Our Ref: lt.2401021.002.02
Your Ref: -

11 February 2025

The Old Chapel
35a Southover
Wells
Somerset
BA5 1UH

t: 01749 677760
w: www.tecon.co.uk

London Borough of Hillingdon Council
c/o B & X Construction Ltd

By email only

Dear Anne,

ENDEAVOUR SEA SCOUTS GROUP, COWLEY

TEC have been instructed by B & X Construction Ltd on behalf of London Borough of Hillingdon Council to detail the remediation works undertaken at the abovementioned site. The report below was undertaken in general accordance with our proposal email dated 29 January 2024 and subsequent telecommunications and emails.

Background

The site is located off Moorfield Road, Cowley (Figure 1). The site is approximately 0.05 hectares in size, with the centre of the site located at approximate National Grid Reference 505800, 181300. The nearest postcode to the site is UB8 3SJ.

The proposed development is understood to comprise the demolition of the existing scout hut and construction of a new scout hut with areas of soft landscaping and hard infrastructure (Figure 2).

It is understood that planning permission has been granted by London Borough of Hillingdon Council (ref: 77079/APP/2022/534) for the development, and that Condition 5 related to the requirement for a Remediation Strategy and subsequent and Verification Report have also been applied.

A desk study and ground investigation and subsequent geotechnical investigation has previously been undertaken by TEC for the site, as detailed within the following reports:

- *Endeavour Sea Scout Group, Cowley – Desk Study and Ground Investigation Report. Prepared for London Borough of Hillingdon Council. Report reference 2105014.001.01, dated July 2021; and*
- *Endeavour Sea Scout Group, Cowley – Geotechnical Assessment Addendum Report. Prepared for London Borough of Hillingdon Council. Report reference 2105014.002.01A, dated September 2021.*

Following these works, a subsequent Remediation Strategy was prepared for the site by TEC, as documented within the following report:

- *Endeavour Sea Scout Group, Cowley –Remediation Strategy and Verification Plan. Prepared for Prepared for London Borough of Hillingdon Council. Report reference 2401021.001.01, dated February 2024.*

It is understood that these reports have been submitted and subsequently approved by London Borough Hillingdon Council in relation to the planning permission for the proposed development. Full reference should be made to all of the previous reporting and assessment, although a summary of the salient information in relation remedial requirements at the site is provided in the following section.

Previous Reports Summary

Site History and Contamination Summary

Earliest available mapping indicates the site remained undeveloped prior to 1934. From this date, a filter bed associated with the nearby Uxbridge & Yiewsley Joint Drainage Committee sewage works is depicted on site until 1948. From 1963, the sewage

works infrastructure is no longer present and the site is noted to be part of a 'playground' and from 1972, the site comprises a "hall" (former scout hut).

The multiple phases of ground investigation works recorded made ground across the site (to depths of at least 1.0mbgl) recorded to a maximum depth of >1.6mbgl. This was locally observed to be underlain by the silty clays, sands and gravels of the Langley Silt Member to a maximum observed depth of 1.9mbgl. No groundwater or perched water was encountered at the site during the TEC ground investigations.

No visual or olfactory evidence of gross contamination was observed during the ground investigation. Laboratory analysis of representative made ground materials recorded exceedances of the GAC for heavy metals (lead (WS03 and WS06) and beryllium (WS03) and PAH compounds when considering a residential site end use.

An asbestos screen completed on samples of the made ground at the laboratory recorded no suspected asbestos containing material or detectable asbestos fibres.

No potential sources of ground gas were identified within proximity of the site. In addition, the site is reported to be located within a Lower Probability Radon Area where no protection measures are required.

The updated conceptual model presented within the Remediation Strategy and Verification Plan report identified the following relevant contaminant linkages (RCL) at the site, in relation to the proposed development.

- ***RCL1*** Risk to site end users via exposure to Contaminants of Potential Concern (CoPC) within the made ground materials through ingestion, inhalation and dermal contact pathways in areas of proposed soft landscaping, where made ground remains;
- ***RCL2*** Cumulative risk to brownfield construction workers and future site maintenance via exposure to Contaminants of Potential Concern (CoPC) within the made ground materials through the ingestion, inhalation and dermal contact pathways; and
- ***RCL3*** Potential risk of statutory nuisance via disturbance of in-situ ground materials during development works resulting in the generation of dust, including fine particulate matter.

Remediation Requirements

In relation to ***RCL1***, a summary of the scope of remediation required, as documented within TEC's approved Remediation Strategy and Verification Plan report is as follows:

Hard Standing and Building Footprint

- The proposed development plan indicates a large portion of the site area is to be covered by the footprint of the proposed development buildings or hardstanding. Where present, such hard cover features would remove the identified potential contaminant pathways in relation to site end users.

Soft Landscaped Areas

- Based upon the proposed development layout, areas of soft landscaping will be present onsite. Therefore, where made ground remains within these proposed soft landscaped/garden areas, exposure to identified CoPCs cannot be discounted based upon the current assessment. In order to mitigate against the potential risk to site end users, it is recommended that a cover system be provided within such areas, where made ground remains.
- Based on the concentrations of contaminants recorded within the made ground materials on site, a simple cover system in accordance with Building Research Establishment (BRE) guidance (BRE 465) titled "*Cover Systems for Land Regeneration – Thickness of Cover Systems for Contaminated Land*" may be appropriate in the proposed soft landscaped areas to mitigate against the potential risk to site end users. Further, based upon site specific data and BRE465 calculations, to ensure contaminant levels remain below relevant screening values, a minimum depth of 460mm of clean cover should be provided within proposed soft landscaped areas (Figure 2), where made ground remains.

Remediation Works

A verification report has previously been submitted to London Borough of Hillingdon Council ref. lt.2401021.002.01 dated 08 November 2024. Further to submission of this report, feedback has been received from the Council's Environmental Health Officer as follows:

'Having considered the Applicant's previously submitted supportive information, i.e. Remediation Strategy and Verification Plan with reference 2401021.001.01 prepared by TEC Ltd dated February 2024, taking note of sections 4 (Scope of remediation works), 5 (General requirements) and 6 (Verification Plan), as well as the soil sale invoices dated October 2024 and Topsoil

Analysis Report dated 8th March 2024 prepared by Tim O'Hare Associates Ltd, we would only be able to recommend the partial discharge of Condition 5 of the approved planning permission 77078/APP/2022/533 concerning ONLY Condition 5b(i).

We would not be able to recommend Condition 5a for discharge/approval as the relevant remedial work has not been carried out, whilst Condition 5b (ii-iv) can also only be discharged when all the required work has been carried out, and the relevant report submitted and satisfactory.

Whilst the soil sale invoices dated October 2024 and Topsoil Analysis Report dated 8th March 2024 prepared by Tim O'Hare Associates Ltd are noted, the dates on these documents cannot be reconciled as the soil analysis cannot be done in March 2024 for a soil purchase dated October 2024.

In addition, we need copies of waste transfer notes for all the soil removed from the site and photographic evidence of soil removed and imported to replace this on the site with its thickness.'

In response to this feedback, additional remediation works have been undertaken, and the TEC verification report has been updated. In summary, the Verification Report dated 8th November confirmed that external areas on site had been installed with block paving (hardstanding), with the soft landscaped areas on site covered with a geotextile marker membrane overlain with clean imported topsoil supplied by Rolawn (Hallstone Blended Loam Topsoil) through Selco Building Supplies in 0.5m^3 bags which were delivered directly to the site, supported by invoices dated 25th, 28th and 29th October 2024. Within Appendix C to the report, a topsoil analysis certificate from Tim O'Hare Associates LLP has been provided for analysis of this material dated 1st October 2024, which is directly relevant to the material imported to the site at the end of October. Therefore, the March topsoil analysis queried by London Borough of Hillingdon has been superseded by the October certificate which has been included within our original verification report.

It will not be possible to provide waste transfer notes for all soil removed from site, or photographic evidence of soil removed from site, due to the fact that soil has not been removed from the site. The purpose of the provision of a remedial capping solution is to break the identified contaminant linkage by creating a physical barrier between the proposed end user of the site (scouts) and the underlying contamination. The approved Remediation Strategy confirms that RCL1 (chronic risk to site end users via exposure to identified contaminants of potential concern within the made ground materials through dermal contact, ingestion and inhalation pathways) will be addressed by the provision of a combination of hardstanding and a simple cover system to areas of soft landscaping.

TEC can confirm that during the course of construction at the site, it was not possible to install the recommended 460mm depth simple cover system within the limited areas of communal soft landscaping. Therefore a layer of clean imported topsoil has been provided across areas of soft landscaping, placed directly over the existing soils, as detailed within TECs November 2024 Verification letter. The reason that 460mm clean cover system could not be installed, is due to the presence of numerous existing trees present at the site, both around the site boundaries, and within some pf the proposed soft landscaped areas. These trees have extensive root protection zones identified within the Arboricultural Method Statement ref. TH 3066 dated 17th September 2021 prepared by Trevor Heaps Arboricultural Consultancy Ltd. These root protection zones extend across the proposed areas of communal soft landscaping. The extent of the trees in relation to the proposed soft landscaping is shown on Figure 2, and the root protection zones are shown on Drawing Ref. Tree Protection Plan No. TH/A3/3066/TPP prepared by Trevor Heaps Consultancy Ltd also attached to this letter.

Although a 460mm depth of clean cover system is not viable for the limited areas of communal soft landscaping at the site (turfed areas and minimal planted borders), an alternative cover system is proposed given the on site restrictions. As noted within NCLOGs *'A regulator's Guide to Cover Systems and their Verification'* 2024, where existing (or proposed) root systems are present, it is not possible to construct a substantial soil cover system over larger portions of the root system, as this will compress the ground, starve the roots of oxygen, suppress growth, and ultimately lead to the death of the tree.

Therefore, it has been recommended that an alternative capping solution is adopted, which will prevent exposure to any underlying potentially contaminated soils by preventing end users from digging into the soil within proposed communal soft landscaping at the site and will also be suitably protective of the existing trees. As the soft landscaping at the site is a managed communal area, exposure to soils within the root protection zones (and across all soft landscaped areas can be prevented by the provision of a geogrid system (in this case Tensar SS20), infilled and overlain with a nominal thickness of clean free draining topsoil as a top dressing. The Tensar technical note for the selected SS20 geogrid has been included as Appendix D.

Although TEC have been unable to visit the site, based upon correspondence and photographs from B & X Construction Ltd, it is understood that the proposed development is near completion. It is further understood that areas of proposed soft landscaping and hardstanding cover (outwith the building footprint) have now been completed (see Appendix A – B & X Construction Ltd supplied photographs). The photographs provided to TEC by B & X Construction Ltd show areas of soft landscaping, as well as areas of block paving (hardstanding). It should be noted that Photographs 1. to 10. show the works undertaken in 2024 to install a geotextile marker membrane and imported topsoil over the existing soils at the site, whilst photographs 11 to 16 show the recent works undertaken to install the Tensar SS20 geotextile over the completed soft

landscaped areas, which has then been 'top dressed' with an additional layer of Rolawn 'Hallstone Blend' topsoil supplied by Selco Building supplies.

It is understood that topsoil was ordered to be delivered to site for use within soft landscaped areas of the proposed development. All information below with regards to the delivery and placement of imported soil has been provided to TEC by B & X Construction Ltd.

Information provided by B & X Construction Ltd (Appendix B) indicates that ~3m^3 of topsoil (Hallstone Blended Loam Topsoil) was ordered for delivery to the Moorfield Road site on 25 October 2024, with a further ~3m^3 of the same material ordered to Moorfield Road on 28 and again on 29 October 2024 (total 9m^3). Further to this, following placement of the geogrid system, an additional ~ 6m^3 of the same material in total has been delivered to site on 01 and 04 February 2025. It is noted that no delivery tickets have been provided to TEC, although topsoil has been delivered as bulk bags direct from the supplier at Selco Builders Warehouse, with relevant invoices and receipts for payment included within Appendix B.

Further information provided by B & X Construction Ltd indicates the material (referenced Hallstone Blended Loam 01/10) has been analysed by Tim O'Hare Associates, as detailed within Report No. TOHA/24/1592/SS, dated 4th November 2024, sampled on 1st October 2024 (Appendix C). This certificate also remains valid for the topsoil imported during February 2025 as confirmed by the supplier and as this certificate is less than 6 months old. Review of this report indicates the material comprises very dark greyish brown, slightly moist, friable, slightly calcareous loamy sand with a weakly developed, very fine to fine granular structure. The sample was further reported to be slightly stony and containing a high proportion of organic fines and frequent woody fragments. No unusual odours, deleterious materials, roots or rhizomes or pernicious weeds were observed by Tim O'Hare Associates during analysis.

The Tim O'Hare Associates report further indicates that material tested was fully compliant with the requirements of the British Standards for Topsoil (BS3882:2015 – Specification for Topsoil: Table 1, Multipurpose Topsoil). However, the report documents that "*the report and results should not be used by third parties as a means of verification or validation testing or waste designation purposes, especially after the topsoil has left the Hallstone Developments Ltd site*".

TEC note that the concentration of contaminants reported for this sample all fall below the GAC's outlined within the approved Remediation Strategy and Verification Plan.

It is noted that email correspondence from B & X Construction Ltd acknowledges the requirement for 460mm of clean cover within the soft landscaped areas but also acknowledges that *we did not disturb the ground and only filled it with soil to the best we can however, due to the trees and roots around, the depth has not been consistent.* Further to this statement, a geogrid system has been installed across all areas of soft landscaping at the site (due to root protection zones present) as an additional layer of protection, and this has been topped with a nominal thickness of clean imported topsoil as a dressing. Photographs showing the installed capping system placed within soft landscaped areas have been provided to TEC and are included within Appendix A.

Closure

Should you have queries regarding this report, please do not hesitate to contact us.

Yours sincerely

Prepared by:

Ruth Easterbrook
Technical Director

Authorised by:

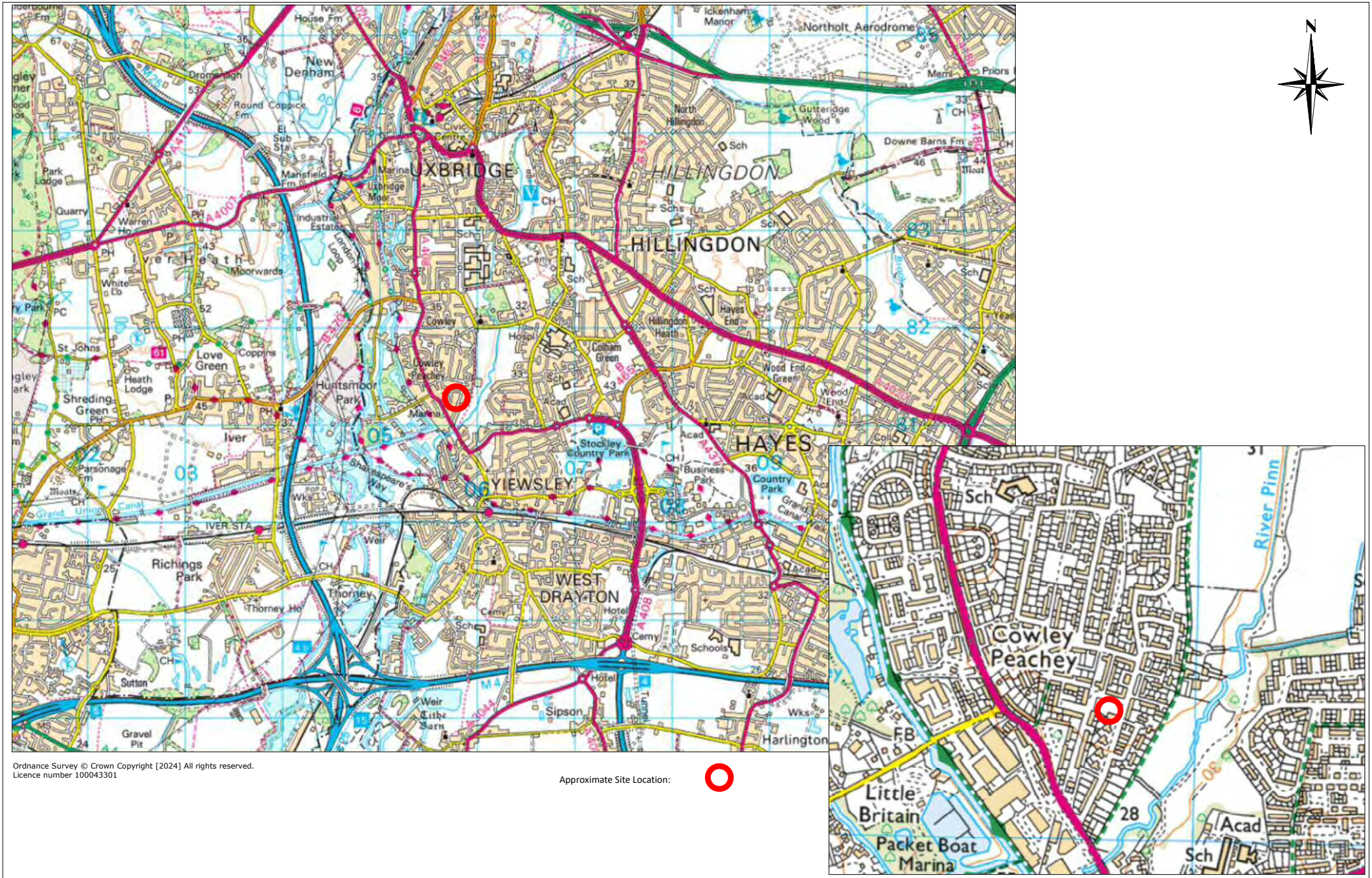
Claire Hooley
Director

For and on behalf of
TEC

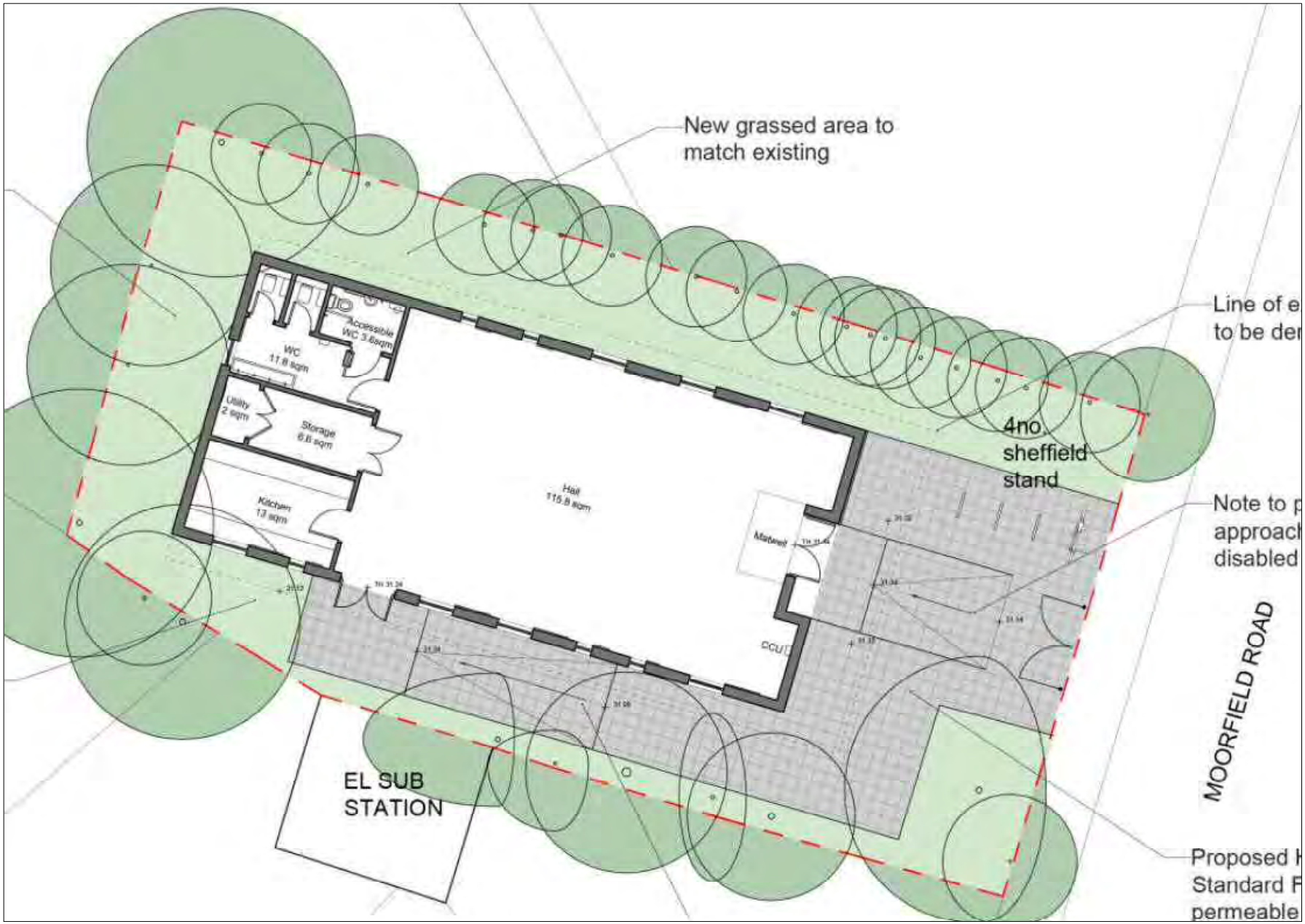
Enclosed:

Figure 1 – Site Location Plan
Figure 2 – Proposed Development Plan
Tree Protection Plan: Ref. TH/A3/3066/TPP dated 17/09/2021 – Trevor Heaps Arboricultural Consultancy Ltd
Appendix A – Site Photographs supplied by B & X Construction Ltd
Appendix B – Invoices from Selco Builders Warehouse and sales confirmation supplied by B & X Construction Ltd
Appendix C – Topsoil Analysis Report supplied by B & X Construction Ltd
Appendix D – Tensar Technical Note SS20 geogrid including delivery note

Figures



tec	TEC The Old Chapel 35a Southover Wells, Somerset BA5 1UH	Tel: 01749 677760 Email: info@tecon.co.uk Web: www.tecon.co.uk	Site Name: Endeavour Sea Scout Group, Cowley	Drawing Name: Site Location Plan	Client Name: London Borough of Hillingdon Council	Project No: 2401021.001	Figure No: 1	Date: February 2024	Scale: NTS

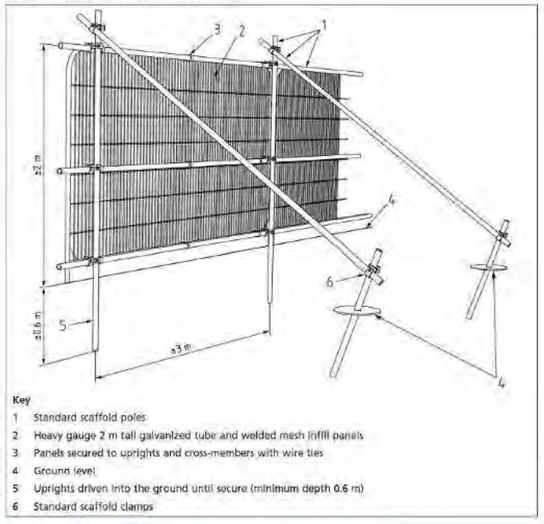


Extract of Inter Urban Studios 'Endeavour Sea Scout Group - Proposed Site Plan'. Dwg No.: PL-03 A, 29.03.22.

tec	TEC The Old Chapel 35a Southover Wells, Somerset BA5 1UH	Tel: 01749 677760 Email: info@tecon.co.uk Web: www.tecon.co.uk	Site Name: Endeavour Sea Scout Group, Cowley	Drawing Name: Proposed Development Plan	Client Name: London Borough of Hillingdon Council	Project No: 2401021.001	Figure No: 2	Date: February 2024	Scale: NTS

Appendix 9: Tree Protection Plan

Default specification for protective fencing



Key
1 Standard scaffold poles
2 Heavy gauge 2 m tall galvanized tube and welded mesh infill panels
3 Panels secured to uprights and cross-members with wire ties
4 Ground level
5 Uprights driven into the ground until secure (minimum depth 0.6 m)
6 Standard scaffold clamps

At this site, operations are to occur in the following sequence:

1. Carry out tree work operations highlighted yellow in the tree data schedule (Appendix 2). All tree works are to be carried out by a competent and experienced arborist to current British Standards (see Appendix 5.9 for assistance finding a suitable arborist).

2. Erect protective fencing along the position(s) shown by the dashed red line/s on the TPP.

3. Lay ground protection and/or retain suitably hard-wearing existing hard surfaces within the area(s) shown by the diagonal blue lines on the TPP.

4. Provide a photographic record of all tree protection to arboricultural consultant - this will be forwarded to and approved by the Council's Arboricultural Officer and must demonstrate that all aspects of tree and ground protection measures have been implemented in accordance with this Arboricultural Report. The tree protection measures shall be retained until completion of all works hereby permitted.

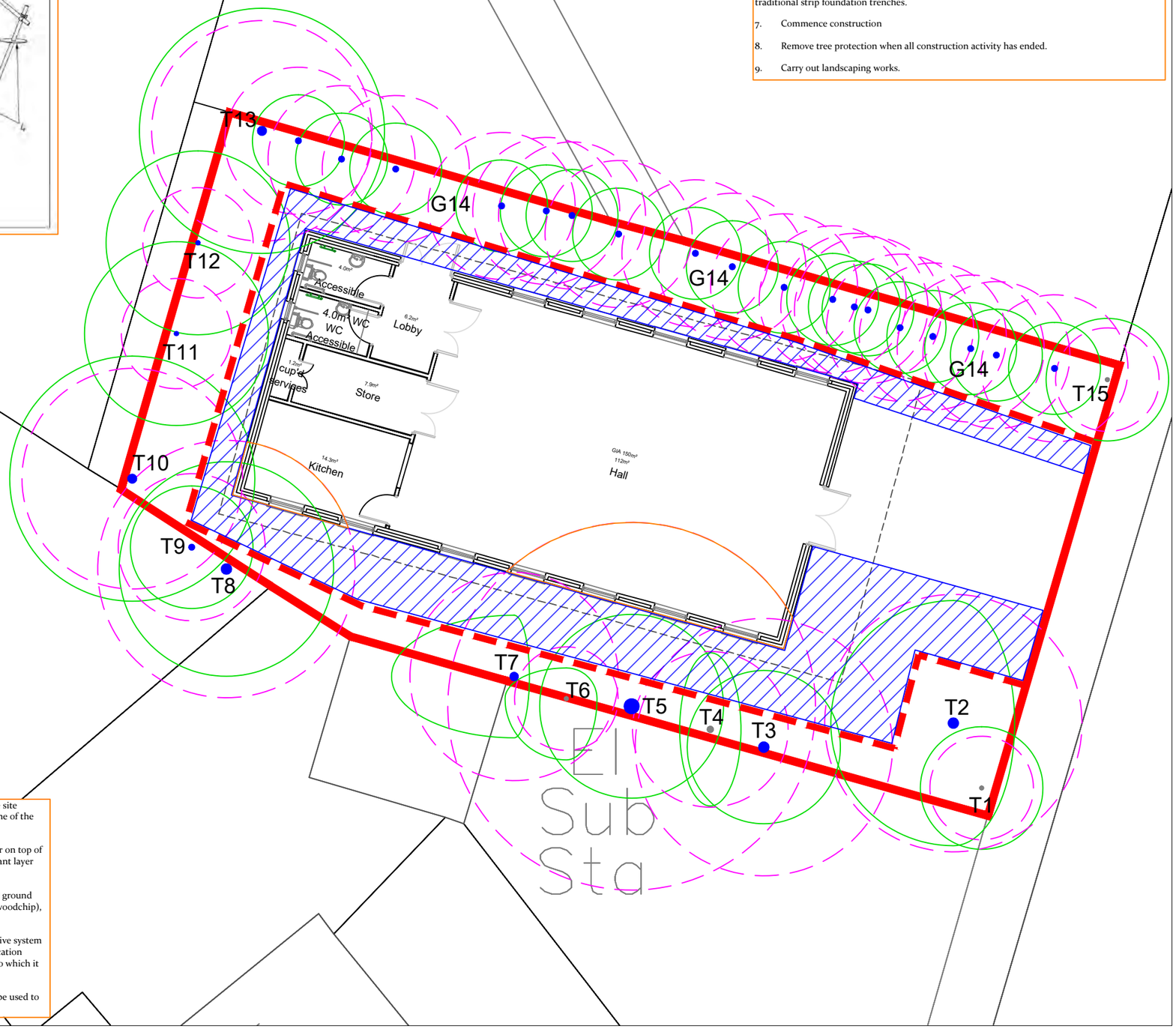
5. Demolish existing building, leaving any suitable hard surfaces in situ (as ground protection).

6. Working from on top of existing hard surfaces and/or suitable ground protection, excavate traditional strip foundation trenches.

7. Commence construction

8. Remove tree protection when all construction activity has ended.

9. Carry out landscaping works.



Temporary ground protection should be able to support any traffic entering or using the site without being distorted or causing compaction of underlying soil and might comprise one of the following:

1. For pedestrian-movements only, a single thickness of scaffold boards placed either on top of a driven scaffold frame, to form a suspended walkway, or on top of a compression-resistant layer (e.g. 100 mm depth of woodchip), laid onto a geotextile membrane;

2. For pedestrian-operated plant up to a gross weight of 2 t, proprietary, inter-linked ground protection boards placed on top of a compression-resistant layer (e.g. 150 mm depth of woodchip), laid onto a geotextile membrane;

3. For wheeled or tracked construction traffic exceeding 2 t gross weight, an alternative system (e.g. proprietary systems or pre-cast reinforced concrete slabs) to an engineering specification designed in conjunction with arboricultural advice, to accommodate the likely loading to which it will be subjected.

NOTE: If ground protection is to be laid near areas to be excavated, sheet piling should be used to shore up the sides of the excavations prior to being used (by pedestrians or machinery)

Plan Legend

- Tree/s to be retained
- Tree/s to be removed
- Centre colours
- Category A Tree
- Category B Tree
- Category C Tree
- Category U Tree
- Root Protection Area (RPA) If amended, the original is a dotted blue circle
- RPA Incursion. Extra care to be taken during excavations (see supporting report)
- Protective fencing
- CEZ — Construction & storage exclusion zone
- Ground protection or existing hard surface to remain

Scale: 1:150 @ A3 (0 – 3m – 6m)

Site Address: Endeavour Sea Scout Gp
Moorfield Road, Cowley, UB8 3SJ

Client: L B Hillingdon
Drawing No: TH/A3/3066/TPP

Job Ref: TH 3066 | Date: 17/09/2021

Trevor Heaps
Aboricultural Consultancy Ltd

07957 763 533
trevor@trevorheaps.co.uk
www.trevorheaps.co.uk

End of Report

Appendix A

Site Photographs supplied by B & X Construction Ltd

Photograph 1: B & X Construction Ltd Supplied Photograph – Soft Landscaped Area and Block Paving, photograph supplied to TEC on 04.11.2024.

Photograph 2: B & X Construction Ltd Supplied Photograph – Soft Landscaped Area, photograph supplied to TEC on 04.11.2024.

Photograph 3: B & X Construction Ltd Supplied Photograph – Block Paving and membrane covering soft landscaped area, photograph supplied to TEC on 04.11.2024.

Photograph 4: B & X Construction Ltd Supplied Photograph – Soft Landscaped Area and Block Paving, photograph supplied to TEC on 04.11.2024.

Photograph 5: B & X Construction Ltd Supplied Photograph – Soft Landscaped Area and Block Paving, photograph supplied to TEC on 04.11.2024.

Photograph 6: B & X Construction Ltd Supplied Photograph – Soft Landscaped Area and Block Paving, photograph supplied to TEC on 04.11.2024.

Photograph 7: B & X Construction Ltd Supplied Photograph – validation pit, photograph supplied to TEC on 07.11.2024.

Photograph 8: B & X Construction Ltd Supplied Photograph – validation pit, photograph supplied to TEC on 07.11.2024.

Photograph 9: B & X Construction Ltd Supplied Photograph – validation pit, photograph supplied to TEC on 07.11.2024.

Photograph 10: B & X Construction Ltd Supplied Photograph – validation pit, photograph supplied to TEC on 07.11.2024.

Photograph 11: B & X Construction Ltd Supplied Photograph – Tensar SS20 placement to side of building, photograph taken on 01.02.2025.

Photograph 12: B & X Construction Ltd Supplied Photograph – Topsoil finishing to side of building, photograph taken on 04.02.2025.

Photograph 13: B & X Construction Ltd Supplied Photograph – Tensar SS20 covering soft landscaped area to front of building, photograph taken on 01.02.2025.

Photograph 14: B & X Construction Ltd Supplied Photograph – Topsoil finishing to Soft Landscaped Area at front of the building and Block Paving, photograph taken on 04.02.2025.

Photograph 15: B & X Construction Ltd Supplied Photograph – Tensar SS20 placement to Soft Landscaped Area to side of the building and Block Paving, photograph taken on 01.02.2024.

Photograph 16: B & X Construction Ltd Supplied Photograph – Soft Landscaped Area and Block Paving to rear of the building following topsoil dressing, photograph taken on 04.02.2024.

Appendix B

Invoices from Selco Builders Warehouse supplied by B & X Construction Ltd

DOCUMENT TYPE	INVOICE
DOCUMENT DATE	25 October 2024
DOCUMENT NO.	SIN0622405063
SALES ORDER NO.	12SO1207409962

QUERIES TO:

Selco Hayes
Unit 3, Millington Road
Hayes
hayes UB3 4AZ
Tel: 0208 848 6850
hayessales@selcobw.com

BRANCH OPENING HOURS

06:30 - 18:00	Mon-Fri
07:00 - 16:00	Saturday
10:00 - 16:00	Sunday

CUSTOMER DETAILS

B&X Construction Ltd
Unit 17, Alliance Court
Alliance Road
LONDON
W3 0RB

DELIVERY DETAILS

Zeesham
46 Moorfield Road
Uxbridge
UB8 3SJ

ACCOUNT NO.	CUSTOMER ORDER NO.	DELIVERY DATE		TEL. NO.	STAFF ID
351837	1	25 October 2024		02039055551	101901

PRODUCT CODE	DESCRIPTION	QUANTITY	PRICE	UNIT	VALUE	SALES TYPE	CODE
151772012	HALLSTONE BLENDED LOAM TOPSOIL BULK BAG APPROX. 0.5m3	6	50.00	EACH	300.00	DELIVERY	STD
DELIVERY	Delivery Charge	1	0.00	EACH	0.00	DELIVERY	STD

Cash	Cheque	Card	P.I.A/BACS	Voucher	Account
0.00	0.00	0.00	0.00	0.00	360.00

CODE	RATE	GOODS	VALUE
STD	20%	300.00	60.00

TOTAL NET GOODS	300.00
TOTAL VAT	60.00
TOTAL	360.00

To pay your credit account, please send via bank payment to:

Account Name: Selco Trade Centres Ltd Sales
Sort Code: 40-05-20 Account Number: 71762796

Quoting your Customer Account Number - 351837

SIGNATURE:

WORKERS NAME:

DOCUMENT TYPE	ORDER ACK.
DOCUMENT DATE	28 October 2024
DOCUMENT NO.	0000001206000023132

QUERIES TO:

Selco Hanger Lane
West Gate
Hanger Lane
London W5 1UL
Tel: 0208 998 9890
hangerlane.sales@selcobw.com

BRANCH OPENING HOURS

06:30 - 18:00	Mon-Fri
07:00 - 16:00	Saturday
10:00 - 16:00	Sunday

CUSTOMER DETAILS

B&X Construction Ltd
Unit 17, Alliance Court
Alliance Road
LONDON
W3 0RB

DELIVERY DETAILS

Zeesham
46 Moorfield Road
Uxbridge
UB8 3SJ

ACCOUNT NO.	CUSTOMER ORDER NO.	DELIVERY DATE	DELIVERY SLOT	DELIVERY TEL. NO.	STAFF ID
351837	UB8 3SJ	29 October 2024		07554750019	101901

PRODUCT CODE	DESCRIPTION	QUANTITY	PRICE	UNIT	VALUE	SALES TYPE	CODE
151772012	HALLSTONE BLENDED LOAM TOPSOIL BULK BAG APPROX. 0.5m3	6	50.00	EACH	300.00	DELIVERY	
DELIVERY	Delivery Charge	1	0.00	EACH	0.00	DELIVERY	

Cash	Cheque	Card	P.I.A/BACS	Voucher	Account
0.00	0.00	0.00	0.00	0.00	360.00

TOTAL NET GOODS	300.00
TOTAL VAT	60.00
TOTAL	360.00

DELIVERY COMMENTS:

call 1 hour before delivery

DELIVERY ACCESS:

no parking problems

SIGNATURE:

WORKERS NAME:

DOCUMENT TYPE	INVOICE
DOCUMENT DATE	29 October 2024
DOCUMENT NO.	SIN0622405109
SALES ORDER NO.	12SO1206583138

QUERIES TO:

Selco Hayes
Unit 3, Millington Road
Hayes
hayes UB3 4AZ
Tel: 0208 848 6850
hayessales@selcobw.com

BRANCH OPENING HOURS

06:30 - 18:00	Mon-Fri
07:00 - 16:00	Saturday
10:00 - 16:00	Sunday

CUSTOMER DETAILS

B&X Construction Ltd
Unit 17, Alliance Court
Alliance Road
LONDON
W3 0RB

DELIVERY DETAILS

Zeesham
46 Moorfield Road
Uxbridge
UB8 3SJ

ACCOUNT NO.	CUSTOMER ORDER NO.	DELIVERY DATE		TEL. NO.	STAFF ID
351837	UB8 3SJ	29 October 2024		02039055551	101901

PRODUCT CODE	DESCRIPTION	QUANTITY	PRICE	UNIT	VALUE	SALES TYPE	CODE
151772012	HALLSTONE BLENDED LOAM TOPSOIL BULK BAG APPROX. 0.5m3	6	50.00	EACH	300.00	DELIVERY	STD
DELIVERY	Delivery Charge	1	0.00	EACH	0.00	DELIVERY	STD

Cash	Cheque	Card	P.I.A/BACS	Voucher	Account
0.00	0.00	0.00	0.00	0.00	360.00

CODE	RATE	GOODS	VALUE
STD	20%	300.00	60.00

TOTAL NET GOODS	300.00
TOTAL VAT	60.00
TOTAL	360.00

To pay your credit account, please send via bank payment to:

Account Name: Selco Trade Centres Ltd Sales
Sort Code: 40-05-20 Account Number: 71762796

Quoting your Customer Account Number - 351837

SIGNATURE:

WORKERS NAME:

Photograph 1: B & X Construction Ltd Supplied Photograph – Topsoil sales receipt 27524 dated 01.02.2025.

Photograph 2: B & X Construction Ltd Supplied Photograph – Topsoil sales receipt 27496 dated 01.02.2025.

Photograph 3: B & X Construction Ltd Supplied Photograph – Topsoil sales receipt 38748 dated 04.02.2025.

Photograph 4: B & X Construction Ltd Supplied Photograph – Topsoil sales receipt 58684 dated 04.02.2025.

Photograph 5: B & X Construction Ltd Supplied Photograph – Topsoil sales receipt 25601 dated 04/02/2025.

Appendix C

Topsoil Analysis Report supplied by B & X Construction Ltd

TIM O'HARE ASSOCIATES
SOIL & LANDSCAPE CONSULTANCY

Mr Ian Elwick
Hallstone Developments Ltd
The Airfield
Seaton Ross
York
YO42 4NF

4th November 2024
Our Ref: TOHA/24/1592/SS
Your Ref: PO IE12217

Dear Sirs

Topsoil Analysis Report: Hallstone Blended Loam (01/10)

We have completed the analysis of the soil sample recently submitted, referenced *Hallstone Blended Loam (01/10),* and have pleasure reporting our findings.

The purpose of the analysis was to determine the suitability of the topsoil sample for general landscape purposes, including residential back gardens. In addition, this sample has been assessed to determine its compliance with the requirements of the British Standard for Topsoil *(BS3882:2015 – Specification for Topsoil – Table 1, Multipurpose Topsoil).*

This report presents the results of analysis for the sample submitted to our office, and it should be considered 'indicative' of the topsoil source. The report and results should therefore not be used by third parties as a means of verification or validation testing or waste designation purposes, especially after the topsoil has left the Hallstone Developments Ltd site.

SAMPLE EXAMINATION

The sample was described as a very dark greyish brown (Munsell Colour 10YR 3/2), slightly moist, friable, slightly calcareous LOAMY SAND with a weakly developed, very fine to fine granular structure*. The sample was slightly stony and contained a high proportion of organic fines and frequent woody fragments. No unusual odours, deleterious materials, roots or rhizomes of pernicious weeds were observed.

*This appraisal of soil structure was made from examination of a disturbed sample. Structure is a key soil characteristic that may only be accurately assessed by examination in an in-situ state.

ANALYTICAL SCHEDULE

The sample was submitted to a UKAS and MCERTS accredited laboratory for a range of physical and chemical tests to confirm the composition and fertility of the soil, and the concentration of selected potential contaminants. The following parameters were determined:

- particle size analysis (% sand, silt, clay);
- stone content (2-20mm, 20-50mm, >50mm);
- pH and electrical conductivity values;
- exchangeable sodium percentage;
- major plant nutrients (N, P, K, Mg);
- organic matter content;
- C:N ratio;
- heavy metals (As, B, Ba, Be, Cd, Cr, Cu, Pb, Hg, Ni, Se, V, Zn);
- total cyanide and total (mono) phenols;
- speciated PAHs (US EPA16 suite);
- aromatic and aliphatic TPH (C5-C35 banding);
- benzene, toluene, ethylbenzene, xylene (BTEX);
- asbestos screen.

The results are presented on the attached Certificate of Analysis and an interpretation of the results is given below.

RESULTS OF ANALYSIS

Particle Size Analysis and Stone Content

The sample fell into the *loamy sand* texture class, which is usually considered suitable for general landscape applications provided the soil's physical condition is satisfactory.

The stone content of the sample was low and, as such, stones should not restrict the use of the soil for general landscape purposes.

pH and Electrical Conductivity Values

The sample was strongly alkaline in reaction (pH 8.3). This pH value would be considered suitable for general landscape purposes provided species with a wide pH tolerance or those known to prefer alkaline soils are selected for planting, turfing and seeding.

The electrical conductivity (salinity) value (water extract) was moderate, which indicates that soluble salts should not be present at levels that would be harmful to plants.

The electrical conductivity value by $CaSO_4$ extract (*BS3882* requirement) fell below the maximum specified value (3300 µS/cm) given in *BS3882:2015 – Table 1*.

Organic Matter and Fertility Status

The sample was well supplied with organic matter and all major plant nutrients.

The C:N ratio of the sample was acceptable for general landscape purposes.

Potential Contaminants

With reference to *BS3882:2015* - Table 1: Notes 3 and 4, there is a requirement to confirm levels of potential contaminants in relation to the topsoil's proposed end use. This includes human health, environmental protection and metals considered toxic to plants. In the absence of site-specific criteria, the concentrations that affect human health have been compared with the *residential with homegrown produce* land use in the Suitable For Use Levels (S4ULs) presented in the *LQM/CIEH S4ULs for Human Health Risk Assessment* (2015) and the DEFRA SP1010: *Development of Category 4 Screening Levels for Assessment of Land Affected by Contamination – Policy Companion Document* (2014). The concentration of barium has been compared with the *residential* land use given in the document *EIC/AGS/CL:AIRE Soil Generic Assessment Criteria for Human Health Risk Assessment* (2010).

Of the potential contaminants determined, none were found at levels that exceeded their guideline values.

Phytotoxic Contaminants

Of the phytotoxic (toxic to plants) contaminants determined (copper, nickel, zinc), none were found at levels that exceeded the maximum permissible levels specified in *BS3882:2015 – Table 1.*

CONCLUSION

The purpose of the analysis was to determine the suitability of the topsoil sample for general landscape purposes, including residential back gardens. The analysis has also been undertaken to determine the sample's compliance with the requirements of the British Standard for Topsoil *(BS3882:2015 – Specification for Topsoil – Table 1, Multipurpose Topsoil).*

From the soil examination and subsequent laboratory analysis, the sample was described as a strongly alkaline, non-saline, slightly calcareous *loamy sand* with a weakly developed structure and a low stone content. The sample was well supplied with organic matter and all major plant nutrients. Of the potential contaminants determined, none exceeded their respective guideline values.

To conclude, based on our findings, the topsoil represented by this sample would be considered suitable for general landscape purposes (trees, shrubs and amenity grass, including residential back gardens), provided species with a wide pH tolerance or those known to prefer alkaline soils are selected and the physical condition of the soil is satisfactory.

The sample was fully compliant with the requirements of the British Standard for Topsoil *(BS3882:2015 – Specification for Topsoil – Table 1, Multipurpose Topsoil).*

RECOMMENDATIONS

Soil Handling Recommendations

It is important to maintain the physical condition of the soil and avoid structural damage during all phases of soil handling (e.g. stockpiling, respreading, cultivating, planting, seeding or turfing). As a consequence, soil handling operations should be carried out when soil is sufficiently dry to be non-plastic (friable) in consistency.

It is important to ensure that the soil is not unnecessarily compacted by trampling or trafficking by site machinery, and soil handling should be stopped during and after heavy rainfall and not continued until the soil is friable in consistency. If the soil is structurally damaged and compacted at any stage during the course of soiling or landscaping works, it should be cultivated appropriately to relieve the compaction and to restore the soil's structure prior to any planting, turfing or seeding.

Further details on soil handling are provided in Annex A of *BS3882:2015.*

We hope this report meets with your approval and provides the necessary information. Please do not hesitate to contact the undersigned if we can be of further assistance.

Yours faithfully

Ebony Gheorghe
BSc MSc
Soil Scientist

Tim O'Hare
BSc MSc FISoilSci FBIAC CSci
Principal Consultant

For & on behalf of Tim O'Hare Associates LLP

TIM O'HARE ASSOCIATES
SOIL & LANDSCAPE CONSULTANCY

Client:	**Hallstone Developments Ltd**
Project	**Hallstone Blended Loam (01/10)**
Job:	**Topsoil Analysis - BS3882:2015**
Date:	**04/11/2024**
Job Ref No:	**TOHA/24/1592/SS**

Sample Reference			**Hallstone Blended Loam (01/10)**	
		Accreditation		
Clay (<0.002mm)	%	UKAS	9	✓
Silt (0.002-0.063mm)	%	UKAS	12	✓
Sand (0.063-2.0mm)	%	UKAS	79	✓
Texture Class (UK Classification)	--	UKAS	LS	✓
Stones (2-20mm)	% DW	GLP	5	✓
Stones (20-50mm)	% DW	GLP	0	✓
Stones (>50mm)	% DW	GLP	0	✓
pH Value (1:2.5 water extract)	units	UKAS	8.3	✓
Electrical Conductivity (1:2.5 water extract)	uS/cm	UKAS	1024	✓
Electrical Conductivity (1:2 $CaSO_4$ extract)	uS/cm	UKAS	2924	✓
Exchangeable Sodium Percentage	%	UKAS	5.9	✓
Organic Matter (LOI)	%	UKAS	5.9	✓
Total Nitrogen (Dumas)	%	UKAS	0.28	✓
C : N Ratio	ratio	UKAS	12	✓
Extractable Phosphorus	mg/l	UKAS	81	✓
Extractable Potassium	mg/l	UKAS	1443	✓
Extractable Magnesium	mg/l	UKAS	210	✓
Total Arsenic (As)	mg/kg	MCERTS	4	✓
Total Barium (Ba)	mg/kg	MCERTS	67	✓
Total Beryllium (Be)	mg/kg	MCERTS	0.4	✓
Total Cadmium (Cd)	mg/kg	MCERTS	0.3	✓
Total Chromium (Cr)	mg/kg	MCERTS	12	✓
Total Copper (Cu)	mg/kg	MCERTS	18	✓
Total Lead (Pb)	mg/kg	MCERTS	25	✓
Total Mercury (Hg)	mg/kg	MCERTS	< 0.3	✓
Total Nickel (Ni)	mg/kg	MCERTS	8	✓
Total Selenium (Se)	mg/kg	MCERTS	< 1.0	✓
Total Vanadium (V)	mg/kg	MCERTS	12	✓
Total Zinc (Zn)	mg/kg	MCERTS	88	✓
Water Soluble Boron (B)	mg/kg	MCERTS	2.1	✓
Total Cyanide (CN)	mg/kg	MCERTS	< 1.0	✓
Total (mono) Phenols	mg/kg	MCERTS	< 1.0	✓
Naphthalene	mg/kg	MCERTS	< 0.05	✓
Acenaphthylene	mg/kg	MCERTS	< 0.05	✓
Acenaphthene	mg/kg	MCERTS	< 0.05	✓
Fluorene	mg/kg	MCERTS	< 0.05	✓
Phenanthrene	mg/kg	MCERTS	0.20	✓
Anthracene	mg/kg	MCERTS	< 0.05	✓
Fluoranthene	mg/kg	MCERTS	0.58	✓
Pyrene	mg/kg	MCERTS	0.53	✓
Benzo(a)anthracene	mg/kg	MCERTS	0.34	✓
Chrysene	mg/kg	MCERTS	0.34	✓
Benzo(b)fluoranthene	mg/kg	MCERTS	0.4	✓
Benzo(k)fluoranthene	mg/kg	MCERTS	0.2	✓
Benzo(a)pyrene	mg/kg	MCERTS	0.39	✓
Indeno(1,2,3-cd)pyrene	mg/kg	MCERTS	0.17	✓
Dibenzo(a,h)anthracene	mg/kg	MCERTS	< 0.05	✓
Benzo(g,h,i)perylene	mg/kg	MCERTS	0.20	✓
Total PAHs (sum USEPA16)	mg/kg	MCERTS	3.3	✓
Aliphatic TPH (C5-C6)	mg/kg	MCERTS	< 0.010	✓
Aliphatic TPH (C6-C8)	mg/kg	MCERTS	< 0.010	✓
Aliphatic TPH (C8-C10)	mg/kg	MCERTS	< 0.010	✓
Aliphatic TPH (C10-C12)	mg/kg	MCERTS	< 1.0	✓
Aliphatic TPH (C12-C16)	mg/kg	MCERTS	< 2.0	✓
Aliphatic TPH (C16-C21)	mg/kg	MCERTS	< 8.0	✓
Aliphatic TPH (C21-C35)	mg/kg	MCERTS	10	✓
Aliphatic TPH (C5-C35)	mg/kg	MCERTS	10	✓
Aromatic TPH (C5-C7)	mg/kg	MCERTS	< 0.010	✓
Aromatic TPH (C7-C8)	mg/kg	MCERTS	< 0.010	✓
Aromatic TPH (C8-C10)	mg/kg	MCERTS	< 0.020	✓
Aromatic TPH (C10-C12)	mg/kg	MCERTS	< 1.0	✓
Aromatic TPH (C12-C16)	mg/kg	MCERTS	< 2.0	✓
Aromatic TPH (C16-C21)	mg/kg	MCERTS	< 10	✓
Aromatic TPH (C21-C35)	mg/kg	MCERTS	11	✓
Aromatic TPH (C5-C35)	mg/kg	MCERTS	11	✓
Benzene	mg/kg	MCERTS	< 0.005	✓
Toluene	mg/kg	MCERTS	< 0.005	✓
Ethylbenzene	mg/kg	MCERTS	< 0.005	✓
p & m-xylene	mg/kg	MCERTS	< 0.008	✓
o-xylene	mg/kg	MCERTS	< 0.005	✓
MTBE (Methyl Tertiary Butyl Ether)	mg/kg	MCERTS	< 0.005	✓
Asbestos Screen	ND/D	ISO17025	Not-detected	✓

Visual Examination

The sample was described as a very dark greyish brown (Munsell Colour 10YR 3/2), slightly moist, friable, slightly calcareous LOAMY SAND with a weakly developed, very fine to fine granular structure. The sample was slightly stony and contained a high proportion of organic fines and frequent woody fragments. No unusual odours, deleterious materials, roots or rhizomes of pernicious weeds were observed.

Ebony Gheorghe
BSc MSc
Soil Scientist

✓	Meets General Landscape Specification
X	Fails General Landscape Specification
*	See Report Comments
LS	Loamy Sand Texture Class
PAH	Polyaromatic Hydrocarbons
ND	Not-detected

Results of analysis should be read in conjunction with the report they were issued with

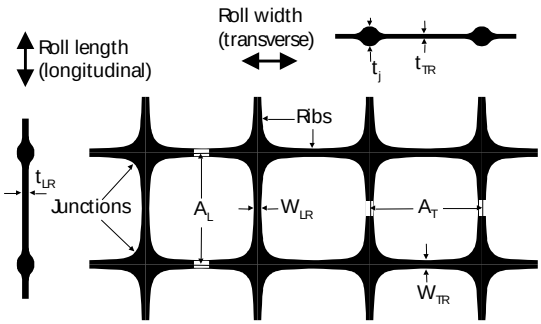
Appendix D

Tensar Technical Note SS20 geogrid including delivery note

Tensar SS Geogrids Product Specifications

Tensar SS geogrids are used for the reinforcement of soils and aggregates in construction of structures such as road pavements, working platforms and reinforced foundations.

Tensar SS geogrids are stiff monolithic geogrids with integral junctions. They are orientated in two directions such that the resulting ribs have a high degree of molecular orientation which continues through the area of the integral node. The ribs have a rectangular cross section with square edges.



Property	Units	Tensar SS geogrid				
		SS20	SS30	SS40	SSLA20	SSLA30
Polymer		Polypropylene				
Minimum carbon black (1)	%	2	2	2	2	2
Minimum roll width	m	4.0 & 3.8	4.0 & 3.8	4.0 & 3.8	3.8	3.8
Minimum roll length	m	75	50	30	50	50
Typical unit weight	kg/m^2	0.23	0.33	0.54	0.21	0.32
Typical roll weight	kg	69.5 & 66	67.5 & 64.5	65 & 62	40.5	61.5
Typical Dimensions						
A_L	mm	39	39	33	65	65
A_T	mm	39	39	33	65	65
W_{LR}	mm	2.3	2.2	2.4	4.2	3.6
W_{TR}	mm	2.8	2.1	3.2	4.5	4.5
t_J	mm	3.8	4.9	5.8	4.6	6.4
t_{LR}	mm	1.6	2.1	2.7	1.4	2.3
t_{TR}	mm	1.2	1.6	2.1	1.2	1.7
Quality control strength longitudinal						
Minimum T_{ult} (2)	kN/m	20.0	30.0	40.0	20.0	30.0
Typical strength at 2% strain (2)	kN/m	7.0	10.5	14.0	7.0	11.0
Typical strength at 5% strain (2)	kN/m	14.0	21.0	28.0	14.0	22.0
Approx strain at T_{ult}	%	11.0	11.0	11.0	10.0	9.0
Junction efficiency (3)	%	100-10%	100-10%	100-10%	100-10%	100-10%
Quality control strength transverse						
Minimum T_{ult} (2)	kN/m	20.0	30.0	40.0	20.0	30.0
Typical strength at 2% strain (2)	kN/m	7.0	10.5	14.0	8.0	12.0
Typical strength at 5% strain (2)	kN/m	14.0	21.0	28.0	15.0	25.0
Approx strain at T_{ult}	%	10.0	10.0	10.0	10.0	9.0
Junction efficiency (3)	%	100-10%	100-10%	100-10%	100-10%	100-10%

(1) The geogrid shall have a minimum of 2% finely divided carbon black, well dispersed in the polymer matrix to inhibit attack by ultra violet light, determined in accordance with ASTM D1603-06

(2) Determined in accordance with BS EN ISO 10319:2015

(3) Determined and reported in accordance with EOTA TR041

(4) The minimum working life of Tensar SS geogrids is assumed to be 100 years in natural soils with a pH value between 4 and 9 and in soil temperatures less than 15°C and is expected to be 50 years in natural soils with a pH value between 4 and 9 and in soil temperatures less than 25°C, when covered within 30 days.

(5) Tensar SS geogrids are manufactured in accordance with a Quality Management System which complies with the requirements of BS EN ISO 9001:2015. All quoted dimensions and values are typical unless stated otherwise.

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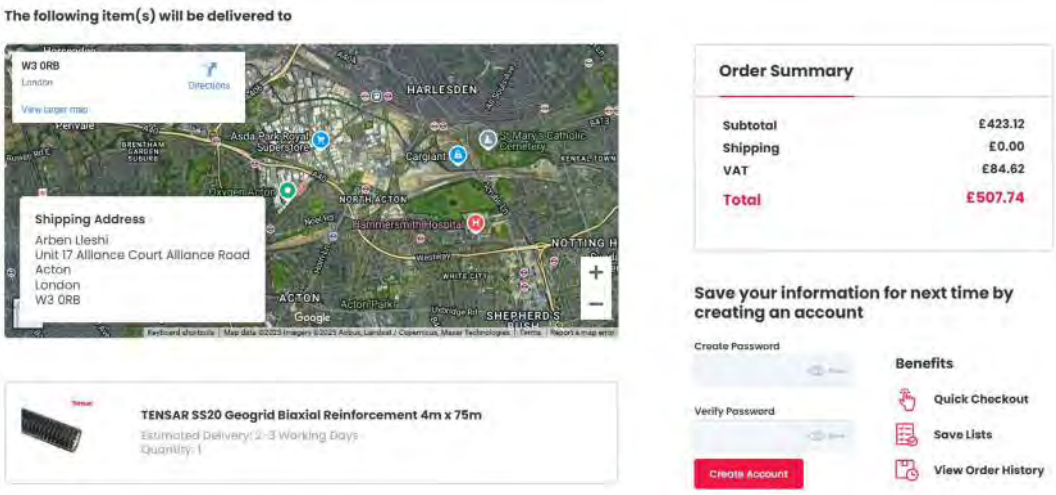

Photograph 1: B & X Construction Ltd Supplied order screenshot – Tensar SS20 Geogrid.