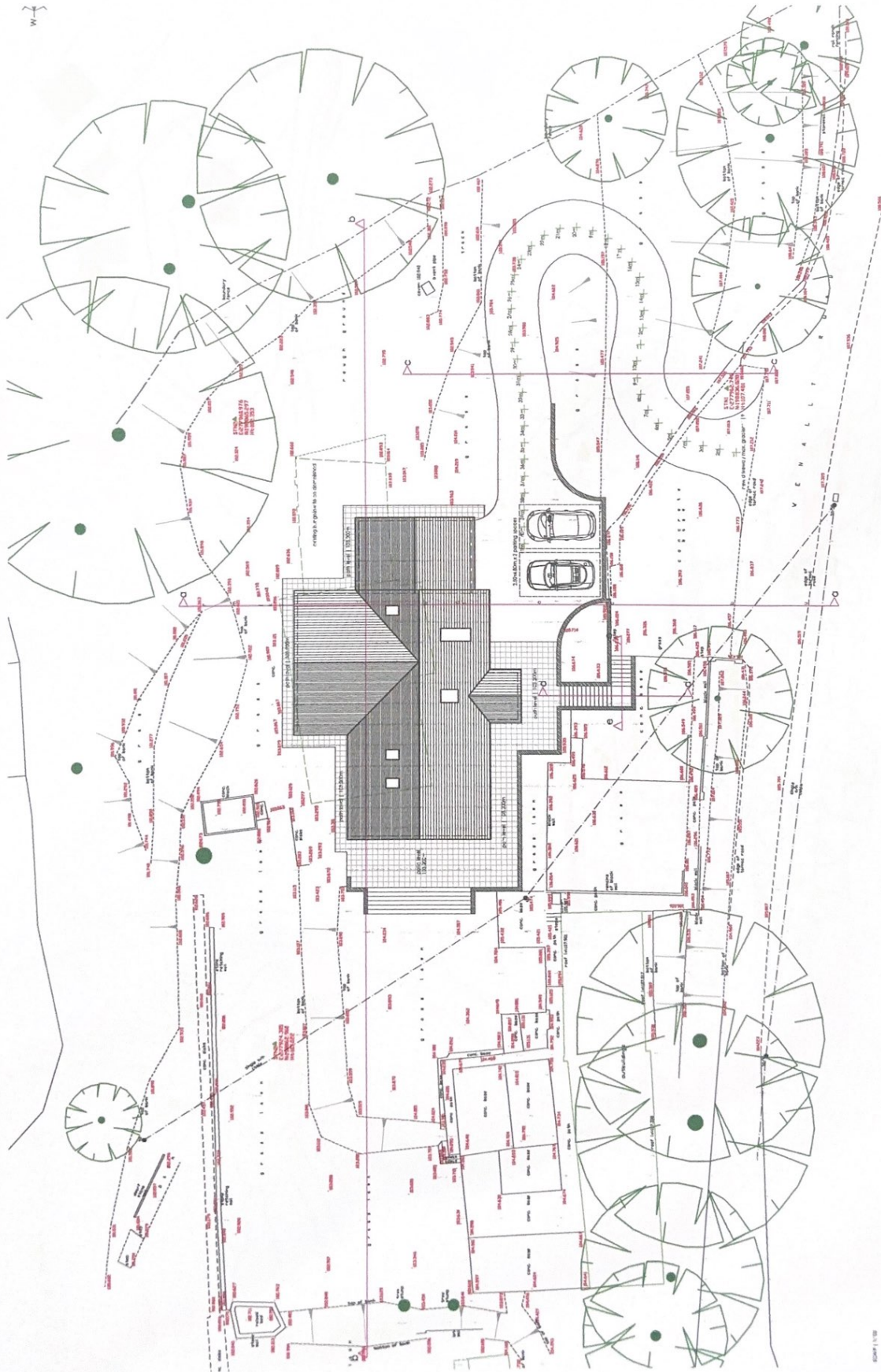
This Remediation options appraisal and remediation strategy has been drawn up by Gareth M George MSc DIC MICE, Consulting engineer.

PROPOSED NEW DWELLING AT 89 WENALLT ROAD TONNA

SITE REMEDIATION OPTIONS APPRAISAL AND STRATEGY

3.0 Site Location and Proposals

- 3.1** The site on land at Wenallt Road Tonna [SA11 3QH] lies below the road as shown on the below site location plans. consist of an irregular parcel of land of less than 1 hectare in area
- 3.2** The scheme proposals are for demolition of an original farm dwelling on the site and building of a new dwelling as per the approved proposals plans also included below,
- 3.3** As can be seen on the proposal plans below the external areas to the proposed dwelling are to be a mix of hard standings, roads, patio areas and grassed/lawn areas – there are no proposals for any garden areas for cultivation.

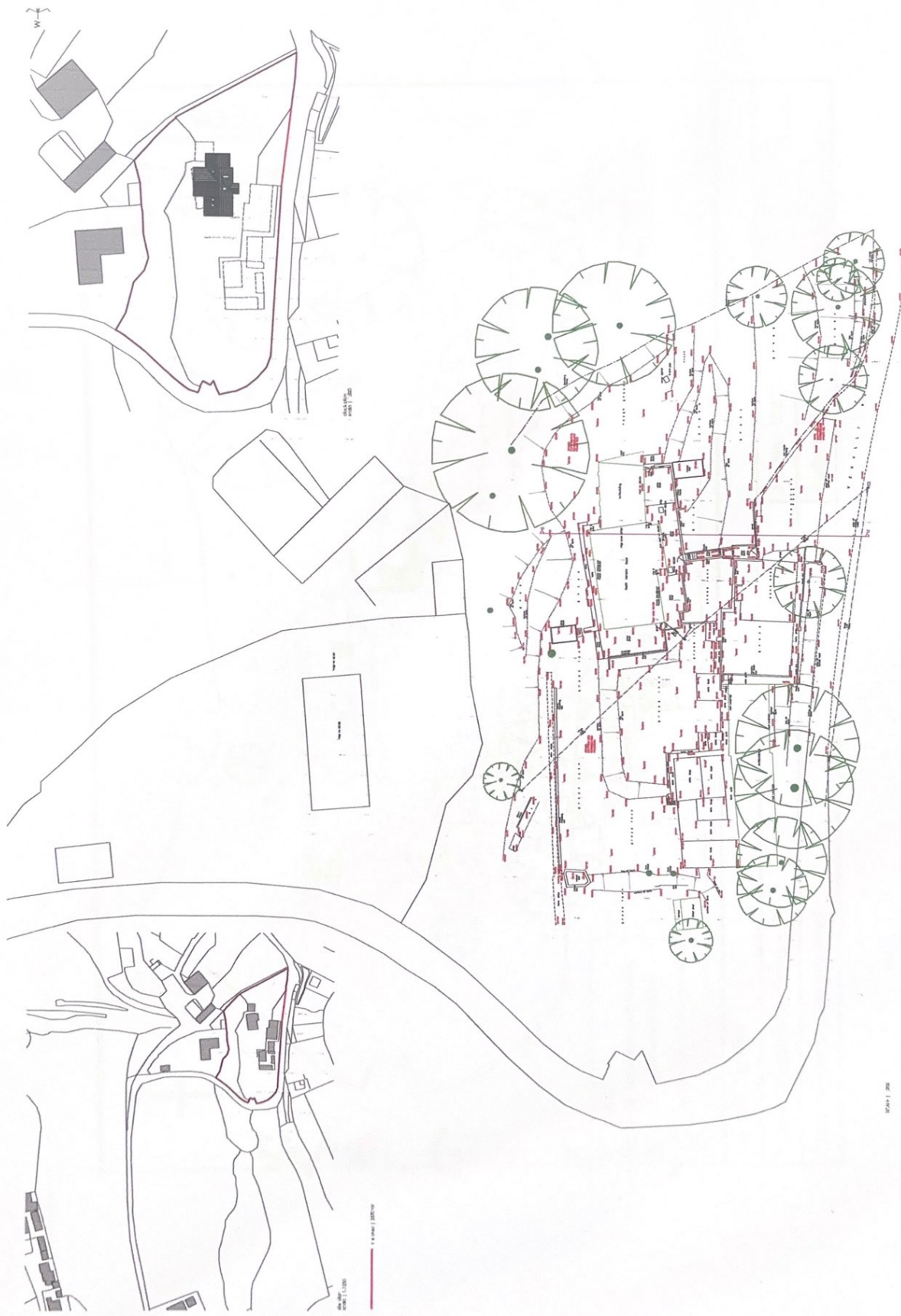


PROJECT: **PROPOSED BUILDING AND LANDSCAPE**
 DRAWING NO: **01**
 DATE: **10/10/2018**
 SCALE: **1:500**
 PROJECT LOCATION: **10/10/2018**

planning drawing



01/10/2018



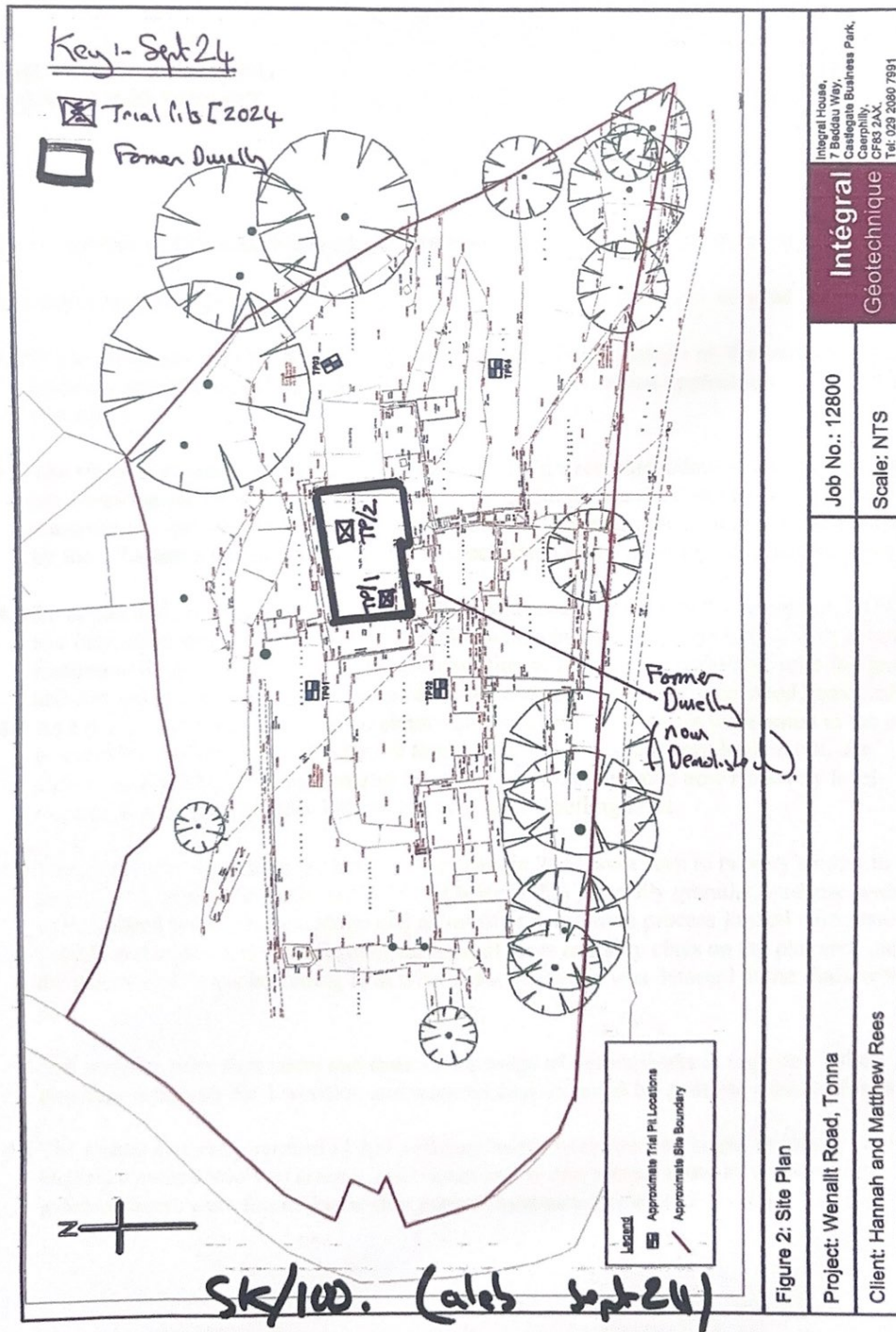
Scale: 1" = 20'



Q
ARCHITECTURE

planning drawing

Project	Location	Client	Architect
REPLACEMENT OF EXISTING BUILDING WITH NEW BUILDING	1000 N. 10TH ST.	THE CITY OF ALBUQUERQUE	Q ARCHITECTURE
DATE	DATE	DATE	DATE
1/1/2010	1/1/2010	1/1/2010	1/1/2010



**PROPOSED DWELLING
WENALLT SI REPORT**

4.0 Review of Previous Reports and summary of general site conditions

4.1 From a review of previous reports on the land the following summary is noted

4.2 A site investigation study was undertaken by Integral Geotechnique on the land pre the initial planning application and submitted to the LPA in support of that application which was then consented

4.3 The Integral Report gave recommendations including a recommendation that supplementary site investigation be undertaken post demolition of the former dwelling to assess ground conditions under where the original building stood- This recommendation was taken on board by the LPA and a condition [no 1] to that effect added to the planning consent document

4.4 To action and progress an application to discharge condition no 1 of the consent in 2024 a site inspection was undertaken pre demolition works in June 2024 and followed by a further inspection on 20th June 2024 following demolition of the existing buildings, with the ground and formation under which the former dwelling and hard standings once stood inspected

4.5 As a result of these inspections No abnormalities or unusual features were noted in the area, where the former building and the old foundations and slabs had been broken out, site, cleared and rubble /building material taken away, with the ground now relatively level exposed at a level some 150-300mm below former dwelling level.

4.6 The ground and formation present on inspection in 2024 were seen to be very similar to the surrounding ground [as recorded in 2021] being a thin generally granular hardcore layer of inert crushed brick/concrete remnants[as result of demolition process]mixed with natural gravels and stones and subsoils over the natural clays and silty clays on the plot area , with the glacial drift/clays becoming firm with depth. No water was detected in the shallow trial pits

4.7 Soil samples were then taken and tested for a range of determinants as required in the planning condition No 1 wording and material also screened for possible asbestos fibers

4.8 The results generally confirmed that pollutant levels were low and below threshold criteria bit slightly elevated levels of arsenic were noted and in one sample some low-grade white asbestos fibers were found [but within general tolerance /acceptance levels]

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SITE REMEDIATION OPTIONS APPRAISAL AND STRATEGY

4.9 A supplementary report was then prepared and submitted with application to discharge condition no 1

4.10 Following consideration of the above report by the LPA a response was received from the Environmental health dept. noting that as arsenic levels in three [50%] of the total number of samples tested were above generic acceptance criteria levels and that further review was needed and a remediation strategy needed to be drawn up to mitigate against this risk

89 WENALLT RD –SI REPORT

5.0 Remediation Objective and Criteria

5.1 General Remediation Objectives

- 5.1.1** The Remediation criteria to be set is to mitigate against risk to construction workers and end users from the pollutant risk identified, whilst allowing the building of eth proposed new dwelling and external areas to progress to completion, and then mitigate against any long-term risk during lifespan of domestic development.
From a review of previous reports and with particular refence to section 4.0 of the 2024 SI report the conceptual model has been revisited, the conclusions summarized below, and where needed remediation objectives set and options appraised as follows,

5.2 Review and Update of Conceptual Exposure Model

Following appraisal of the results of the 2024 testing the site initial Conceptual Exposure Model as given in the Integral Geotechnique report and updated in the 2024 report have been reviewed as follows,

5.2.1 Material Source – Topsoil/made ground

The Model results of 2021 and 2024 remain valid – The slightly elevated arsenic levels recorded in 2024 were similar to the 2021 report levels but 3 number of the test results [50%] of the testing program are above the generic acceptance criteria
Following liaison with NOPT environmental health dept. it is concluded there is a need to develop a remediation strategy to mitigate for this

5.2.2 Material Source – Building material /fabric

The former dwelling has been demolished and the material and building rubble generally taken off site .and residual risk thus taken away/removed. In TP/1 very small amount of white asbestos fibers were noted [0.001%, [probably a residual amount following local removal of the kitchen floor tiles] , Whilst minimal and not above normal screening criteria it is recommended that the 2021 Report risk assessment and method of working for foundations needs to be revised slightly in this instance , with this area of site carefully inspected at onset of groundworks and if suspect material if found material carefully taken up in accordance with good practice, double bagged and taken to a suitable tip , with close inspection maintained during foundation excavation operations and casting of new foundations and ground slabs over a suitable dpc /dpm membrane .

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5.3 Outline of Remediation Objectives

5.3.1 General

5.1 From the review undertaken it is again concluded that pollutant levels are generally low and the initial risk assessments remain valid, but the following specific potential pollutants need to be assessed and appraised so as to mitigate against any pollutant linkages,

A) Radon gas [risk/receptor – future site users]

B) Arsenic levels in sub soil and subsoils on the site [risk/receptor construction workers/ future site users]

C) Asbestos fibres in demolished material /soils under former building area [risk/receptor - construction workers]

5.4 Remediation Options Appraisal

5.4.1 For the above specific remediation option appraisals have been undertaken as follows,

5.4.2 Radon – For mitigation and protection against naturally occurring radon gas the standard normal option of providing basic radon protection with a suitable radon barrier membrane and associated details as per building regulations standard details is the optimum option here.

5.4.3 Arsenic – With due regard to the slightly elevated ambient levels found two options can be considered,

A) Further sampling and testing of the soils and arsenic material present to establish bio accessibility of the material present and then further review.

B) provision of mitigation on site by means of a capillary break layer, an appropriate geomembrane, under an introduced/imported 450mm layer of clean soils -as detail appendix A

Following due consideration and with due regards to the site proposal plans where it is noted that there are no proposed garden cultivation areas, it is considered option B – clean cover is the most suitable option here,

PROPOSED NEW DWELLING WENALLT

5.4.4. Asbestos fibres Whilst only v low levels locally in one area were found remediation options are considered and the following options considered.

- A) Groundworks to wear suitable PPE and works to be closely inspected during groundwork and excavation and any suspect materials removed off site to suitable tip.
- B) removal of subgrade in the area and introduction of clean cover above

With regards to these options the conclusion is reached that both options have merit and can be introduced in sequence , with the close inspection /protective clothing regime for foundation construction and eth clean cover over a suitable membrane used for permanent works – as the option appraisal for arsenic also gives a clean cover and geomembranes solution its introduction will serve as mitigation and break of pollutant linkages against both arsenic and residual asbestos fibres

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SUPPLEMENTARY SITE INVESTIGATION REPORT SEPTEMBER 2024

6.0 Remediation Strategy and implementation s

6.1 General

Following the remediation options appraisal the following integrated remediation strategy is proposed for the development,

6.1.1 New Building set out on site and subgrade inspected for presence of any residual asbestos type of fibre material or shards of former floor tiles. If any such material found it is double bagged and removed off site to suitable tip in accordance with standard procedures for dealing with white type asbestos

6.1.2 Contractor for works to be made aware of risk and ensure use of introduce suitable risk and method statements and use of protective personal equipment [PPE]

6.1.3 Foundations excavated, with care taken to inspect regularly and remove any suspect material [however unlikely] and then cast.

6.1.4 Subgrade under new build slab prepared and suitable radon barrier DPM and basic radon protection measures introduced and inspected /approved by building control prior to casting slab – details of radon barrier to be submitted to building control in advance.

6.1.5 With regards to external works the ground reprofiled reduced where need be and material taken off site so as to allow introduction of a capillary break layer ,a suitable "Alert "geomembrane and then 450mm clean tested imported material /soil as per the design drawings given in appendix A of this report , with the works then verified as per the proposed verification plan given in section 7.0

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7.0 Verification Plan

- 7.1** To ensure compliance with the remediation strategy and to ensure long term compliance the following verification plan is proposed.
- 7.1.1** Close inspection of all excavations and groundworks and pipe works and services provision maintained, and any suspect material taken off site.
- 7.1.2** Clean fill/soil material to be checked and tested and verified prior to use on site.
- 7.1.3** Siet levels checked after ground profiling to ensure that 450mm clean cover can be provided on site.
- 7.1.4** Following introduction of clean topsoil random trail excavations and tests undertaken on site to ensure depth of 450mm clean cover was obtained and material remains clean and there was no cross contamination during its introduction.

APPENDIX A



PRODUCT DATA SHEET

Geosynthetics Limited Tel 01455 617 139 Fax 01455 617 140 Email sales@geosyn.co.uk

Alert™

Alert™ Woven Polypropylene Geotextile and Contamination Indicator

Alert™ was developed by Geosynthetics Limited to provide a cost effective and practical way to indicate the break between potentially contaminated ground and imported or site won clean fill. The large roll size combined with industrial leading technical specifications and strength have lead to the vivid orange Alert™ woven geotextile being the product of choice in the UK.



PROPERTY	TEST METHOD	Value
Colour		Orange
Tensile strength - warp	BS EN ISO 10319	18 kN/m
Tensile strength - weft	BS EN ISO 10319	12 kN/m
Elongation at break - warp	BS EN ISO 10319	28 %
Elongation at break - weft	BS EN ISO 10319	16 %
CBR puncture resistance	BS EN ISO 102236	1840 N
Water flow normal to the plane	BS 6906 Part 3	32 l/m ² /sec
Pore size 90% finer than	BS 6906 Part 2	230 microns
Effects of UV light	The polypropylene used contains a UV inhibitor	
Fabric thickness under 2 kN/m ²		0.39 mm
Standard roll width		4.5 m
Standard roll length		100 m
Applications		Brownfield sites Developed land Warning indicator
CE Reference		0338-CPR-5058

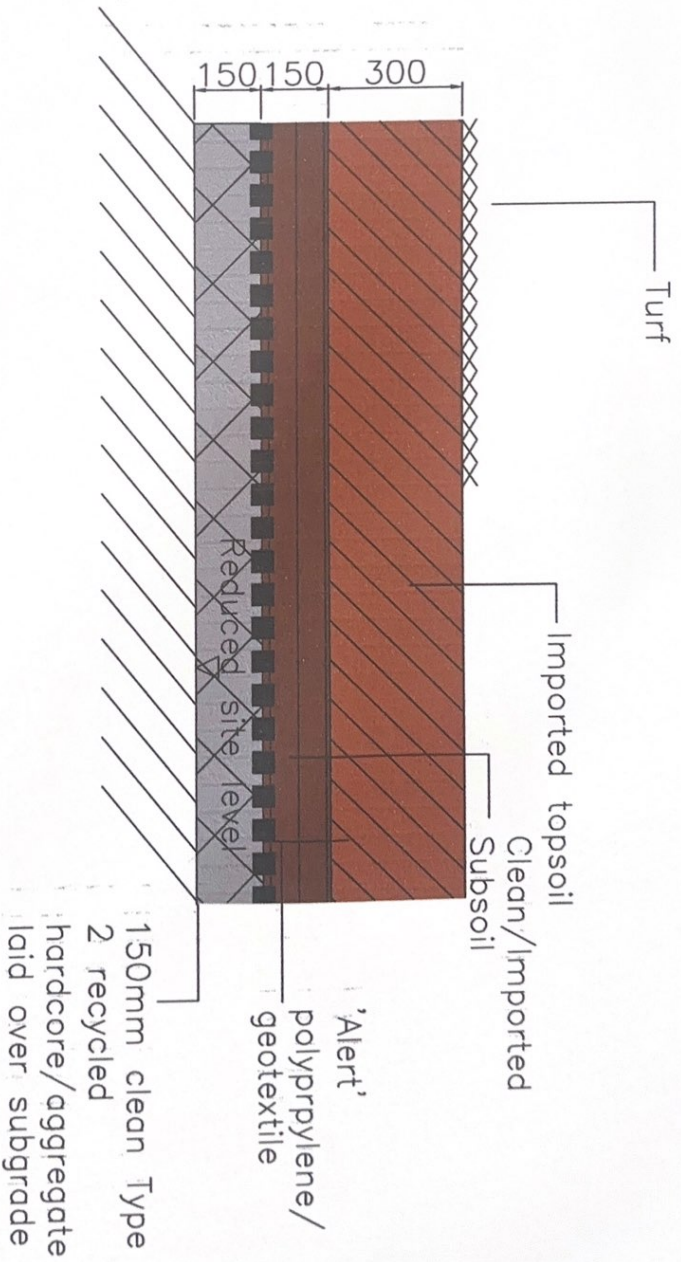
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DR: 04/11/22/08/2022

Open Microsoft 365 (Office)



NOTES



Mr And Mrs Rees Proposed New Dwelling AT 89 Wencott Road Proposed Garden Areas Section-2		DATE: 10/7/24 SCALE: 1:10 DRAWN: AJ	CHECKED: E.P.H. APPROVED:
Beta Consult 42 Queen Street Birmingham B1 3EJ Tel: 0121 609 8427 Fax: 0121 609 8428 E-mail: info@betaconsult.co.uk			
24/03/24	102	102	

The diagram illustrates a cross-section of a landfill cell with the following layers and dimensions:

- Turf**: Indicated by a cross-hatched pattern on the left side.
- Imported topsoil**: A layer with diagonal hatching, with a dimension of 300.
- Clean/Imported Subsoil**: A layer with diagonal hatching, with a dimension of 150.
- 'Alert' polypropylene/geotextile**: A thin layer with a dashed pattern, with a dimension of 150.
- Reduced site level**: A layer with a dashed pattern, with a dimension of 150.
- 150mm clean Type 2 recycled hardcore/aggregate laid over subgrade**: A layer with diagonal hatching, with a dimension of 150.

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