



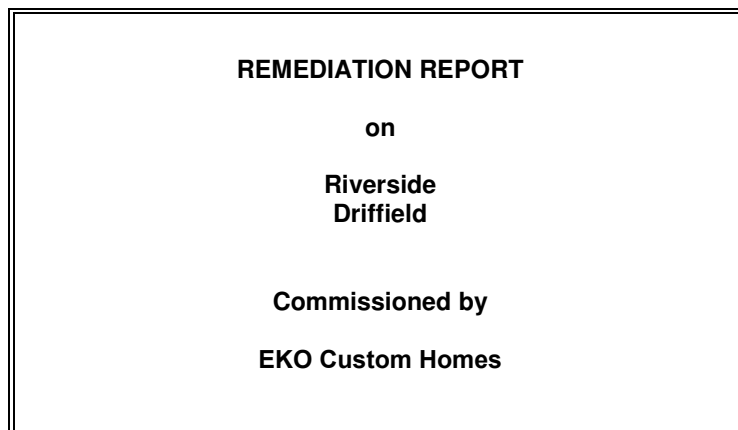
528 Holderness Road
Hull
HU9 3DT

Tel: 01482 319365

GRIFFIN TOOMES CONSULTING ENGINEERS

Email: info@griffintoomes.co.uk

web: www.griffintoomes.co.uk



Client:

**EKO Custom Homes
60A Middle Street South
Driffield
Yorkshire
YO25 6PH**

20 February 2023

REF: J4809

1.0 INTRODUCTION

This report has been prepared at the request of EKO Custom Homes who owns Riverside, Driffield (“the property”).

2.0 BACKGROUND

It is intended to construct dwellings on the site together with garages. The drives to the garages and paths will be from impermeable surfacing the gardens will be lawned. Foundations and drainage will be below finished ground level

The site is located on level ground adjacent to a highway and watercourse.

We have not inspected the property previously; we are aware that the site was previously used as a Highways Depot.

3.0 INSPECTION

A visual inspection of the property was carried out on 16th February 2022. A desk top study followed examining the proposals and a contamination report carried out by Arc Environmental on the site of the highways depot. (A copy of the report is in Appendix A)

It is our intent to comment on the necessary remedial works. The rest of the works is not included within our report unless we have specifically stated otherwise.

The weather was lightly overcast, and the ground was dry at the time of our inspection.

4.0 OBSERVATIONS

The Arc Environmental report identifies that the site is overlain by made ground varying in depth between 200mm and 1.0m. This made ground was found to have a level of contamination in parts. It concludes with recommendations to protect the underlying soils or remove the contaminated materials from site.

5.0 CONCLUSIONS AND RECOMENDATIONS

Due to the varying depths and varying levels of contamination it is recommended that the made ground be excavated and removed from site. This can then be replaced by clean stone in the construction areas and clean topsoil elsewhere to reinstate the current levels.

7.0 GENERAL

Our inspection and report deal with the remediation aspects as specifically commented upon above.

Sampling and testing of materials are beyond the scope of this report.

We have not inspected parts of the site which are covered, unexposed or are inaccessible.

This report is applicable to the condition and state of the site at the time of inspection.

A photographic record has been kept on record.

Signed:

A handwritten signature in black ink, appearing to be 'S. Hirst', written in a cursive style.

**Steve Hirst BSc. C.Eng. M.I.C.E.
for GTCE Civil and Structural Engineers**

APPENDIX A

**ARC ENVIROMENTAL
CONTAMINATION REPORT**

Solum House
Unit 1 Elliott Court
St. Johns Road
Meadowfield
Durham
DH7 8PN

Tel: (0191) 378 6380

e-mail: admin@arc-environmental.com
www.arc-environmental.com



REMEDIATION STRATEGY

ASHCOURT GROUP

PROPOSED DENTAL SURGERY & OFFICES

FORMER COUNCIL HIGHWAYS DEPOT

RIVERSIDE

DRIFFIELD

YO25 6PA

Project No: 20-818

Prepared By:

Mark Berriman

A handwritten signature in black ink, appearing to read 'M. Berriman', with a horizontal line extending to the right.

Date:

10th November 2020

Approved By:

Matt Bradford

A handwritten signature in red ink, appearing to read 'M. Bradford', with a horizontal line extending to the right.

Date:

10th November 2020

The information and/or advice contained in this Remediation Strategy is based solely on, and is limited to, the boundaries of the site, the immediate area around the site, and the historical use(s) unless otherwise stated. This 'Report' has been prepared in order to collate information relating to the physical, environmental and industrial setting of the site, and to highlight, where possible, the likely problems that might be encountered when considering the future development of this site for the proposed end use. All comments, opinions, diagrams, cross sections and/or sketches contained within the report, and/or any configuration of the findings is conjectural and given for guidance only and confirmation of the anticipated ground conditions should be considered before development proceeds. Agreement for the use or copying of this report by any Third Party must be obtained in writing from Arc Environmental Limited (ARC). If a change in the proposed land use is envisaged, then a reassessment of the site should be carried out.

Report Type:- Remediation Strategy.

Project:- 20-818 – Former Council Highways Depot, Riverside, Driffield YO25 6PA.

Prepared For:- Ashcourt Group.

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APPENDICES

Appendix I	Location Plan, Aerial Photograph, Existing Site Layout Plan, Proposed Development Layout Plan.
Appendix II	Proposed Development Layout Plan with Soft Landscaping Areas.
Appendix III	Validation Assessment Criteria

1.0 Introduction

November 2020

As requested by Ashcroft Group and following the results of the Phase 1: Desk Top Study (DTS) and Phase 2: Ground Investigation Report (GIR) completed for this site, a Remediation Strategy (RS) has been prepared for the proposed commercial redevelopment of the former Council Highways Depot, Riverside, Drifffield. The proposed development will comprise the construction of a dental surgery and office building with associated parking and hard and soft landscaping.

The ground conditions and potential contamination issues associated with this site have been investigated and assessed through the completion of a Phase 1: Desk Top Study (DTS) report and a Phase 2: Ground Investigation Report (GIR). These documents have been used to aid the completion of this RS and this document should be read in conjunction with the following reports:-

- Phase 1: Desk Study Report (DTS), Report Ref. 20-532, Arc Environmental Ltd., August 2020.
- Phase 2: Ground Investigation Report (GIR) Report Ref. 20-532, Arc Environmental Ltd., September 2020.
- Hazardous Ground Gas Risk Assessment (HGGRA) Addendum Letter Report – Ref. 20-532.04L, 26th October 2020.
- Ongoing Groundwater Monitoring – Interim Letter Report – Ref. 20-818.01L, 9th November 2020.

2.0 Site Details

Table 2.1

Site Name & Address:	Former Council Highways Depot, Riverside, Drifffield YO25 6PA
National Grid Reference:	502904, 457060 (representative for the centre of the site).
Description of Location:	The site is situated to the west of Riverside, south of the centre of Drifffield.
Site Boundaries:	N= residential buildings, E= Riverside road and Drifffield Canal, S= Waste water treatment works and W=Industrial/Commercial Estate.
Site Location plan:	See Appendix I.
Layout plan (existing):	See Appendix I.
Layout plan (proposed):	See Appendix I.
Client:	Ashcourt Group.
Design Consultant:	TBC.
Project Type:	The proposed development is to comprise the construction of a new dental surgery and an office building, all with associated hardstanding, car parking and soft landscaping. CLEA classification = <i>commercial</i> end use
Preliminary Remediation Statement:	From the results of all the contamination screening and gas monitoring undertaken as part of the Phase 2: GIR works, it can be seen that a robust clean cover system (typically 600mm of subsoil and 150mm of topsoil = 750mm minimum total depth) will be required for the areas of future soft landscaping, where made ground is to remain insitu. From the results of the completed HGGRA the site meets a CS1 characteristic situation and does not require gas protection measures. In order to protect the groundwater below this site from potential future contaminant leachate, the made ground containing the black ash and gravel materials (TPH's & PAH's) will be removed from site. Furthermore, additional screening of the groundwater (minimum 3 rounds) will be carried out with the completion of further quantitative risk assessment to ensure there are no on going or future risks to Controlled Waters.

3.0 Scope of Works

This RS has been prepared generally in accordance with EA (Environment Agency) guidance for Land Contamination Risk Management (LCRM: October 2020) which replaces CLR11: Model Procedures for the Management of Land Contamination, in order to provide a framework for establishing the most appropriate

3.0 Scope of Works (Cont'd)

remediation option(s) for this site, based upon the findings of the Phase 2:GIR. This RS can be used to support the current planning application for the proposed development, and allow the Design team, Main Contractor and chosen Sub-contractors to incorporate the necessary remediation works into the overall development design and construction works.

The information contained in this RS is limited to the areas of the site as indicated on the existing and proposed development layout plans attached in Appendix I. The validation of the implementation of the RS will be dealt with in a final Validation Report, once all the remediation works have been completed.

4.0 Summary of Ground Contamination Assessment

From the results of the ground contamination risk assessments completed as part of the Phase 2: GIR works, there is a potential risk to the end users from some speciated PAH's present in the shallow made ground recorded across the development area, where pathways will exist following completion of the development works. Bearing in mind the nature of the proposed development works, it can be seen that only the areas of future soft landscaping will result in pathways being available for contaminant migration, with the rest of the site being hardcover (building footprints and car parking areas, etc.). Therefore, appropriate remediation measures are required for the soft landscaping parts of the site.

From the results of the initial leachate and groundwater screening it can be seen that there is a limited potential risk to Controlled Waters from surface water leaching through the made ground, for those parts of the site where the higher PAH and TPH concentrations have been recorded, unless appropriate remedial measures are put in place. These elevated concentrations are most likely as a result of residual contamination associated with the black ash and gravel layers below the current tarmac surfacing, rather than representing a significant source of mobile contamination or free product (i.e. waste oils, fuels, etc.).

When considering the lower concentrations of TPH's and PAH's noted in the groundwater samples, whilst elevated concentrations have been recorded, it is recommended that further groundwater monitoring and screening is undertaken (as part of the remediation works) to confirm that only low concentrations are present within the groundwater regime below this site and that these do not represent a significant risk to groundwater and/or the nearest surface water features.

5.0 Remediation Strategy

Following the findings of the ground contamination risk assessments completed for this site, the following Remediation Strategy has been deemed as the most appropriate remediation solution for this site, the details of which are discussed in the following Sections.

5.1 Principles of Protection:-

5.1.1 Watching Brief & Removal of Leachable Contamination:-

In order to identify any areas of unknown or unforeseen ground contamination which may be present, as well as to identify the areas of higher potentially leachable PAH and TPH contamination in the shallow made ground, a site wide watching brief will be undertaken by Arc Environmental Ltd. as part of the site strip and preparation works. Where potentially leachable PAH and TPH contamination is identified below areas of future soft landscaping and/or any permeable surfacing, this will be removed from site.

In addition, as part of the initial site strip and preparation works, site awareness during all future groundworks (foundation excavations, service trenches, etc.) and the construction phase, as part of the site wide watching

5.0 Remediation Strategy (Cont'd)

5.1 Principles of Protection (Cont'd):-

5.1.1 Watching Brief & Removal of Leachable Contamination (Cont'd):-

brief, will ensure that any areas of unforeseen or unknown ground contamination are identified. In the event that significant ground contamination is found then this will be dealt with separately and the ground contamination risk assessment updated to determine the appropriate action required.

In this instance the main contractor should notify Arc Environmental Ltd. as soon as possible to allow for further sampling and screening to be undertaken. Details of the appropriate course of action undertaken to deal with these materials will be provided to the Local Authority prior to carrying out any remediation. Further remediation and validation works may then be necessary.

5.1.2 Robust Clean Cover System:-

For all areas of future soft landscaping, where made ground is to remain below these areas, a robust clean cover system will be put in place (typically 600mm of clean subsoil materials with 150mm of clean topsoil on top = 750mm total depth). Alternatively, all the made ground materials from these areas of the site can be removed and replaced by a suitable clean imported subsoil and topsoil material. The emplacement of the robust clean cover system or removal of the made ground materials will remove the potential risk to future end users.

5.1.3 Groundwater Monitoring:-

A programme of groundwater monitoring will be completed, with additional detailed quantitative risk assessment if required, will be undertaken, to ensure that there are no current or future risks to Controlled Waters.

5.1.4 Decommissioning of Groundwater Monitoring Standpipes:-

Following completion of the groundwater monitoring programme, the 4 no. groundwater monitoring standpipes (CP's 01 to 04) will be decommissioned in accordance with the Environment Agency (EA) document 'Good practice for decommissioning redundant boreholes and wells' (2012). This will ensure that these installations do not represent preferential contaminant migration pathways following redevelopment of the site.

5.1.5 Removal of Made Ground at Piling Positions:-

Given the proposed use of driven steel pile foundations for at least two of the three new structures, the made ground materials at the location of each pile will be removed to prevent any of the made ground being dragged down to the Chalk Aquifer and potentially causing cross contamination during the construction works.

5.1.6 Re-use of Site Won Materials:-

Where the current concrete hard cover is to be considered for re-use on site (following crushing and processing) as a general granular fill or capping layer, these materials will be chemically screened to ensure they are suitable for use and do not represent a potential risk to the end users or Controlled Waters. The tarmacadam surface layer and generic made ground materials will not be re-used on this site.

5.0 Remediation Strategy (Cont'd)

5.1 Principles of Protection (Cont'd):-

5.1.7 Waste Management/Disposal:-

Excavated materials which are to be discarded and removed from this site as a waste to landfill, will be classified in accordance with the 'Guidance on the Classification and Assessment of Waste (1st Edition v1.1, 2018) – Technical Guidance WM3'. Waste classification of the made ground encountered during the intrusive investigation works is contained within the Phase 2: GIR report. If other materials, not already classified, are to be discarded from site as a waste to landfill, additional analysis and screening will be undertaken to confirm where these materials can be disposed of. This will ensure that all waste discarded from this site is dealt with appropriately.

5.2 Implementation of Remediation Strategy:-

Prior to the commencement of the site works and in conjunction with the Main Contractor, the appointed foundation and groundworks subcontractors should prepare and submit suitable Methodologies for the implementation of all the remediation elements detailed in this Remediation Strategy. This should be submitted to Arc Environmental Ltd. for approval a minimum of 2 weeks before commencing site works, to ensure that the methodology will meet the requirements of the Remediation Strategy and allow for any amendments to be made that might be required.

5.2.1 Watching Brief & Removal of Leachable Contamination:-

A site wide watching brief will be completed by Arc Environmental Ltd. during the site strip and preparation works, in order to examine all the made ground materials below the current hardstanding surfacing and identify areas of potential leachable TPH and PAH contamination for chemical screening and potential removal from site. In addition, any areas of unknown/unforeseen areas of potential ground contamination will be identified followed by chemical screening and risk assessment to determine whether additional remedial measures are required. Any materials identified as potentially containing elevated contaminants will be excavated and temporary stockpiled on a visqueen base and covered to avoid potential cross-contamination or rainwater run-off, whilst samples undergo laboratory screening and the risk assessment is completed.

Where materials contain contaminants which exceed the assessment criteria for this site (commercial end use) and/or represent a potential future leachate risk, these materials will be removed from site and disposed of appropriately. The number of samples screened and risk assessed will be dependent upon the actual volume of materials identified as potentially contaminated, with the screening frequency matching the YALPAG guidance for brownfield soils (1 sample per 100m³, with a minimum of 6 samples tested).

Following completion of the initial site wide watching brief completed by Arc Environmental Ltd. covering the site strip and preparation works, the watching brief will continue by the Main Contractor to cover all further groundworks such as excavations for services, foundations, etc. If any unknown or unforeseen ground contamination is identified, the Main Contractor should notify Arc Environmental Ltd. as soon as possible to allow for further sampling and screening to be undertaken, using the same criteria as above. Details of the appropriate course of action undertaken to deal with these materials will be agreed with the Local Authority prior to carrying out any remediation and validation works.

5.2.2 Robust Clean Cover System:-

For all areas of future soft landscaping, where made ground is to remain below these areas, a robust clean cover system will be put in place comprising a minimum of 750mm clean imported subsoil and topsoil materials. At this stage, it is anticipated that the clean cover system will typically comprise 600mm of clean

5.0 Remediation Strategy (Cont'd)

5.2 Implementation of Remediation Strategy (Cont'd): -

5.2.2 Robust Clean Cover System (Cont'd):-

subsoil materials with 150mm of clean topsoil to provide a root zone for future vegetation growth. A copy of the proposed development layout with the areas of soft landscaping highlighted for this site can be seen in Appendix II.

5.2.3 Groundwater Monitoring:-

The programme of groundwater monitoring and screening will comprise a minimum of 3 no. monitoring visits, before the monitoring standpipes are decommissioned, in order to confirm that the TPH and PAH concentrations present in the shallow groundwater below this site do not represent a significant risk to Controlled Waters.

5.2.4 Decommissioning of Groundwater Monitoring Standpipes:-

Decommissioning of the monitoring installations in CP's 01 to 04 will be completed in accordance with the Environment Agency (EA) document 'Good practice for decommissioning redundant boreholes and wells' (2012). The following measures are will be undertaken to decommission the monitoring installations:

- Works will be undertaken by a specialist drilling contractor under the supervision of an Engineer from Arc Environmental Ltd.
- Records will be kept to ensure that the correct volume of materials has been used and the borehole has been entirely backfilled.
- The pipe work will be slowly removed to prevent collapse of the gravel surrounds.
- The borehole will be backfilled with bentonite pellets. The works will be undertaken with due care to avoid bridging. Bentonite pellets will be used rather than bentonite powder as the pellets will sink through the water column.
- Due to narrow aperture of the boreholes, and access constraints it is considered that the use of tremie pipe is not suitable for the borehole.
- Following removal of the pipework and backfilling of the borehole, the headworks will be removed and excavated when the site strip and preparation works are carried out. A cement plug will be placed from site formation level to a depth of approximately 1.00m bgl.
- Following completion of these works, regulatory approval for the decommissioning of the monitoring installations will be obtained as part of the Validation Works.

5.2.5 Removal of Made Ground at Piling Positions:-

All made ground will be excavated and removed at each of the pile positions, prior to the installation of the working platform. Once the final pile design and layout has been completed, the locations requiring removal of the made ground will be confirmed. The excavation and removal works will be validated by Arc Environmental Ltd.

5.2.6 Re-use of Site Won Materials:-

Where considered suitable and/or required, the site won crushed concrete hard cover will be used as a general granular fill or capping layer. Following excavation and processing on site, the site won granular fill will be temporary stockpiled on site before re-use. Any excess site won materials will be removed from site.

5.0 Remediation Strategy (Cont'd)

5.2 Implementation of Remediation Strategy (Cont'd):-

5.2.6 Re-use of Site Won Materials (Cont'd):-

Appropriate physical and chemical screening of the site won materials will be provided by the Main Contractor to Arc Environmental Ltd. a minimum of 1 week before re-use on site to confirm their suitability.

5.2.7 Waste Management/Disposal:-

As part of the remediation validation works for this Remediation Strategy, detailed monitoring of the handling and disposal of all the materials that need to be discarded as a waste will be undertaken by the Main Contractor and the records submitted to Arc Environmental Ltd. for inclusion in the final Validation Report.

5.2.8 Risk Assessment (Construction Workforce):-

When considering the potential risks to the construction workforce, it will be necessary to ensure that the appropriate level of protection is provided, and these should be detailed in the site health and safety management scheme (designed by the Main Contractor), during all construction activities. These measures should include appropriate PPE and good site practice, and the results of all the contamination screening undertaken (all results contained within all the site investigation reports) can be used when assessing the required level of protection (based on the acute exposure risk).

For further guidance reference should be made to the Health and Safety Executive (HSE) document EH40/2005 (Second edition, published 2011) Workplace Exposure Limits.

6.0 Validation Requirements

To ensure that all elements of the Remediation Strategy are properly implemented, the following validation works should be undertaken and documented within a final Validation Report, confirming that each element of the remediation works has been completed. The validation works will comprise the following:

6.1 Validation of Watching Brief and Removal of Contamination:-

Validation of the site wide watching brief will be through documented site visits and photograph records by Arc Environmental Ltd. In addition, if no further areas of unknown or unforeseen contamination are encountered, the Main Contractor will provide written confirmation of this. All these records will be included in the final Validation Report.

Following the excavation and removal of the contaminated made ground materials, validation screening will be undertaken by Arc Environmental Ltd., on the sides and base of the excavations, and these will be assessed against the relevant Validation Screening Assessment Criteria given in Appendix III. The results of the validation screening will be included in the final Validation Report.

6.2 Validation of Robust Clean Cover System:-

Only clean subsoil and topsoil materials will be imported to site for use in the robust clean cover systems and confirmation of the origin/supplier, volume and suitability for use on this site will be provided by the Main Contractor to Arc Environmental Ltd. a minimum of 1 week before importation to site.

Following emplacement of the imported robust clean cover system, in the areas of future soft landscaping, the minimum thickness (photographic records) and eventual final volumes of the clean cover will be validated by

6.0 Validation Requirements (Cont'd)

6.2 Validation of Robust Clean Cover System (Cont'd):-

Arc Environmental Ltd. Validation sampling and screening will also be undertaken to confirm the suitability of these materials for use on this site.

The validation screening will meet the YALPAG Verification Requirements for Cover Systems, Technical Guidance for Developers, Landowners and Consultants – Yorkshire and Lincolnshire Pollution Advisory Group (YALPAG), Version 3.4, November 2017, with the testing schedules and frequencies dependent upon the origin/source of imported topsoil and subsoil materials. A copy of the range of the recommended testing schedules and frequencies can be seen in Appendix III. The results of the validation screening will be included in the final Validation Report.

6.3 Validation of the Decommissioning of Groundwater Monitoring Standpipes:-

The records kept by Arc Environmental Ltd. for the decommissioning of the groundwater monitoring standpipes will be included in the final Validation Report. In addition, Arc Environmental will provide confirmation of the regulatory approval for the decommissioning of the monitoring standpipes, as part of the final Validation Report.

6.4 Validation of the Removal of Made Ground at Piling Positions:-

A visual inspection to confirm the removal of the made ground at each of the pile locations will be completed by Arc Environmental Ltd., prior to installation of the working platform. The records of the site inspection (including photographic records) will be included in the final Validation Report.

6.5 Validation of Re-use of Site Won Materials:-

Copies of the physical and chemical screening carried out on the site won concrete for use as a general granular fill or capping layer, as provided by the Main Contractor, will be included in the final Validation Report.

6.6 Validation of Waste Management/Disposal:-

- Confirmation of Waste Classification (WM3) and suitability for disposal at chosen landfill (WAC Testing certificates where required).
- Collection and inclusion of all documentary evidence relating to the disposal of waste to landfill from this site, i.e. waste consignment/transfer notes, landfill tip receipts, etc.
- The Main Contractor will be responsible for the collation of all relevant documentation and will provide this to Arc Environmental Ltd. for inclusion in the final Validation Report.

6.7 Validation Report:-

Following completion of all of the required remediation works, including the installation of the robust clean cover system, a final Validation Report will need to be produced and submitted to the LA confirming all the works undertaken and verification that the Remediation Strategy has met all the requirements for the development of this site. The Validation Report will also include details of all variations to the Remediation Strategy, where these occur.

END OF REPORT

APPENDIX I


**Location Plan, Aerial Photograph,
Existing Site Layout Plan
&
Proposed Development Layout Plan**



ARC ENVIRONMENTAL LTD

Solum House
 Unit 1 Elliott Court
 St. John's Road
 Meadowfield
 Durham, DH7 8PN
 Tel: (0191) 378 6380
 Fax: (0191) 378 0494
 e-mail: admin@arc-environmental.com
 web: www.arc-environmental.com

The contractor shall check all dimensions on site before commencement of any works. No dimensions to be scaled off this drawing.
 © Copyright Reserved

LEGEND	
	APPROXIMATE SITE BOUNDARY

hatching denotes separate future development area

rev.	date	amendments	drawn	chkd

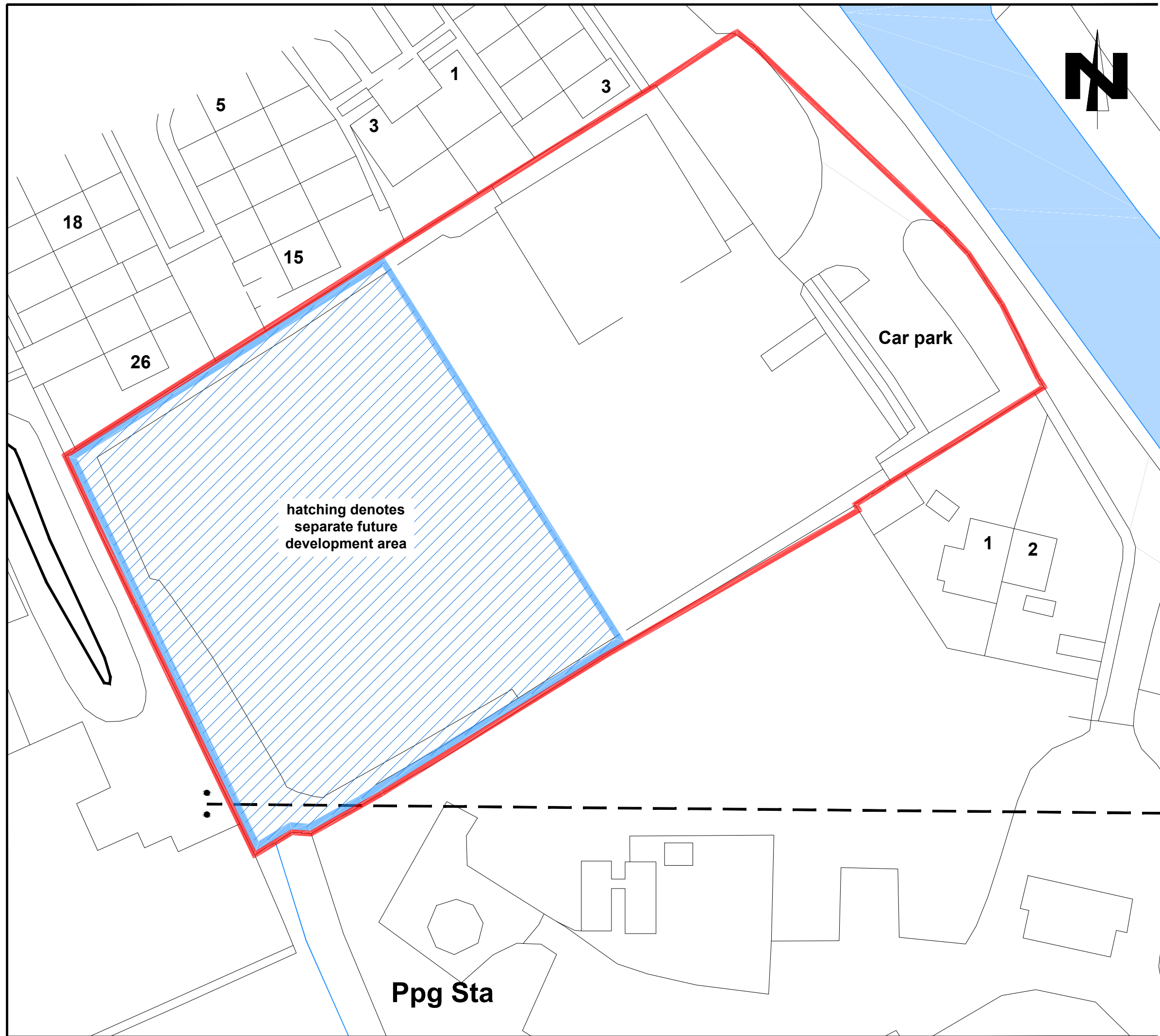
Client:
ASHCOURT GROUP

Project Title:
 Proposed New Dental Surgery & Office Building
 Former Highways Depot, Riverside
 Driffield, East Riding of Yorkshire, YO25 6PA

Drawing Title:
 Aerial Photograph

Scale at A3: NTS @ A3	Date: 20.08.20	Drawn by: P.D	Approved by: R.J
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Job Ref: 20-532	Drg no: -	Rev: -
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ARC ENVIRONMENTAL LTD
 Solum House
 Unit 1 Elliott Court
 St. John's Road
 Meadowfield
 Durham, DH7 8PN
 Tel: (0191) 378 6380
 Fax: (0191) 378 0494
 e-mail: admin@arc-environmental.com
 web: www.arc-environmental.com

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LEGEND	
	APPROXIMATE SITE BOUNDARY

rev.	date	amendments	drawn	chckd

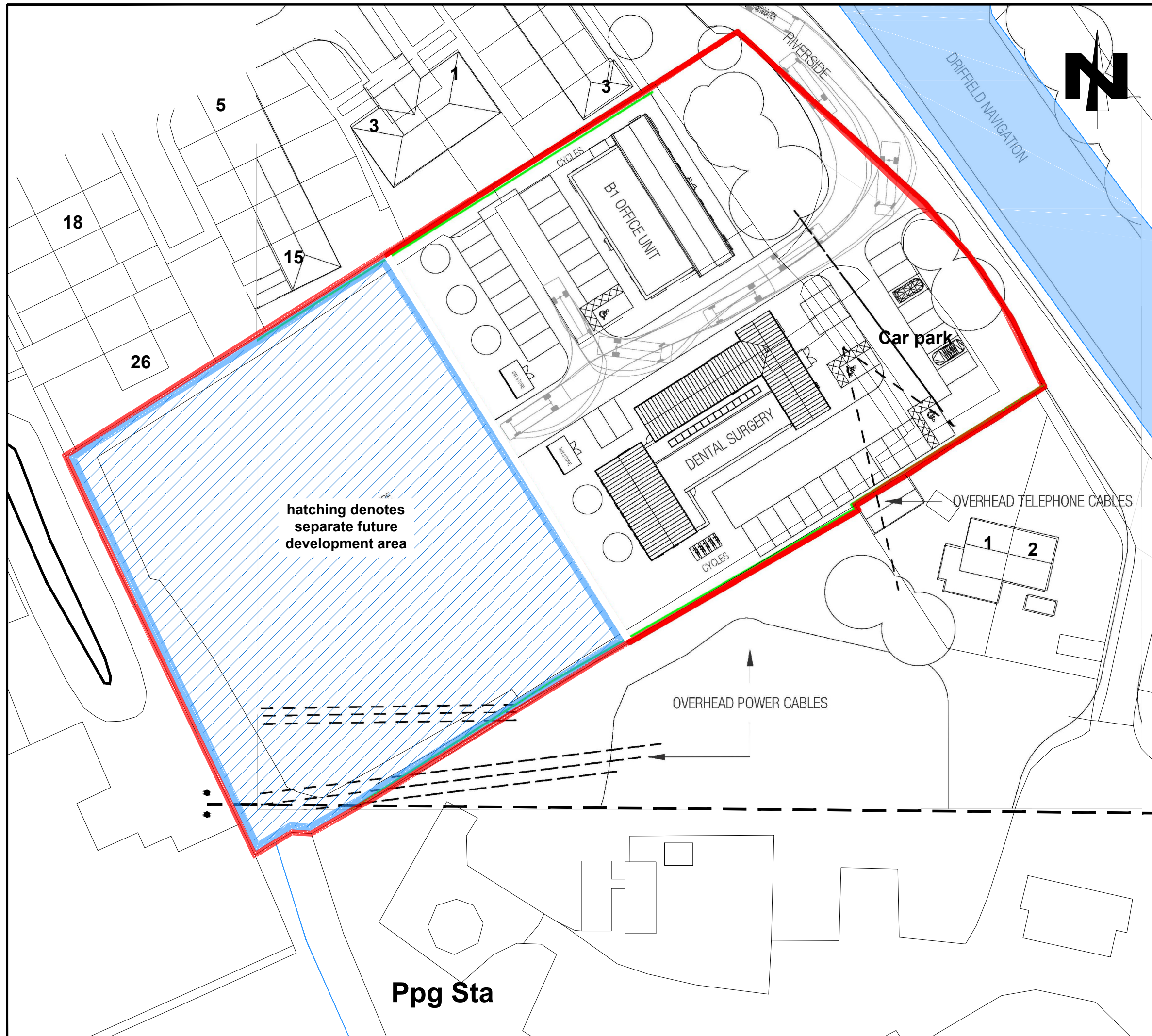
Client:
ASHCOURT GROUP

Project Title:
 Proposed New Dental Surgery & Office Building
 Former Highways Depot, Riverside
 Driffield, East Riding of Yorkshire, YO25 6PA

Drawing Title:
 Existing Site Layout Plan

Scale at A3: NTS @ A3	Date: 20.08.20	Drawn by: P.D	Approved by: R.J
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Job Ref: 20-532	Drg no: -	Rev: -
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ARC ENVIRONMENTAL LTD
 Solum House
 Unit 1 Elliott Court
 St. John's Road
 Meadowfield
 Durham, DH7 8PN
 Tel: (0191) 378 6380
 Fax: (0191) 378 0494
 e-mail: admin@arc-environmental.com
 web: www.arc-environmental.com

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LEGEND	
	APPROXIMATE SITE BOUNDARY

rev.	date	amendments	drawn	chkd

Client:
ASHCOURT GROUP

Project Title:
 Proposed New Dental Surgery & Office Building
 Former Highways Depot, Riverside
 Driffield, East Riding of Yorkshire, YO25 6PA

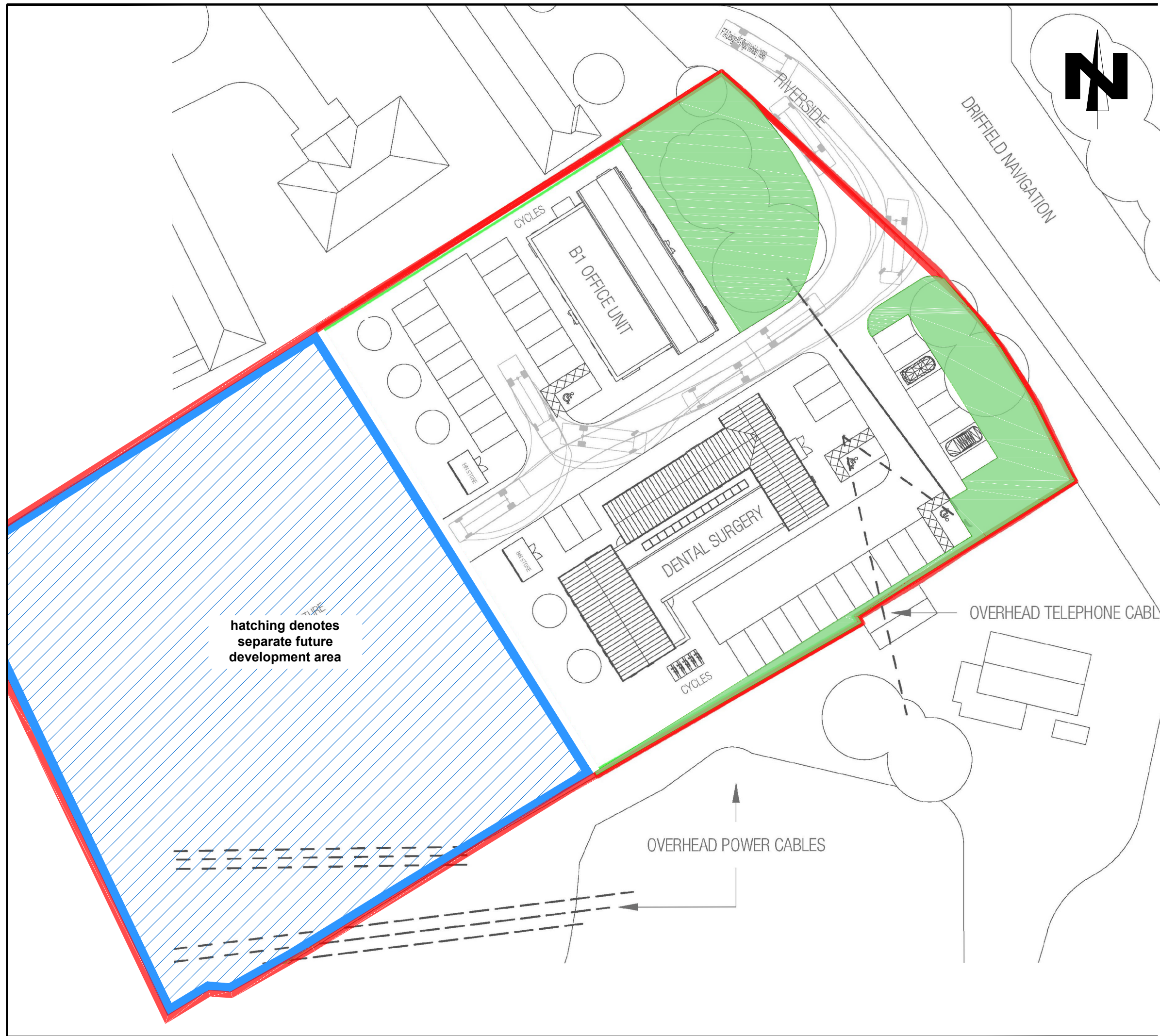
Drawing Title:
 Proposed Development Layout Plan

Scale at A3: NTS @ A3	Date: 20.08.20	Drawn by: P.D	Approved by: R.J
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Job Ref: 20-532	Drg no: -	Rev: -
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APPENDIX II

Proposed Development Layout Plan with Soft Landscaping Areas



ARC ENVIRONMENTAL LTD
 Solum House
 Unit 1 Elliott Court
 St. John's Road
 Meadowfield
 Durham, DH7 8PN
 Tel: (0191) 378 6380
 Fax: (0191) 378 0494
 e-mail: admin@arc-environmental.com
 web: www.arc-environmental.com

The contractor shall check all dimensions on site before commencement of any works. No dimensions to be scaled off this drawing.
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LEGEND	
	APPROXIMATE SITE BOUNDARY
	APPROXIMATE EXTENTS OF PROPOSED SOFT LANDSCAPING AREAS

rev.	date	amendments	drawn	chkd

Client:
ASHCOURT GROUP

Project Title:
 Proposed New Dental Surgery & Office Building
 Former Highways Depot, Riverside
 Driffield, East Riding of Yorkshire, YO25 6PA

Drawing Title:
 Proposed Development Layout Plan
 with Soft Landscaping Areas

Scale at A3: NTS @ A3	Date: 10.11.20	Drawn by: P.D	Approved by: M.R.B
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Job Ref: 20-818	Drg no: -	Rev: -
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APPENDIX III

Validation Assessment Criteria

Validation Screening Assessment Criteria

Analyte	Critical Conc. (Cc) mg/kg
Metals/Metalloids	
Arsenic	640 ⁽¹⁾
Cadmium	190 ⁽¹⁾
Chromium III	8600 ⁽¹⁾
Chromium VI	33 ⁽¹⁾
Copper	68000 ⁽¹⁾
Lead	2330 ⁽²⁾
Mercury	1100 ⁽¹⁾
Nickel	980 ⁽¹⁾
Selenium	12000 ⁽¹⁾
Zinc	730000 ⁽¹⁾
Cyanide	34 ⁽³⁾
Asbestos	
	Presence
Speciated PAH's	
Acenaphthene	97000 ⁽¹⁾
Acenaphthylene	97000 ⁽¹⁾
Anthracene	540000 ⁽¹⁾
Benzo(a)anthracene	170 ⁽¹⁾
Benzo(a)pyrene	35 ⁽¹⁾
Benzo(b)fluoranthene	44 ⁽¹⁾
Benzo(ghi)perylene	4000 ⁽¹⁾
Benzo(k)fluoranthene	1200 ⁽¹⁾
Chrysene	350 ⁽¹⁾
Dibenz(ah)anthracene	3.6 ⁽¹⁾
Fluoranthene	23000 ⁽¹⁾
Fluorene	68000 ⁽¹⁾
Indeno(123cd)pyrene	510 ⁽¹⁾
Naphthalene	460 ⁽¹⁾
Phenanthrene	22000 ⁽¹⁾
Pyrene	54000 ⁽¹⁾
Speciated TPH	
VPH Aliphatic EC5-6	5900 ⁽¹⁾
VPH Aliphatic EC6-8	17000 ⁽¹⁾
VPH Aliphatic EC8-10	4800 ⁽¹⁾
EPH Aliphatic EC10-12	23000 ⁽¹⁾
EPH Aliphatic EC12-16	82000 ⁽¹⁾
EPH Aliphatic EC16-C35	1700000 ⁽¹⁾
EPH Aliphatic EC35-44	1700000 ⁽¹⁾
VPH Aromatic EC5-7	46000 ⁽¹⁾
VPH Aromatic EC7-8	110000 ⁽¹⁾
VPH Aromatic EC8-10	8100 ⁽¹⁾
EPH Aromatic EC10-12	28000 ⁽¹⁾
EPH Aromatic EC12-16	37000 ⁽¹⁾
EPH Aromatic EC16-21	28000 ⁽¹⁾
EPH Aromatic EC21-35	28000 ⁽¹⁾
EPH Aromatic EC35-44	28000 ⁽¹⁾
BTEX	
Benzene	47 ⁽¹⁾
Toluene	110000 ⁽¹⁾
Ethylbenzene	13000 ⁽¹⁾
m & p-Xylene	14000 ⁽¹⁾
o-Xylene	15000 ⁽¹⁾

⁽¹⁾ = LQM CIEH Suitable 4 Use Levels (S4UL Nov 2014 (Revised August 2015)) – Commercial (2.5% SOM), ⁽²⁾ = CL:AIRE C4SL's – Commercial, ⁽³⁾ = ATRISK^{SOIL} SSV, Note = All units are mg/kg.

Report Type:- Remediation Strategy.

Project:- 20-818 – Former Council Highways Depot, Riverside, Driffield YO25 6PA.

Prepared For:- Ashcourt Group.

Type	Number of Samples	Testing Schedule	Assessment Criteria
Virgin quarried material.	1 or 2 depending on the type of stone utilised, to confirm the inert nature of the material.	Standard metals/metalloids (should include as a minimum As, Cd, Cr, CrVI, Cu, Hg, Ni, Pb, Se & Zn).	The Assessment criteria is UK based, e.g. LQM / CIEH S4UL's, Defra C4SL's and ATRISK ^{SOIL} SSV.
Crushed hardcore, stone, brick.	Minimum 1 per 1000m ³ .	Standard metals/metalloids (as above), PAH (16 USEPA specification) & Asbestos.	
Greenfield soils / manufactured soils.	Minimum 3 or 1 per 250m ³ (whichever is greater).	Standard metals/metalloids (as above), PAH (16 USEPA specification) & Asbestos.	
Brownfield soils / screened soils.	Minimum 6 or 1 per 100m ³ (whichever is greater).	Standard metals/metalloids (as above), PAH (16 USEPA specification), TPH (CWG banded) & Asbestos Any additional analysis dependant on the history of the donor site.	

(Table taken from the Verification Requirements for Cover Systems – Technical Guidance for Developers, Landowners and Consultants – Yorkshire and Lincolnshire Pollution Advisory Group, Version 3.4, November 2017)