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# Flood Risk Assessment

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Nutts Lane  
Hinckley  
LE10 3EG



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April 2025

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# Document Control

| Date       | Revision | Comments                         |
|------------|----------|----------------------------------|
| April 2025 | /        | First issue.                     |
| March 2026 | A        | Latest site layout incorporated. |



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# Contents

|                                     |   |
|-------------------------------------|---|
| 1.0 Introduction                    | 1 |
| 2.0 Baseline Conditions             | 2 |
| 3.0 Flood Risk                      | 3 |
| 4.0 Surface Water Drainage Strategy | 7 |
| 5.0 Summary and Conclusion          | 8 |
| Appendix 1 – Proposed Site Plan     |   |
| Appendix 2 – Location Plan          |   |
| Appendix 3 – Topographical Survey   |   |

## 1.0 INTRODUCTION

### 1.1 Introduction

A planning application is being prepared for the construction of three detached dwellings on land off Nutts Lane, Hinckley.

The site is located within Flood Zone 1 and less than 1 hectare (ha) in size; however, the site is identified to be at risk of flooding from surface water on Environment Agency (EA) mapping. Therefore, a Flood Risk Assessment (FRA) has been prepared in support of the planning application.

### 1.2 Proposed Development

Planning permission is sought for the construction of three detached dwellings in the west of the site.

Associated parking areas and access are also proposed. The development will be supported by new surface water drainage infrastructure.

The Proposed Site Plan is provided as **Appendix 1**.

### 1.3 National Planning Policy

This Flood Risk Statement (FRS) has been prepared with due consideration of the statutory requirements of the National Planning Policy Framework (NPPF) and associated Planning Practice Guidance (PPG).

The proposals are considered to be 'More Vulnerable' in accordance with the PPG. It is considered appropriate for 'More Vulnerable' development to be located within Flood Zone 1.

The Sequential Test is therefore considered to be passed, and the Exception Test does not need to be applied.

## 2.0 BASELINE CONDITIONS

### 2.1 Location and setting

The site is located off Nutts Lane, Hinckley, Leicestershire, LE10 3EG. An approximate grid reference for the site is 440912, 292670. A Site Location Plan is included as **Appendix 2**.

The site is located in the southwest of Hinckley, approximately 2km from the town centre. Existing residential properties are located to the north and south of the site, undeveloped land to the west, and Nutts Lane to the east, off which the site is accessed.

The site is approximately 0.13 hectares (ha) in size.

The site is currently occupied predominantly with caravans and gravel surfacing. The site is considered to be brownfield.

### 2.2 Topography

A topographical survey of the site was carried out by Castle Surveys Ltd in March 2025 and is included as **Appendix 3**. The site is relatively flat, with elevations across the site between approximately 90 metres Above Ordnance Datum (mAOD) in the west and 90.4mAOD adjacent to Nutts Lane. Ground elevations are around 90.25mAOD in the vicinity of proposed dwellings.

Ground elevations in the local area generally decline westwards.

### 2.3 Geology and Ground Conditions

The GeoIndex provided by the British Geological Survey (BGS) identifies bedrock geology beneath the site to comprise 'Triassic Rocks (Undifferentiated) - Mudstone, Siltstone and Sandstone'. This is overlain by superficial deposits of 'Till'.

The nearest BGS borehole record, SP49SW159, is from approximately 180m southeast of the site. This recorded 'silty clay' overlying Alluvium to a depth of 2.8 m below ground level (bgl). A groundwater level was not recorded.

According to mapping produced by the Environment Agency (EA), the site is underlain by a Secondary B aquifer within the bedrock geology, and a Secondary A aquifer within the superficial deposits. The site is within an area of 'Medium' groundwater vulnerability and is not within a groundwater Source Protection Zone (SPZ).

### 2.4 Watercourses and Waterbodies

The nearest watercourse to the site is the Sketchley Brook, which is located approximately 150 m southeast of the site at its closest approach. This watercourse conveys water generally westwards in this location, before joining the River Anker.

The Ashby de la Zouch Canal is located approximately 400m east of the site.

There are no waterbodies at or in the vicinity of the site.

### 3.0 FLOOD RISK

#### 3.1 History of flooding at the site

No records of historical flooding affecting the site have been identified.

#### 3.2 Fluvial Flooding

Fluvial (river) flooding occurs when a watercourse cannot accommodate the volume of water draining into it from the surrounding catchment. The EA Flood Map for Planning identifies the site to be located wholly within Flood Zone 1 – see Figure 1:



Figure 1 – EA Flood Map for Planning

The site will therefore not affect any fluvial flow paths or floodplain storage.

There are no records of historic fluvial flooding affecting the site. The risk of fluvial flooding is considered to be very low.

#### 3.3 Surface Water Flooding

Surface water (pluvial) flooding occurs when rainwater does not drain away through the normal drainage system or soak into the ground, but instead lies on or flows over land. This can typically happen following high rainfall storm events when a drainage system is unable to accommodate the amount of surface run-off, or when ground profiles are uneven and facilitate ponding.

The site is identified to be at risk of flooding during 1 in 1000-year event according to the EA Flood Map for Planning for Surface Water. The EA's Flood Risk from Surface Water mapping is shown in Figures 2 to 4 below:



*Figure 2 - EA Flood Risk from Surface Water Mapping (1 in 30-year)*



*Figure 3 - EA Flood Risk from Surface Water Mapping (1 in 100-year)*



Figure 4 - EA Flood Risk from Surface Water Mapping (1 in 1000-year)

The EA's 'Check your long-term flood risk' mapping indicates that the site has between a 'Low' and 'High' chance of flooding between 2040 and 2060, which considers the impact of future climate change - see Figure 5. However, it is acknowledged that the information presented in this mapping '*falls short of what is required to assess planned development*', according to the EA.

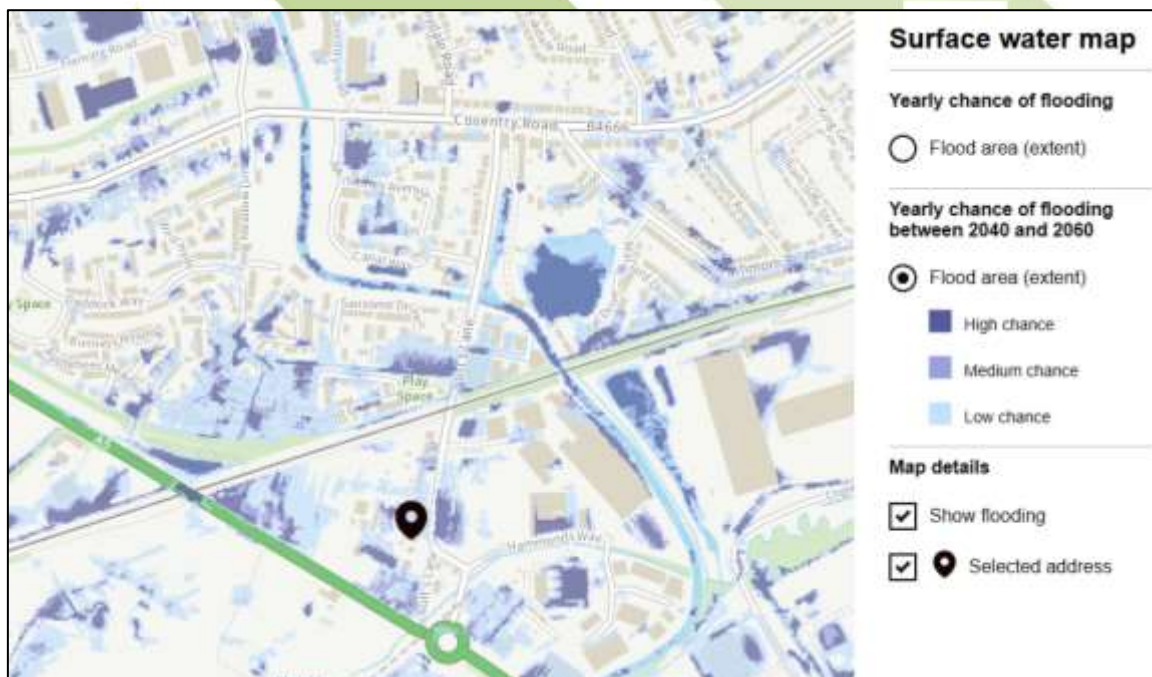


Figure 5 - EA Long-term Flood Risk from Surface Water Mapping

The Environment Agency Flood Risk from Surface Water mapping indicates that areas of the site may be susceptible to shallow surface water ponding during extreme rainfall events. However, this mapping represents a strategic national dataset and does not account for detailed local ground levels, existing drainage infrastructure or the proposed development layout.

Finished floor levels are proposed at 90.55mAOD, which is approximately 300mm above surrounding ground levels. This freeboard allowance provides resilience to potential surface water ponding and ensures that the proposed dwellings remain protected from flood risk.

Post-development, impermeable areas (roof and hardstanding) will drain to the proposed on-site surface water drainage system ensuring that the development will not increase flood risk elsewhere.

The EA mapping indicates potential for shallow surface water ponding during extreme rainfall events; however, the proposed finished floor levels and drainage strategy ensure that the development will remain safe from this source of flooding.

### **3.4 Groundwater Flooding**

Groundwater levels at the site are not currently known. No significant below ground construction works are anticipated, therefore interaction with groundwater is unlikely. Should groundwater be encountered during construction, normal safe working practices will be followed.

There are no records of groundwater flooding at or in the vicinity of the site. The risk of flooding from groundwater is considered to be low.

### **3.5 Flooding from Sewers and Drains**

Any sewerage infrastructure currently serving the site will be abandoned and replaced with a new on-site drainage system. In the unlikely event the capacity of the new on-site drainage system is exceeded, flooding would be directed away from vulnerable receptors.

Existing Severn Trent Water foul sewers are present within Nutts Lane to the east. In the unlikely event of flooding from these sewers, flows would likely be contained within the highway and enter the highway drainage system within and not affect the site.

There are no records of the site or surrounding area being affected by sewer flooding in the past. The risk of flooding from sewers and drains is considered to be low.

### **3.6 Flooding from Reservoirs, Canals and Lakes**

Flooding of reservoirs, canals and lakes occurs after the failure or breaching of a dam wall or embankment and is rare in the UK due to regulatory inspections and maintenance.

There are no waterbodies or reservoirs in the vicinity of the site. The site has not been identified to be at risk of flooding from reservoirs on EA mapping.

Flooding associated with canals is rare due to regular inspections and maintenance. Significant built development is located between the site and the Ashby de la Zouch Canal, therefore should flooding of the canal occur in this location, flood waters would enter the highway drainage or public sewerage systems and/or the Sketchley Brook and not affect the site.

The risk of flooding from reservoirs, canals and lakes is considered to be low.

### **3.7 Other Artificial Sources**

There are no other artificial sources of flooding in the vicinity of the site, therefore the risk of flooding from such sources is very low.

## 4.0 SURFACE WATER DRAINAGE STRATEGY

Surface water drainage for the proposed development will follow the SuDS hierarchy in accordance with the Non-Statutory Technical Standards for Sustainable Drainage Systems and the CIRIA SuDS Manual (C753) and based on the 1 in 100-year storm event plus a 40% allowance for climate change.

Soilscape mapping identifies the site to comprise slowly permeable clayey soils with impeded drainage. Infiltration drainage may therefore be unsuitable; however, infiltration testing will be undertaken in accordance with BRE 365 to confirm the infiltration potential of the underlying ground.

Should infiltration drainage prove feasible, surface water runoff will be managed via on-site soakaways designed in accordance with BRE 365.

If infiltration is demonstrated to be unsuitable, surface water will discharge to the existing Severn Trent Water sewer network within Nutts Lane, subject to approval under a Section 106 sewer connection application.

Greenfield runoff rates for the site have been calculated using the HR Wallingford UKSuDS Greenfield Runoff Rate Estimation Tool, based on the FEH statistical method (2025). For the site area of 0.13ha, the calculated QBAR (mean annual flood flow) is 0.5l/s.

| Parameter                     | Value                                                        |
|-------------------------------|--------------------------------------------------------------|
| Site area                     | 0.13ha                                                       |
| Method                        | FEH statistical method                                       |
| Tool used                     | HR Wallingford UKSuDS Greenfield Runoff Rate Estimation Tool |
| QBAR (mean annual flood flow) | 0.5l/s                                                       |
| 1 in 30-year runoff rate      | 1.0l/s                                                       |
| 1 in 100-year runoff rate     | 1.3l/s                                                       |
| 1 in 200-year runoff rate     | 1.5l/s                                                       |

For small developments, a minimum discharge rate of 1.0l/s is typically adopted to ensure reliable operation of flow control devices and reduce the risk of blockage. Surface water discharge will therefore be restricted to 1.0l/s, which represents the practical minimum rate and is as close as practicable to the calculated greenfield runoff rate, ensuring that the development will not increase flood risk elsewhere.

Attenuation storage will be provided within the site to restrict discharge rates and accommodate storm events up to and including the 1 in 100-year storm event plus 40% allowance for climate change.

In the unlikely event that the capacity of the surface water drainage system is exceeded during extreme storm events, exceedance flows will remain within external areas of the site and will follow the gradients away from the dwellings and neighbouring properties. Finished floor levels are set approximately 300mm above surrounding ground levels, ensuring that exceedance flows remain external to buildings and do not present a flood risk to the proposed dwellings. The drainage system will therefore ensure that the development remains safe during storm events up to the 1 in 100-year event plus 40% climate change, with exceedance routing provided for more extreme events.

Accordingly, the proposed development will remain safe from flood risk throughout its lifetime without increasing flood risk elsewhere.

The detailed design of the surface water drainage system will be undertaken by others and will be supported by infiltration testing, confirmation of impermeable areas and hydraulic design where required. The final drainage design will demonstrate compliance with the Non-Statutory Technical Standards for SuDS and will ensure that post-development runoff rates and volumes do not exceed existing greenfield conditions.

## 5.0 SUMMARY AND CONCLUSION

The proposed development comprises the construction of three detached dwellings on land off Nutts Lane, Hinckley, LE10 3EG.

Environment Agency Flood Map for Planning mapping identifies the site to lie wholly within Flood Zone 1, indicating that the site is at low risk of fluvial flooding.

Environment Agency Flood Risk from Surface Water mapping indicates that localised areas of shallow surface water ponding may occur across parts of the site during extreme rainfall events. This mapping represents a strategic national dataset and does not account for detailed local ground levels, existing drainage arrangements or the proposed site layout.

The development has therefore been designed to ensure that the proposed dwellings remain safe from potential surface water flooding. Finished floor levels are proposed at 90.55mAOD, approximately 300mm above surrounding ground levels, providing an appropriate freeboard allowance against potential surface water ponding.

Surface water runoff from the development will be managed through a sustainable drainage strategy incorporating on-site attenuation and controlled discharge in accordance with the SuDS hierarchy. Surface water discharge will be restricted to 1.0l/s, which is comparable with the calculated greenfield runoff rate for the site.

The drainage system will be designed to accommodate storm events up to and including the 1 in 100-year rainfall event plus a 40% allowance for climate change, with exceedance flows directed away from buildings and towards the site access and adjacent highway corridor along Nutts Lane.

Accordingly:

- The development will remain safe from flooding throughout its lifetime, including during extreme rainfall events.
- The proposed drainage strategy will not increase flood risk elsewhere.
- The proposals are therefore acceptable in flood risk terms in accordance with the NPPF and associated Planning Practice Guidance.

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## Appendix 1

### Proposed Site Plan

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Red Dashed Lines  
Indicate Existing  
Outbuildings to be  
Demolished

Turning  
Head

P2

P1

P2

P3

P3

Lewarne  
124

Doral

Arbien House

East  
View

Sherwood

Greenbelt

NUTTS LANE



01 5 10 20 40

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Please read this drawing in conjunction with the specification.  
Check all site dimensions prior to any construction.  
Refer any discrepancies found to the Architects.

#### Revisions

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#### Details

|                |                               |
|----------------|-------------------------------|
| Client         | A5 Property                   |
| Job Title      | Land Off Nutts Lane, Hinckley |
| Job Type       | New Residential Development   |
| Drawing Title  | Proposed Site Plan            |
| Job Number     | 365                           |
| Drawing Number | PL-03                         |
| Scale          | 1:200 A1                      |
| Status         | PLANNING                      |



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## Appendix 2

### Location Plan

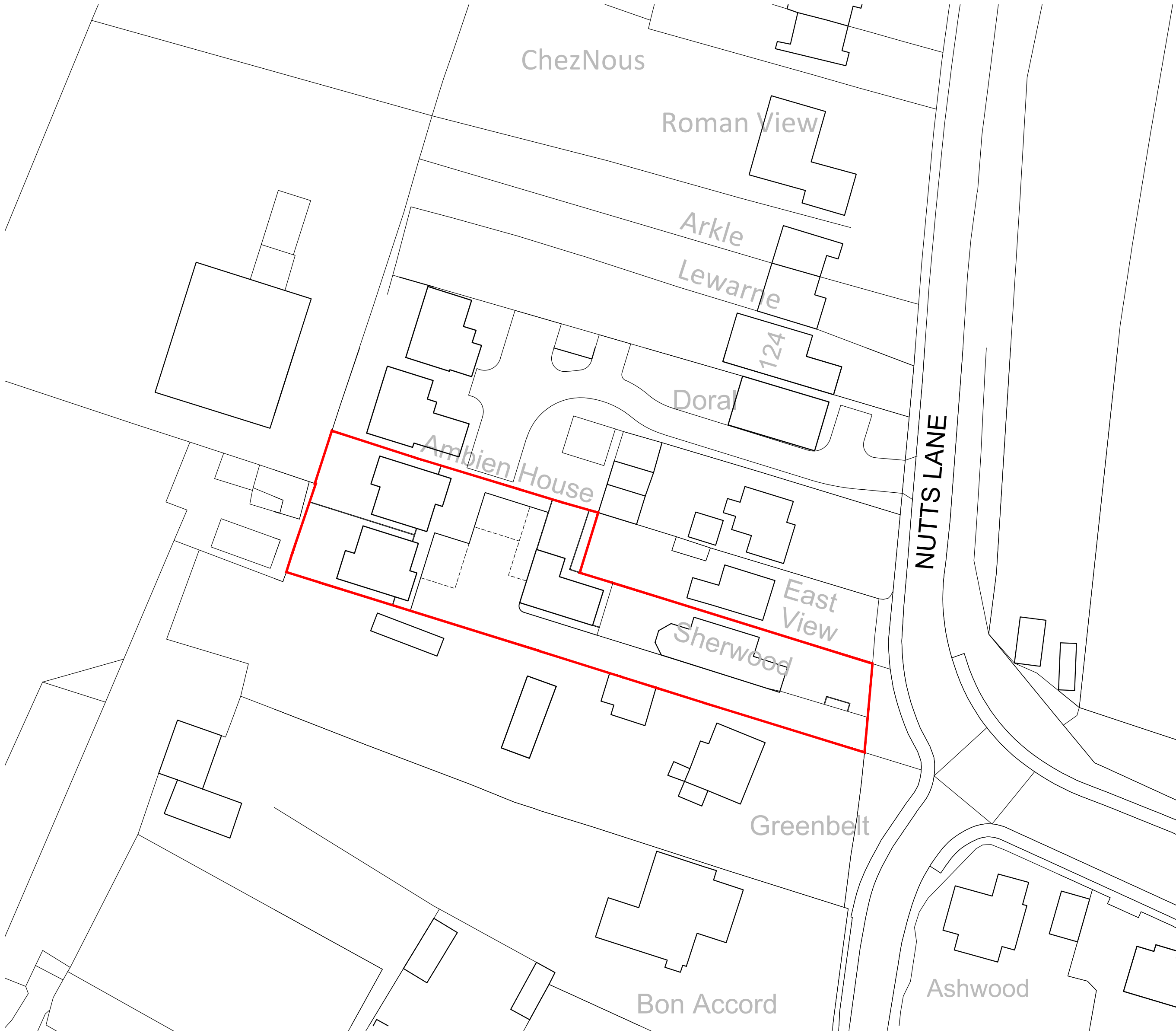
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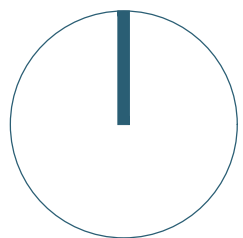
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Location Plan  
Scale 1:1250



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Block Plan  
Scale 1:500



0 10 25 50 75 100 200

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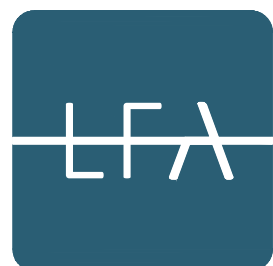
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#### Details

|                                                  |                                                                                                      |
|--------------------------------------------------|------------------------------------------------------------------------------------------------------|
| Client<br>Job Title<br>Job Type<br>Drawing Title | A5 Property<br>Land Off Nutts Lane, Hinckley<br>New Residential Development<br>Location + Block Plan |
| Job Number<br>Drawing Number<br>Scale<br>Status  | NJ420<br>PL-RM-01<br>1:1250 + 1:500 A1<br>PLANNING                                                   |



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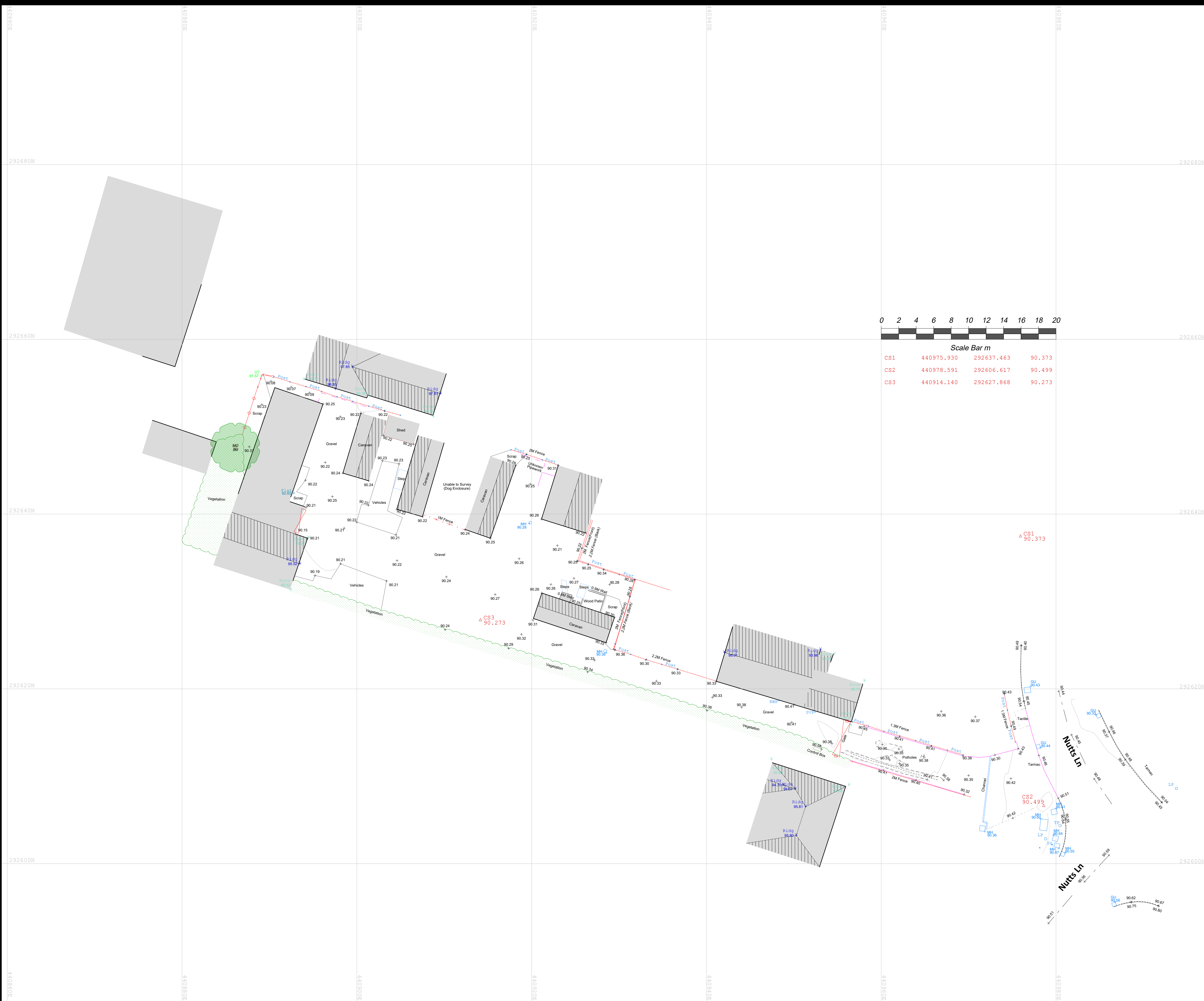
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## Appendix 3

### Topographical Survey

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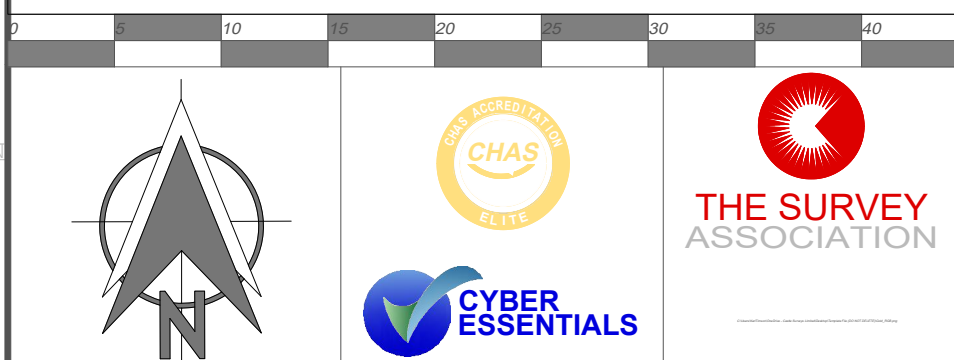


## Floor Plan Legend:

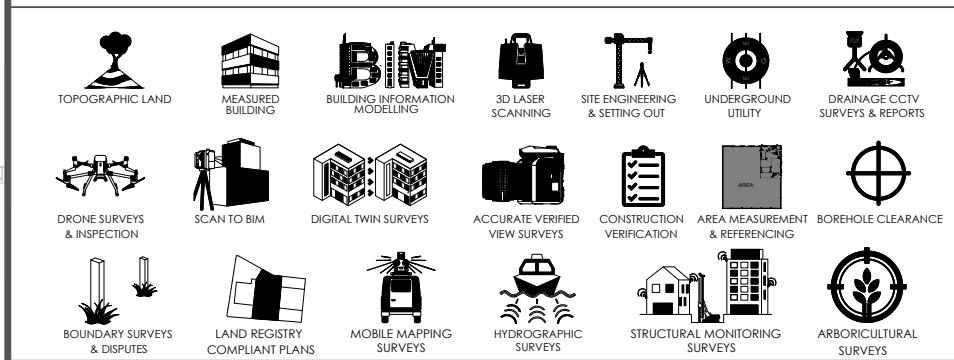
|                   |                                                                                    |
|-------------------|------------------------------------------------------------------------------------|
|                   | Window Cill & Head Height<br>SHH: SHH Height From FFL<br>HHH: Head Height From FFL |
|                   | Door Height From FFL                                                               |
|                   | Overhead Detail                                                                    |
|                   | Stairs/Step                                                                        |
|                   | Radiator                                                                           |
|                   | Ventilation / Overhead                                                             |
|                   | Access Hatch                                                                       |
|                   | TV Point                                                                           |
|                   | Phone Point                                                                        |
|                   | 13A Power Socket                                                                   |
|                   | Fused Socket                                                                       |
|                   | Shaver Socket                                                                      |
|                   | Extractor Fan                                                                      |
|                   | Lantern Light                                                                      |
|                   | Down Light                                                                         |
|                   | Light Dimmer Switch                                                                |
|                   | Light Switch                                                                       |
|                   | Fixed Lighting                                                                     |
|                   | Fire Alarm Button                                                                  |
|                   | Fire Extinction                                                                    |
| <b>Reception</b>  | Room Name                                                                          |
| <b>Carpet</b>     | Room Covering                                                                      |
| <b>2.49</b>       | Ceiling Height                                                                     |
| <b>IEL 145.80</b> | Internal Floor Level                                                               |

## Topographic Legend:

|  |                            |
|--|----------------------------|
|  | Buildings / Walls          |
|  | Building Canopy / Overhang |
|  | Concrete edge              |
|  | Kerb line                  |
|  | Centre Line                |
|  | Barrier                    |
|  | Hedge                      |
|  | Security Fence             |
|  | Panel Fence                |
|  | Gate                       |
|  | Overhead Line              |
|  | Tree / Sapling             |
|  | Tree Canopy Line           |
|  | Chambers                   |
|  | Survey Station & Name      |
|  | Bench Mark                 |
|  | Temporary Bench Mark       |
|  | Cover level                |
|  | Invert level               |
|  | Pipe invert (diameter)     |
|  | Gully                      |
|  | Manhole                    |
|  | Inspection chamber         |
|  | Trig Pillar                |
|  | Ridge                      |
|  | Eave                       |
|  | DPC                        |
|  | Floor Level                |
|  | Soft                       |
|  | TDB                        |
|  | LP                         |
|  | SP                         |
|  | Post                       |
|  | WM                         |
|  | BS                         |
|  | EIR                        |
|  | Box                        |
|  | ME                         |
|  | Flag Staff                 |
|  | Gas Meter                  |
|  | Electric Post              |
|  | Telegraph Post             |
|  | Pipe Invert                |
|  | Gully                      |
|  | Breading Post              |
|  | BT                         |
|  | BS                         |
|  | Cover (Manhole)            |
|  | EC                         |
|  | Electricity Cowl           |
|  | TL                         |
|  | Traffic Light              |
|  | HV                         |
|  | Fire Hydrant               |
|  | GAS                        |
|  | Stop Valve                 |
|  | TV                         |
|  | Gas Valve                  |
|  | Peg                        |



|                                                                                                                                                                                                                                  |                                                                                                                                                                                                     |                                                                                                                                                                                                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
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|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|



*SITE DETAILS:*

Nutts Lane  
Hinckley

TITLE: Topographical

|              |      |
|--------------|------|
| DRAWING NO.: | REV: |
| 25171-25-01  | -    |

|                  |                   |
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| <i>LEVEL DATUM:</i> 000000(15) |    | <i>Sheet Size:</i> A4 |    |

Comments:

*This plan should only be used for its original purpose. Castle Surveys Ltd does not accept any responsibility for this plan if supplied to any other party, other than the original client.*

Drainage information (where applicable) has been visually inspected from the surface and therefore should be treated as approximate only. Some services may have been omitted due

Tree information (where applicable) has been surveyed from ground level and therefore should be treated as approximate only. Advise that a tree survey should be carried out.

Roof linework (where applicable) is indicative only.

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