

PHASE 1 GEO-ENVIRONMENTAL DESK STUDY AND PRELIMINARY RISK ASSESSMENT

THE FORMER ROSE & CROWN 10 BENINGTON ROAD ASTON SG2 7DX

Reference Number 3501/Rpt 1v1 February 2024

Prepared for

QH (London Colney) Ltd 57a Altwood Road Maidenhead SL6 4PN

Ву

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Client Address	57a Altwood Road, Maidenhead, SL6 4PN	
Report Title	Phase 1 Geo-environmental Desk Study and Preliminary Risk Assessment: The Former Rose & Crown, 10 Benington Road, Aston, SG2 7DX	
Reference Number	3501/Rpt 1v1	
Date	February 2024	

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	(Director)

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EXECUTIVE SUMMARY

This report describes the findings of a Geo-environmental Desk Study and Preliminary Risk Assessment of the former Rose & Crown, 10 Benington Road, Aston, SG2 7DX. It is proposed to redevelop the site for residential usage.

At the time of the walk-over the site was vacant public house consisting of the public house and a barn. The ground surrounding the buildings was the former car park and garden. The site walk-over did not identify any sources of potential contamination.

The review of the historical maps identified that the site was being used as a public house by the late 1800's.

The review of the industrial setting did not identify any sources of contamination.

A review of the environmental setting indicated the site to be underlain by superficial deposits consisting of glaciofluvial sand and gravel deposits, over the Lowestoft Formation. The solid geology beneath the superficial deposits consists of Lewes Nodular Chalk Formation and Seaford Chalk Formation. The superficial deposit is classified as a Secondary A Aquifer. The solid geology is classified as a Principal Aquifer. The site is in a Zone 2 Source Protection Zone. Surface water features were identified within the vicinity of the site.

The Conceptual Model prepared for the site has not identified any active pollution linkages as no source of contamination were identified receptors. It is concluded that the level of risk from contamination is considered to be acceptable.

No recommendations for further site investigation have been made.

1 INTRODUCTION

1.1 Background

Brown 2 Green Associates Ltd have been commissioned by QH (London Colney) Ltd to undertake a Phase I Geo-Environmental Desk Study and Preliminary Risk Assessment of the former Rose & Crown, 10 Benington Road, Aston, SG2 7DX. The site is centred on National Grid Reference 527400, 222740. The site location is presented in Figure 1.

1.2 Proposed Development

The work was commissioned to provide information for a planning application to redevelop the subject site. It is proposed to convert the existing building to residential and to develop additional houses with private gardens and parking. The proposed development is shown on drawing number PL0020 prepared by Forge Design Studios. The proposed development layout is presented in Appendix II.

1.3 Objectives

The objectives of the work are to provide an assessment of risk from contaminated land to inform about potential re-development of the site, address the requirements of the National Planning Policy Framework¹ and Planning Practice Guidance. These objectives are achieved by:

- Undertake a site inspection to identify any current areas of potential environmental concern;
- Review historical plans, geology, hydrogeology, site sensitivity, flood-plain issues, mining records and any local authority information available in order to complete a Desk Study in line with Environment Agency Contaminated Land Risk Management.

The information obtained in this study has been used to develop an initial Conceptual Site Model (CSM) and outline potential risks from contamination at the site. This CSM examines potential Source-Pathway-Receptor contaminant linkages in relation to identified or potential contamination issues at the site and vicinity, incorporating them into a Preliminary Risk Assessment. This report has been completed in accordance with Environment Agency Contaminated Land Risk Management.

The Preliminary Risk Assessment seeks to establish firstly whether unacceptable risk as defined in Part 2A of the Environmental Protection Act 1990 is present and secondly whether a possibility of harm to controlled waters, human health or property is present and further investigation is therefore needed to better inform about risk assessment.

1.4 Sources of Information

Background information relating to the site was acquired and referenced from the following sources:

- Historical mapping (Appendix IV);
- Environmental Database Search. All relevant data is summarised in the text of the report. A full copy is presented in Appendix V;
- On-line planning records held by East Herts Council;
- British Geological Survey website.

1 . .

¹ National Planning Policy Framework, Department for Communities and Local Government, September 2023.

- DEFRA Magic website.
- UK Soil Observatory website.

A site walkover was carried out by a Geo-environmental Consultant from Brown 2 Green Associates on the 13th February 2024.

2 SITE LOCATION AND DESCRIPTION

2.1 Site Location and Surrounding Area

The site is in a residential area on the north side of Bennington Road. The land uses immediately adjacent to the site are summarised below:

Direction	Land Use
North	Residential
East	Residential
South	Bennington Road, residential and recreational
West	Residential

The topography of the surrounding area slopes down towards a spring and stream located to the southeast.

The site location is presented in Figure 1.

2.2 Site Descriptions and Reconnaissance

The site layout is presented in Figure 2. A photographic record of the site is included in Appendix III.

The subject parcel of land is rectangular in shape and covers 0.31 hectares. Access to the site is from Bennington Road along the southern boundary.

At the time of the walk-over the site was occupied by a closed public house that was in a poor state of repair. The former public house was located along the southern side of the site. The building had two floors and was constructed of rendered brick with a tiles roof. A basement was present beneath the building. The land between the building a Bennington Road was paved with asphalt and was used for parking. A car park was located to the west of the building.

The area to the north is the former public house garden and was overgrown with grass and brambles. A single L-shaped barn constructed of wood with corrugated metal sheet roof was present immediately north of the building. The barn was empty.

2.2.1 Storage of Chemicals and Hazardous Substances

Above Ground Storage Tanks (ASTs)

No above ground storage tanks (ASTs) or evidence of former ASTs were observed at the site.

Underground Storage Tanks (USTs)

No underground storage tanks (USTs) or evidence of USTs were observed at the site.

Other Chemical Storage

No significant storage of chemicals was noted at the time of the walkover.

Polychlorinated Biphenyls

No equipment that may potentially contain polychlorinated biphenyls (PCBs) was observed at the

site.

2.2.2 Asbestos Containing Materials

During the inspection no materials suspected to contain asbestos were observed at the site.

No asbestos survey reports were made available.

2.2.3 Waste Disposal

No waste disposal activities were identified. General discarded domestic items, wood and plastic items were noted around the building.

2.2.4 Site Drainage

A formal drainage survey has not been completed but it is assumed the site was connected to the foul sewer which is likely to be located within Bennington Road to the south.

No trade effluent is generated by the site.

No oil/water interceptors were identified.

No soakaways were identified.

Rainwater will either infiltrate into the ground or is lost through surface water run-off or evapotranspiration.

Visual and Olfactory Evidence of Contamination

No specific visual or olfactory evidence of contamination was noted.

2.3 Potential Sources of Contamination

During the review of the site setting and reconnaissance no plausible potential sources of contamination were identified.

3 HISTORICAL LAND USE

3.1 Historical Mapping

The maps at scales of 1:1,250, 1: 2,500, 1:10,000 and 1:10,560 were reviewed to determine the history of the site. A summary of the site history is presented below. The historical maps are included in Appendix IV.

Date	Site	Surrounding Area
1881	The southern part of the site is	The site is located within a village of
1:2,500	recorded to be the Rose and Crown.	Aston, with residential land use
	Three buildings are present. Two	surrounding the subject site. A smithy
	where the existing buildings are	is located 55m to the east.
	located and one in the southwest	
	corner. The northern part of the site is	
	an open field.	
1898	As 1881.	No relevant changes noted.
1:2,500		
1923	As 1881.	No relevant changes noted.
1:2,500		
1946	As 1881.	No relevant changes noted.
1:10,560		
1960	As 1881.	No relevant changes noted.
1:10,000		
1973	The building in the southwest corner	No relevant changes noted. General
1:2,500	has been demolished and the car park	residential development within the
	has been established.	surrounding area.
1978 - 1989	As 1973.	General residential development
1:2,500		within the local area.
1991	As 1973.	No relevant changes noted.
1:2,500		
1993	As 1973.	No relevant changes noted.
1:2,500		
1999	As 1973.	No relevant changes noted.
1:10,000		

3.2 Listed Buildings and Historical Sites

No world heritage site, scheduled monuments or registered battlefields are present within a 250m radius the site.

The nearest listed buildings are the barn and the public house that are present on the site.

3.3 Local Authority – Planning

A review of on-line planning records from East Herts Council was completed on 19th February 2024. Various applications have been made to convert the existing buildings to residential and construct additional houses. The currently application includes conditions relating to contamination.

3.4 Other Sources

A review has been made of satellite photographs contained on Google Earth. The photograph dated 2000 shows the public house as being open. The land to the north appears to be overgrown. No changes in the land use are noted.

3.5 Sources of Potential Contamination

During the review of the historical land use of the site and surrounding area, no sources of potential contamination were identified where it is considered that there is a plausible pollution pathway.

4 INDUSTRIAL SETTING

4.1 Contemporary Trade Directory Entries

There are no contemporary trade directory entries for the site. Within 250m radius of the site there are three contemporary trade directory entries. The nearest is inactive and was for the manufacture and distribution of filters. The site was located 61m northeast. The property appears to be residential and thus it is likely that the site was an office.

Within 500m radius of the site there are no entries for filling stations.

4.2 Landfill Sites and Waste Disposal Facilities

There are no historical or operational landfill sites or waste management facilities within 250m radius of the site.

4.3 Environmental Permits, Incidents and Registers

The following information is a summary of the data contained Environmental Database presented in Appendix V.

	On Site	0 – 250m	Details of Nearest	Potential Risk to Site
Contaminated Land Register Entries and Notices (Part 2A EPA 1990)	0	0		No
Licensed Discharge Consents	0	1	242m east Discharge of treated sewage	No
Prosecutions Relating to Controlled Waters	0	0		No
Enforcement and Prohibition Notices	0	0		No
Authorised industrial processes (IPC/IPPC/LAPPC)	0	0	-	No
Pollution Incidents to Controlled Waters	0	1	208m south east. Date on incident not recorded but involved sewage	No
Prosecutions Relating to Authorised Processes	0	0		No
Radioactive Substances Authorisations	0	0	-	No
Control of Major Accident Hazard (COMAH/NIHHS/Explosive) sites	0	0	-	No
Consents issued under the Planning (Hazardous Substances) Act 1990	0	0	-	No

4.4 Ground Workings, Mining and Natural Cavities

There are no BGS recorded mineral site on or within 250m radius of the subject site.

The database states that the site is not located in a Cheshire Salt Brine Subsidence Compensation Board District.

The database states that the site is not located in an area affected by coal mining.

The data base indicates that the site is not located within an area where there is the potential for mining instability.

The database states that there are no non-coal mining areas within 1000m of the site.

5 ENVIRONMENTAL SETTING

5.1 Geology and Hydrogeology

The British Geological Survey online mapping indicates that the site is underlain by the following geology:

Superficial/Solid	Geological Unit	Description
Cuparficial	Glaciofluvial Deposits	Sand and gravel
Superficial	Lowestoft Formation	Diamicton
Solid	Lewes Nodular Chalk Formation and Seaford Chalk Formation	Chalk

Geological logs held by the British Geological Survey were reviewed. The nearest is located 350m to the west. The log indicates the area is underlain by the following geological conditions:

Description	Thickness	Depth to base
	(m)	(m)
Sand and gravel – Gravel	4.88	4.88
Yellow clay	1.22	6.10
Blue clay	3.65	9.75
Sand and sandstone	13.72	23.47
Chalk	9.22	32.69

The Superficial Deposits are classified as a Secondary (A) Aquifer. The solid geology is classified as a Principal Aquifer.

The combined groundwater vulnerability for the site is classified as High with an Intermediate pollutant speed.

There are three licenced groundwater abstraction points within 1km radius of the site. The nearest is 651m south and is for commercial/private. An abstraction well for the public water supply is located 782m northeast. The site is in a Zone 2 Source Protection Zones.

A well was noted on site. In the well groundwater was at 2.1m below ground level. The base of the well was at a depth greater than 30m.

If groundwater is present within the superficial deposits (sand and gravel), it is anticipated that the groundwater flow direction will be towards a sprint located to the southeast. the north-west. Within the solid geology the anticipated groundwater flow direction is towards the northeast and the abstraction well for potable water supply. The groundwater will be abstracted from the chalk and protection will be provided by the argillaceous deposits of the Lowestoft Formation.

5.2 Geochemistry

The British Geological Survey estimates of the geochemistry of the soils beneath the site are:

Determinants	Concentration (mg/kg)
Arsenic	15 - 25
Cadmium	<1.8
Chromium	60 - 90

Nickel	15 – 30
Lead	<100

5.3 Hydrology

The Ordnance Survey Water Network Lines indicates the nearest surface water feature is a spring and stream located 160m southeast.

There are no licensed surface water abstraction points within 500m radius of the site.

5.4 Ecologically Sensitive Areas

There are no ecologically sensitive sites within 250m radius of the site.

5.5 Radon

The site is in an area where between 1% and 3% of homes are above the Action Levels and Radon protective measures are not necessary in the construction of new dwellings or extensions.

5.6 Natural Hazards

BGS National Geoscience Information Service data presented within the Environmental Database presented in Appendix V identifies the following ground conditions:

Hazard	Designation
Potential for Collapsible Ground	Very low
Potential for Compressible Ground	No hazard
Potential for Ground Dissolution	Low
Potential for Landslide Ground	Very Low
Potential for Running Sands	Very Low
Potential for Shrinking or Swelling of Clays	Low

6 PREVIOUS REPORT

No previous site investigation reports were identified or made available.

7 INITIAL CONCEPTUAL MODEL

Brown 2 Green Associates Ltd has completed a Tier 1 Preliminary Risk Assessment to develop the initial conceptual site model to establish whether there are any potentially unacceptable risks. For the assessment the following steps have been taken:

- 1. Identify the hazard establish contaminant sources.
- 2. Assess the hazard use a source-pathway-receptor (S-P-R) linkage approach to find out if there is the potential for unacceptable risk.
- 3. Estimate the risk predict what degree of harm or pollution might result and how likely it is to occur by using the tiered approach to risk assessment.
- 4. Evaluate the risk decide whether a risk is unacceptable.

Assuming there is an active pollution pathway linkage between the source and receptor an assessment has been made of the level of risk. The level of risk is a consideration of both:

- the likelihood of an event (probability) [takes into account both the presence of the hazard and receptor and the integrity of the pathway]; and
- the severity of the potential consequence [takes into account both the potential severity of the hazard and the sensitivity of the receptor].

The classifications of the probability of an event occurring are presented in Appendix VI.

7.1 Sources of Potential Contamination

On-site Sources

Based on the findings of the site walk-over and the desk study information review, no potentially significant on-site sources of ground contamination have been identified that may plausibly result in impact to the site.

Off-site Sources

Based on the findings of the site walk-over and the desk study information review, no potentially significant off-site sources of ground contamination have been identified within a 250m radius of the subject site that may plausibly result in impact to the site.

7.2 Pathways

The following potential migration pathways have been identified with regard to the site and the current development proposals.

- Direct contact with contaminated soil;
- Ingestion of contaminated soil or soil dust;
- Inhalation of contaminated soil dust or asbestos fibres;
- Ingestion of contaminated vegetable produce (residential with plant up-take/allotments);
- Indoor inhalation:
- Ingress / accumulation of gas or vapours into buildings;
- Outdoor inhalation of ground gas or vapours;
- Leaching and migration of contaminants to and within surface waters and/or to ground groundwater and migration within the groundwater;

- Direct contact with underground services and other building material or leaching of contaminants into underground service corridors; and
- Uptake by fauna and flora.

Pathways identified for each contaminant are presented in the initial conceptual model detailed overleaf.

7.3 Receptors

Brown 2 Green Associates Ltd has identified the following possible receptors:

- Human health future users of the site (residential with private gardens).
- Human health neighbouring properties.
- Human health construction workers.
- Controlled water (groundwater)
- Controlled water (surface water).
- Buildings and construction materials (concrete).
- Water supply pipework.
- Future planting.
- Listed buildings and historical sites.

7.4 Discussion of Pollutant Linkages

In the absence of any significant on or off-site sources of contamination or contaminant pathways from potential off-site sources of contamination, no potential receptors are considered to be at risk.

8 CONCLUSIONS AND RECOMMENDATIONS

8.1 Conclusions

At the time of the walk-over the site was vacant public house consisting of the public house and a barn. The ground surrounding the buildings was the former car park and garden. The site walk-over did not identify any sources of potential contamination.

The review of the historical maps identified that the site has been used as a public house since the late 1800's.

The review of the industrial setting did not identify any sources of contamination.

A review of the environmental setting indicated the site to be underlain by superficial deposits consisting of glaciofluvial sand and gravel deposits, over the Lowestoft Formation. The solid geology beneath the superficial deposits consists of Lewes Nodular Chalk Formation and Seaford Chalk Formation. The superficial deposit is classified as a Secondary A Aquifer. The solid geology is classified as a Principal Aquifer. The site is located in a Zone 2 Source Protection Zone. Surface water features were identified within the vicinity of the site.

The Conceptual Model prepared for the site has not identified any active pollution linkages as no source of contamination were identified receptors. It is concluded that the level of risk from contamination is considered to be acceptable.

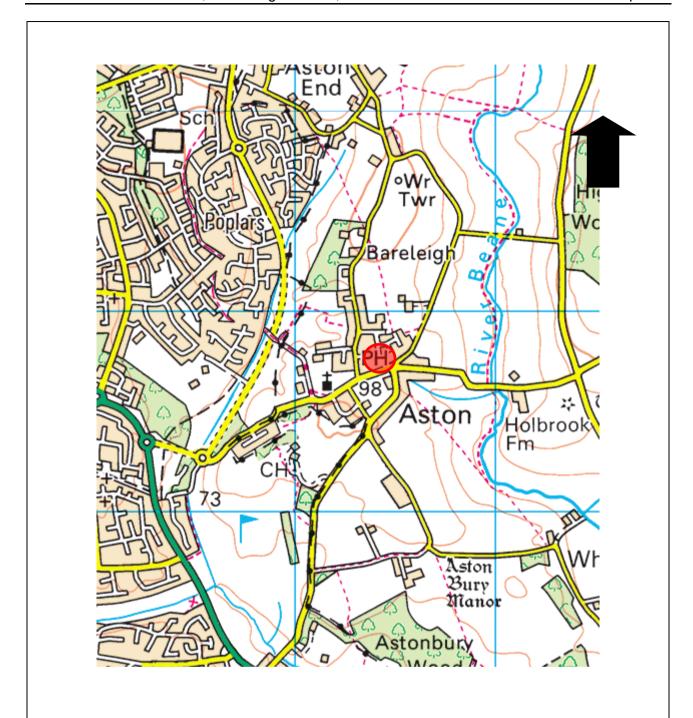
8.2 Recommendations

From the results of the Desk Study and Preliminary Risk Assessment no recommendations are made.

A well was recorded on site. As part of the development, if the well is to decommissions, it should be decommissioned in a manner to prevent the well for acting as a migration pathway for contamination into the underlying chalk aquifer. The decommission works should be completed in accordance with guidance from the Environment Agency.

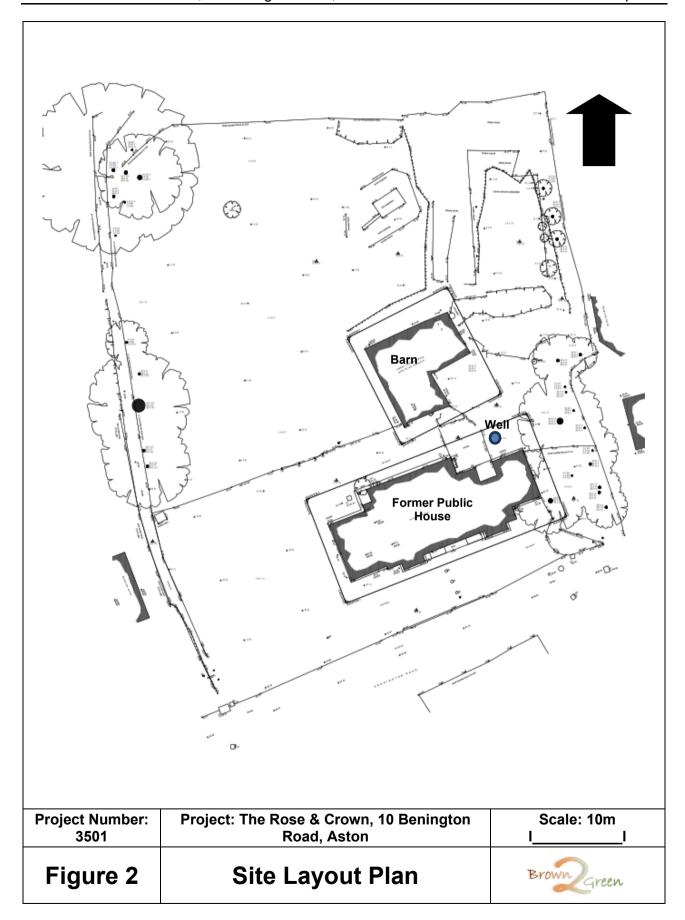
During the development of the site, should any evidence of contamination be identified contact should be made with a Contaminated Land Consultant.

FIGURES



Based on an Ordinance Survey map with permission of HMSO. Crown copy right reserved. Licence number 100053399

Project Number: 3501	Project: The Rose & Crown, 10 Benington Road, Aston	Scale: NTS
Figure 1	Site Location Plan	Brown



APPENDIX I LIMITATIONS AND CONSTRAINTS

Brown 2 Green Associates Limited has prepared this report in accordance with our standard Terms and Conditions solely for the use of the Client and those parties with whom a warranty agreement has been executed, or with whom an assignment has been agreed and outlined in the body of the report.

Brown 2 Green Associates Ltd cannot be held responsible for any use of the report or its contents for any purpose other than that for which it was prepared. The client cannot place reliance on the report until full payment has been made. The copyright in this report and other plans and documents prepared by Brown 2 Green Associates Ltd is owned by them and no such plans or documents may be reproduced, published or adapted without written consent. Complete copies of the report may, however, be made and distributed by the client as is expected in dealing with matters related to its commission. Should the client pass copies of the report to other parties for information, the whole report should be copied, but no professional liability or warranties shall be extended to other parties by Brown 2 Green Associates Ltd in this connection without their explicit written agreement thereto by Brown 2 Green Associates Ltd.

For the work, reliance has been placed on publicly available data obtained from the sources identified and data supplied by other parties. The information is not necessarily exhaustive and further information relevant to the site may be available from other sources. When using the information, it has been assumed it is correct. No attempt has been made to verify the information. Brown 2 Green Associates Ltd does not warrant work / data undertaken / provided by others.

Due to the short timescales associated with these projects, responses may not have been received from all parties. Brown 2 Green Associates Limited cannot be held responsible for any disclosures that are provided post production of our report and will not automatically update our report.

This report has been produced in accordance with UK policy and legislative requirements for land and groundwater contamination at the time the report was commissioned. Should changes in legislation or policy occur the report findings may need revisiting once the development layout is confirmed.

During the site walkover/reconnaissance reasonable effort has been made to obtain an overview of the site conditions. However, during the site walk-over/ reconnaissance no attempt has been made to enter areas of the site that are unsafe or present a risk to health and safety, are locked, barricaded, overgrown or the location of the area has not been made known, or where access has not been permitted.

This report presents an interpretation of the information and observation. It should be noted that when investigating, or developing land it is important to recognise that sub-surface conditions may vary spatially and also with time. Groundwater conditions are dependent on seasonal and other factors. Consequently there may be conditions present not revealed by this investigation.

The scope of the work is based on the specific development and land use scenario proposed by the Client and may be inappropriate to another form of development or scheme. If the development layout was not known at the time of the investigation the report findings may need revisiting once the development layout is confirmed.

Rather, this investigation has been undertaken to provide a characterisation of the existing site and sub-surface geo-environmental characteristics and make up and the findings of this study are our best interpretation of the data collected, within the scope of work and agreed budget. New information, revised practices or changes in legislation may necessitate the re-interpretation of the report, in whole or in part.

During any development programme Brown 2 Green Associates Limited should be consulted if

alternative ground conditions are encountered. It assumes during any site works that the contractor will use their best endeavours to manage and control groundwater and other unforeseen ground conditions. Brown 2 Green Associates Limited will not be liable for actions taken prior to consultation.

Where mention has been made to the identification of Japanese Knotweed and other invasive plant species and asbestos or asbestos-containing materials, this is for indicative purposes only and does not constitute or replace full and proper surveys.

APPENDIX II PROPOSED DEVELOPMENT LAYOUT



LEGEND:



PLANTING



LAWN



TARMAC



BLOCK PAVERS - COLOUR 1



BLOCK PAVERS - COLOUR 2



PAVING



GRASSCRETE



EXISTING TREE



NEW TREE

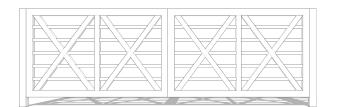


TREE TO BE REMOVED

BOUNDARY TREATMENT:

- 1 2.1M HIGH CLOSE BOARD FENCE
- 2 1.2M 1.5M HIGH POST AND RAIL FENCE
- 3 0.6M HIGH KNEE RAIL FENCE

COURTYARD ENTRANCE GATES ELEVATION



Annakut Ltd

Land Adjoining the Rose and Crown, Aston, Stevenage

Proposed Landscape Plan

Salisbury SP5 2RB

2 4 6 8 10 12 14 16 18 20m

info@forge-ds.co.uk studio 01794 885872

Status: For Planning

Drawn by:LM Date: July 2022 Checked by:MH Date: July 2022

Scale: 1:200@A2

Project no:202202 Drawing no: PL020

Revision:

APPENDIX III SITE PHOTOGRAPHS



Front of former public house



Rear of public house



Barn



Interior of barn