



JUNE 2020

Sustainability Statement

Land off Hillock Lane, Gresford, Wrexham

Iceni Projects Limited on behalf of
Norris Jones Developments Ltd

June 2020

ICENI PROJECTS LIMITED
ON BEHALF OF NORRIS
JONES DEVELOPMENTS
LTD

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Sustainability Statement
LAND OFF HILLOCK LANE, GRESFORD, WREXHAM

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1. INTRODUCTION

- 1.1 Icení Projects Ltd have been commissioned by Norris Jones Development Ltd to produce a Sustainability Statement for the proposed development of the site to provide 109 residential dwellings.

Report Objective

- 1.2 This Sustainability Statement will demonstrate how the proposed scheme will incorporate sustainable design measures to ensure it leaves a lasting sustainability legacy within the local community.
- 1.3 The report is structured to meet these guidelines as follows:
- Section 2 discusses the planning context and policies which are relevant to sustainable development;
 - Section 3 discusses the development response to the policy drivers for sustainability; and
 - Section 4 summarises the development's design response.

Site and Surroundings

- 1.4 The site located to the south of the village of Gresford, north east of the town of Wrexham, North Wales. The development site is approximately 6.1 ha and the approximate location is shown in Figure 1.1, below.

Figure 1.1 Site Location

 Approximate site location  Ownership boundary



- 1.5 The proposed scheme seeks outline planning permission for the construction of up to 109 residential dwellings, comprising a mix of 1, 2, 3, 4 and 5 bedroom houses.
- 1.6 The proposed site layout plan is provided in Appendix A1.

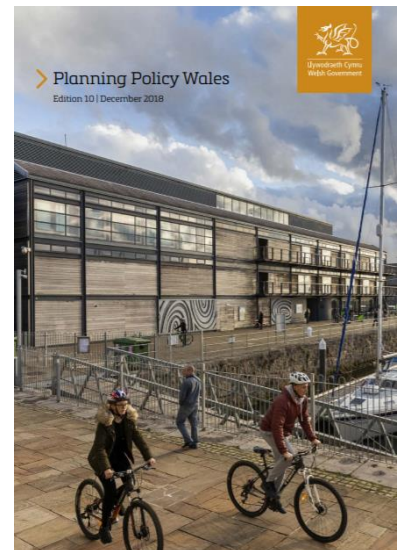
2. PLANNING AND REGULATORY CONTEXT

- 2.1 Built environment sustainability is incorporated within policy and regulation at a national, regional and local level, as set out below.

National

Planning Policies Wales (PPW)

- 2.2 PPW sets out the land use planning policies of the Welsh Government. It is supplemented by a series of Technical Advice Notes (TANs), Welsh Government Circulars, and policy clarification letters, which together with PPW provide the national planning policy framework for Wales. Accordingly, the PPW, with the latest edition published in December 2018, aims to strengthen local decision making.
- 2.3 The primary objective of PPW is to ensure that the planning system contributes towards the delivery of sustainable development and improves the social, economic, environmental and cultural well-being of Wales.



Local

Planning Application Validation Requirements

- 2.4 Wrexham County Borough Council have published a list of planning application validation requirements which must be addressed as part of the planning application process. As part of this, the Local Authority have specified the following:
- Sustainable Development: All new dwellings will need to meet the Code for Sustainable Homes. Applications must demonstrate the practical delivery through a pre-assessment statement.

Wrexham Local Development Plan 2 (LDP2) 2013 to 2028

- 2.5 Wrexham County Borough Council is preparing the Local Development Plan (LDP) which will replace the currently adopted Unitary Development Plan. The LDP will be a long-term land use and development strategy focused on achieving sustainable development.

3. SUSTAINABLE DEVELOPMENT STRATEGIC RESPONSE

- 3.1 This section presents an overview of the proposed sustainability principles that will be incorporated into the development.
- 3.2 Wrexham County Borough Council Validation Requirements state that residential developments should achieve the Code for Sustainable Homes certification. Since the publication of the validation requirements, the Code for Sustainable Homes has been withdrawn by the UK Government. Despite this, the principles outlined within the Code will be applied to the proposed development as this will provide a comprehensive review of the sustainability credentials of the proposed scheme.

Energy

Fabric Energy Efficiency

- 3.3 The first step in improving fabric energy efficiency involves addressing the external element U-values. The heat loss of different building fabric elements is dependent upon their U-value. The lower a building element's U-value, the better the level of insulation and therefore the lower the heating demand during the winter months.
- 3.4 The proposed development will integrate high levels of insulation and high performance glazing that exceed the targets stipulated within Part L of the Building Regulations. A summary of the proposed building fabric U-values is displayed in Table 3.1 below.

Table 3.1 Target U-values for residential dwellings

Building Fabric Element	(a) Part L1A:2013 threshold U-values (W/m ² K)	(b) Proposed U-values (W/m ² K)
External wall	0.30	0.15
Roof	0.20	0.10
Ground floor	0.25	0.10
Windows	2.00	1.40

- 3.5 The maximum air permeability standard for Part L compliance is 10m³/h/m² for residential developments. In order to ensure Part L compliance at fabric efficiency stage, it is proposed that the

development will significantly improve upon this, targeting an air permeability rate of 5m³/m²/h at 50Pa for all new build residential units.

Heating and Hot Water

- 3.6 In order to minimise operational energy consumption and subsequent carbon dioxide emissions, it is proposed to provide heating and hot water using high efficiency gas fired condensing boilers, with a seasonal efficiency of at least 89%.

Low or Zero Carbon Technologies

- 3.7 As the dwelling emission rate is anticipated to be lower than the target emission rate through the incorporation of building fabric that surpasses Part L target values, it is not anticipated that the proposed scheme will require the incorporation of any low or zero carbon technologies.

Lighting

- 3.8 The proposed passive design strategy will aim to minimise the dependence on artificial lighting through maximising daylight in all habitable residential space. Maximising the total glazing area will reduce the dependence on artificial lighting.
- 3.9 In addition to this, energy efficient light fittings will be installed throughout the development. All external lighting should be fitted with controls to reduce energy consumption during daylight hours.

Drying Space

- 3.10 In order to further reduce the operational energy demand, the proposals will include provision of either internal or external drying space. This will significantly reduce the requirement for the use of electric tumble dryers.

Cycle Storage

- 3.11 Cycle storage spaces will be provided for all residential dwellings for use by the occupants. This will decrease the use of cars for short journeys. Cycle stores will be adequately sized and secure.

Water

Internal Water Use

- 3.12 It is intended that internal water usage in dwellings will be limited to less than 105 litres per person per day through the installation of low flow fittings, based on the DCLG water efficiency calculator for the residential dwellings. Full details of the water calculations are provided in Appendix A2. Details of the proposed water consumption rates are displayed in Table 3.2, below.

Table 3.2 Water fitting consumption

Fitting	Consumption per use
Dual flush toilets	5 / 2 litres per flush
Wash had basin	4 litres per minute
Kitchen sink	5 litres per minute
Bath	180 litres
Showers	9 litres per minute

- 3.13 Washing machines and dishwashers are unlikely to be specified by the developers, and their water consumption has not been specified. However further reductions in water consumption can be achieved by specifying washing machines with a water consumption lower than 17 litres per kg and dishwashers with a water consumption not higher than 4.5 litres per place setting.
- 3.14 As the UK average water consumption is 149 litres per person per day, the water consumption of the proposed dwellings will be significantly lower than the UK average.

External Water Use

- 3.15 In addition to the above, in order to significantly reduce external water use, all private external amenity space will incorporate an appropriate rainwater collection system. This will reduce the demand for potable water for landscaping and planting irrigation.

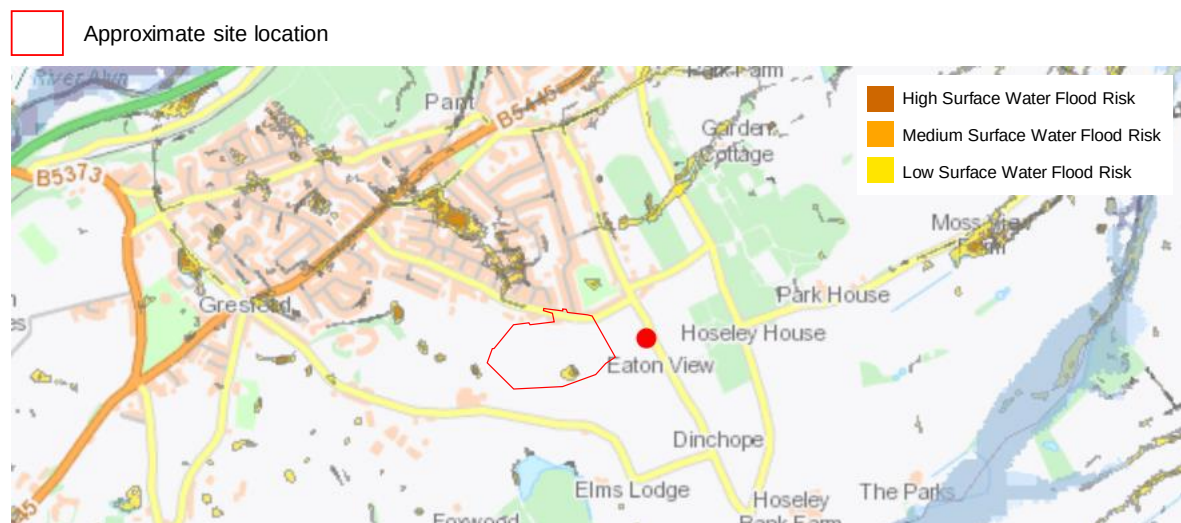
Materials

- 3.16 Consideration of construction materials can have a significant impact on the embodied energy of a development. Construction build-ups for each of the main building elements are rated from A+ to E in accordance with the BRE Green Guide to specification (A+ is the least likely to affect the environment, whereas E is the most likely to affect the environment).
- 3.17 It is assumed that most of the main building elements within the development will achieve between an A+ and a C rating, displaying the development's commitment to sustainable material choices. In addition to this, all timber used during site preparation and construction will be from FSC certified suppliers. All non-timber materials will be certified with Environmental Management Systems (ISO 14001 or BES 6001) where possible.

Surface Water Run-off

- 3.18 The proposed scheme landscape plan will effectively manage the surface water runoff from the site for the 5mm (everyday) rainfall event.
- 3.19 In addition to this, the proposed scheme has incorporated a comprehensive sustainable drainage strategy. Surface water from the proposed dwellings should be collected by rainwater harvesting butts prior to discharging into soakaways within the rear gardens where the runoff can infiltrate to ground. Surface water from the proposed adoptable highway should be conveyed into the proposed infiltration basin by oversized pipes and infiltrated to ground. These measures will ensure that all surface water runoff is managed onsite.
- 3.20 The Natural Resources Wales flood maps suggest that the development site is at negligible risk of fluvial or tidal flooding. It does show that the site has a small pocket considered to be at low risk of surface water flooding at the southern boundary, however the flood depths are projected to be below 0.6m, and the proposed surface water management plan will effectively mitigate this risk. The remainder of the site is shown to be at very low risk of surface water flooding. Additionally, the site is identified as being at negligible risk of flooding from groundwater and artificial sources, including sewers, canals and reservoirs.

Figure 3.1 Flood Map



Waste

Storage of Non-Recyclable Waste and Recyclable Household Waste

- 3.21 Dedicated external waste storage will be provided to meet the Wrexham County Borough Council waste storage requirements. In addition to this, all residential dwellings will be provided with internal storage for recyclable waste.

Construction Site Waste Management

- 3.22 A Site Waste Management Plan will be produced to minimise the impact of construction waste on the environment. The Management Plan will include benchmarks for resource efficiency, procedures to reduce hazardous and non-hazardous waste and guidance on monitoring waste streams.

Pollution

Global Warming Potential (GWP) of Insulation

- 3.23 The manufacturing process of commercially available insulation products is often responsible for the production of greenhouse gas emissions. The measure of how effective these greenhouse gas emissions are at influencing climate is termed their global warming potential (GWP). Blowing agents, used in the production of insulation, typically have a high GWP.
- 3.24 These blowing agents are used to enhance the performance of PIR insulation, by filling the cells within the insulation with a low thermal conductivity gas. This gas can be released into the atmosphere during the manufacturing process, during transit or at the end of the products life.
- 3.25 As a result of this, we recommend the specification of insulation products that have a low GWP, such as mineral wool, that can produce U-values equivalent to those specified in Table 3.1.

NO_x Emissions

- 3.26 Space heating and hot water requirements are likely to be met through highly efficient gas boilers with inherently low NO_x emissions.

Health and Wellbeing

Daylighting

- 3.27 The dwellings have been designed with the aim of maximising internal daylight to all habitable space. Fenestration design has considered maximising glazing area on all appropriate facades. This strategy should provide internal daylight levels that are consistent with the target values stated within the BRE Site Layout Planning for Daylight and Sunlight, a guide to good practice (2011).

Sound Insulation

- 3.28 The development is located within a relatively rural location. As a result of this, the potential for the proposed dwellings to experience sound pollution is limited. Despite this, all dwellings propose that airborne sound insulation will comply or exceed current Building Regulations Part E standards.

Private Space

- 3.29 Private amenity space allows future occupants to spend time outside. For this, the amenity space must be of a minimum size that allows all occupants to use the space, must be accessible to all users

and accessible to only the occupants of the designated dwellings. Based on the design of the proposed scheme, all residential dwellings have access to private amenity space.

Management

Construction Site Impacts

- 3.30 The construction phase of a development can have a number of negative environmental impacts. For this reason, in order to minimise the construction impacts of the site, the contractor will strive to set targets and monitor their activities. This will include monitoring CO₂ production through energy use and water consumption arising from site activities. Further to this, best practice techniques will be employed in respect to air pollution (dust) and water pollution (ground and surface) arising from site activities.

Security

- 3.31 An Architectural Liaison Officer (ALO) or a Crime Prevention Design Advisor (CPDA) from the local police force will be consulted at the design stage, with their recommendations incorporated into the design of the dwellings.

Ecology

Ecological Value of Site

- 3.32 The Phase 1 Habitat Survey, conducted in May 2018 (Penny Anderson Associates Ltd) states that the predominant habitat on site was improved grassland, currently grazed by cattle. The pastures were relatively species poor with very little botanical interest and dominated by grasses such as perennial rye-grass and rough meadow-grass.

Ecological Enhancement

- 3.33 The landscape architect will provide recommendations for planting to enhance the existing biodiversity onsite. The scheme will incorporate landscaped areas as well as private gardens to increase biodiversity of the proposed development site.

4. SUMMARY

- 4.1 This Sustainability Statement provides an overview as to how the design proposals for the proposed scheme will ensure the development operates in an energy efficient and sustainable manner over the lifespan of the scheme.
- 4.2 Consideration has been given to the Wrexham Local Development Plan in the formulation of this statement, aiming to set out the principles by which the scheme proposes to achieve compliance with Part L1A: 2013 of the Building Regulations in terms of carbon dioxide emissions.
- 4.3 The following energy efficiency measures are to be incorporated within the development:
- High levels of building fabric insulation to minimise heat loss;
 - High levels of air tightness to reduce heat loss through infiltration;
 - Low energy lighting in all spaces; and
 - Highly efficient gas fired boilers to provide heating and hot water.
- 4.4 In addition, the scheme proposes the inclusion of a wide range of other sustainability measures to reduce the environmental impact, including:
- Low flow fixtures and fittings to reduce potable water consumption;
 - External rainwater butts to reduce water irrigation requirements and mitigate surface water runoff;
 - Responsible treatment of construction and operational waste;
 - Ecological enhancement; and
 - Measures to ensure a positive contribution to the health and wellbeing of residents.
- 4.5 Overall, the proposals constitute sustainable development in accordance with national policy requirements and will provide a development that seeks to promote these principles in operation.

A1. SITE LAYOUT PLAN

Affordable Housing Provision

28 No. (25% of 109 No. Residential Units)

Comprising	
1 Bed Apartment	6
2 Bed Apartment	6
2 Bed Semi-Detached House	8
2 Bed Mid-Terrace House	0
3 Bed Mid-Terrace House	1
3 Bed End-Terrace House	2
3 Bed Semi-Detached House	4
4 Bed Detached House	1
5 Bed Detached House	0

Group 1	9 No.	06 07 08 09 10 11 12 13 & 14
Group 2	6 No.	25 26 27 28 29 & 30
Group 3	3 No.	46 47 & 48
Group 4	2 No.	67 & 68
Group 5	2 No.	75 & 76
Group 6	6 No.	90 90 91 92 93 & 94.

Affordable Housing Units



4 No. Apartments with communal garden space, parking and bin storage.

Existing tree T11 (A), located in garden of plot 88, to be retained.

New hedgerow to be planted along East Boundary.

Existing tree T9 (C), located in garden of plot 83, to be retained.

New planted hedgerow border strip to extend into new hedgerow along North boundary.

Area H. Open green space boundary footpath with planted hedgerow border strip along South and West boundaries.
1106.3m2 0.11063 Hectares

Overall Application Site Area
6.7134 Hectares (67134 m2)

Public Green Space

(Area required 0.4 Hectares per 50 houses)
0.8720 Hectares (8720 m2) Area Required
1.4236 Hectares (14236 m2) Area Provided

Development Land Area

(Area of application site excluding Public Green Space)
5.2898 Hectares (52898 m2)

Housing Density (Houses per Hectare)

109 Houses / Apartments
20.60 Housing Density for Development Site Area
16.23 Housing Density for overall Application Site Area

Area A. Site boundary and Footpath / Emergency Access Route
602.0m2 0.0602 Hectares

Proposed Priority Giveway arrangement with pedestrian crossing, road markings and Signage

2.4x43M Visibility Spay

New footpath to tie into existing.

Line of existing Footpath Kirb Line

3.5m wide emergency access route with bollards

Existing road widened with new road junction for site entrance.
8m wide Carriageway with R10.0m Rad. Kirb
K2.4x43M Visibility Spay to both sides.
For new junction see Engineers drawings for full details of road layout, markings and Signage.

New pavement with R6.0M at corner of Stancliff Avenue and 2.4x43M Visibility Spay with 1m offset into carriageway

Current 'SLOW' road markings in front of Sub Station to be relocated East of proposed access road. see engineers dwg.

Area B. Public green space / site boundary
140.7m2 0.01407 Hectares

Existing Elec. Sub Station with overhead wire in Easement along site boundary.

Existing trees and hedgerow along East boundary to be retained.

Area C. Open Green Space
321.0m2 0.0321 Hectares

Area D. Open Green Space / Footpath
2998.8m2 0.29988 Hectares

Area E. Open Green Space
8088.1m2 0.8088.1 Hectares

Area F. Open Green Space / Perimeter Footpath
541.9m2 0.05419 Hectares

Area G. Open green space boundary footpath with planted hedgerow border strip along South boundary
0.437.9m2 0.04379 Hectares

Public green space with new public footpath link to existing footpath route.

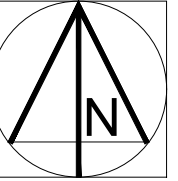
Public green space with public footpath and hedgerow along south boundary.

KEY: House Types

6 No.	1 Bed Apartment	Apartment Type 2 - Ground Floor 43.16 m2 (464 sq ft) 1.5 Parking Space per apartment
6 No. 1 Bed	2 Bed Apartment	Apartment Type 3 - First Floor 49.41 m2 (531 sq ft) overall area 47.91 m2 (515 sq ft) First Floor 1.5 Parking Space per apartment
1 No.	2 Bed Mid-Terrace	Apartment Type 1 - Ground Floor 56.87 m2 (612 sq ft) 2 Parking Spaces
14 No.	2 Bed Semi	Apartment Type 4 - First Floor 64.60 m2 (678 sq ft) overall area 61.58 m2 (662 sq ft) First Floor 2 Parking Spaces
21 No. 2 Bed	3 Bed Mid-Terrace	3 Bedroom Mid-Terrace 93.77 m2 (1009 sq ft) 3 Parking Spaces
4 No.	3 Bed End-Terrace	3 Bedroom End-Terrace 88.68 m2 (954 sq ft) 3 Parking Spaces
18 No.	3 Bed Semi	3 Bedroom 90.51m2 (974 sq ft) 3 Parking Spaces plus detached Garage
23 No. 3 Bed	4 Bed Detached	4 Bedroom - including garage 143.9 m2 (1546 sq ft) 3 Parking Spaces plus integral Garage
10 No.	4 Bed Detached	4 Bedroom 145.3 m2 (1564 sq ft) 3 Parking Spaces plus detached Garage
22 No.	5 Bed Detached	5 Bedroom 177 m2 (1905 sq ft) 4 Parking Spaces plus detached Double Garage
27 No.	5 Bed	
27 No. 5 Bed		
109 No.	Residential Total	

Existing trees and bushes, (G6# Arboricultural report) along field boundary, to be retained

Existing trees and hedgerow bushes, along existing field boundary, to be retained



PLANNING DRAWING

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Architects

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Housing Development
Land off Hillock Lane, Gresford

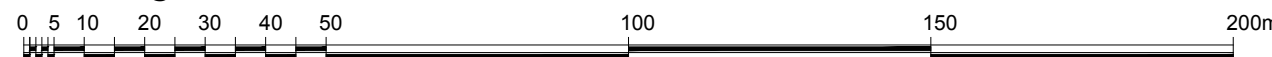
GA Site Plan
Proposed Housing Development Accommodation

DRAWING NUMBER	REVISION	DATE
4124 / SK 19	-	April 2020
		SCALE 1:1250 @ A3

GA SITE PLAN:

Proposed Housing Development Accommodation.

scale 1:1250 @ A3



A2. WATER USAGE CALCULATOR



Job no:	19-139
Date:	09/06/2020
Assessor name:	
Registration no:	N/A
Development name:	Land of Hillock Lane

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PRINTING: before printing please make sure that in "Page Setup" you have selected the page to be as "Landscape" and that the Scale has been set up to 70% (maximum)

WATER EFFICIENCY CALCULATOR FOR NEW DWELLINGS - (BASIC CALCULATOR)

House Type:		Type 1	Type 2	Type 3	Type 4	Type 5	Type 6	Type 7	Type 8	Type 9	Type 10
Description:		Typical Unit									
Installation Type	Unit of measure	Capacity/flow rate	Litres/person/day	Capacity/flow rate	Litres/person/day	Capacity/flow rate	Litres/person/day	Capacity/flow rate	Litres/person/day	Capacity/flow rate	Litres/person/day
Is a dual or single flush WC specified?		Dual		Select option:		Select option:		Select option:		Select option:	
WC	Full flush volume	5	7.30		0.00		0.00		0.00		0.00
	Part flush volume	2	5.92		0.00		0.00		0.00		0.00
Taps (excluding kitchen and external taps)	Flow rate (litres / minute)	4	7.90		0.00		0.00		0.00		0.00
Are both a Bath & Shower Present?		Bath & Shower		Select option:		Select option:		Select option:		Select option:	
Bath	Capacity to overflow	180	19.80		0.00		0.00		0.00		0.00
Shower	Flow rate (litres / minute)	9	39.33		0.00		0.00		0.00		0.00
Kitchen sink taps	Flow rate (litres / minute)	5	12.56		0.00		0.00		0.00		0.00
Has a washing machine been specified?		No		Select option:		Select option:		Select option:		Select option:	
Washing Machine	Litres / kg		17.16		0.00		0.00		0.00		0.00
Has a dishwasher been specified?		No		Select option:		Select option:		Select option:		Select option:	
Dishwasher	Litres / place setting		4.50		0.00		0.00		0.00		0.00
Has a waste disposal unit been specified?		No		Select option:		Select option:		Select option:		Select option:	
Water Softener	Litres / person / day		0.00		0.00		0.00		0.00		0.00
Calculated Use		114.5		0.0		0.0		0.0		0.0	
Normalisation factor		0.91		0.91		0.91		0.91		0.91	
Code for Sustainable Homes	Total Consumption	104.2		0.0		0.0		0.0		0.0	
	Mandatory level	Level 3/4		-		-		-		-	
Building Regulations 17.K	External use	5.0		5.0		5.0		5.0		5.0	
	Total Consumption	109.2		0.0		0.0		0.0		0.0	
	17.K Compliance?	Yes		-		-		-		-	

A3. GENERAL NOTES

- A3.1 The report is based on information available at the time of the writing and discussions with the client during any project meetings. Where any data supplied by the client or from other sources have been used it has been assumed that the information is correct. No responsibility can be accepted by Iceni Projects Ltd for inaccuracies in the data supplied by any other party.
- A3.2 The review of planning policy and other requirements does not constitute a detailed review. Its purpose is as a guide to provide the context for the development and to determine the likely requirements of the Local Authority.
- A3.3 No site visits have been carried out, unless otherwise specified.
- A3.4 This report is prepared and written in the context of an agreed scope of work and should not be used in a different context. Furthermore, new information, improved practices and changes in guidance may necessitate a re-interpretation of the report in whole or in part after its original submission.
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