FLOOD RISK ASSESSMENT
FOR RESIDENTIAL DEVELOPMENT ON
BIRD'S DROVE, SUTTON ST JAMES

FINAL REPORT

ECL1830/SWANN EDWARDS ARCHITECTURE

DATE JUNE 2026

ELLINGHAM CONSULTING LTD
Email: tim@ellinghamconsulting.co.uk

CONTENTS

1.0 INTRODUCTION

2.0 SITE LOCATION AND DESCRIPTION
- 2.1 Site Location
- 2.2 Existing Site
- 2.3 Proposed Development
- 2.4 Local Development Documents
- 2.5 Available Flood Risk Information

3.0 FLOOD RISK VULNERABILITY
- 3.1 The Sequential and Exception Test
- 3.2 Vulnerability Classification
- 3.3 Application of the Sequential Test and Exception Test

4.0 SITE SPECIFIC FLOOD RISK
- 4.1 Local Flood Assets
- 4.2 Sources of Flooding
- 4.3 Probability of Flooding
- 4.4 Historic Flooding
- 4.5 Climate Change
- 4.6 Residual Risks

5.0 FLOOD RISK MITIGATION
- 5.1 Summary of Risks
- 5.2 Mitigation Measures

6.0 CONCLUSIONS

ATTACHMENT 1 – Proposed Site Plan & Location Plan (Dwg SE-2475 PP1000)

– Proposed Plans (Dwg SE-2475 PP1100)

DISCLAIMER

This document has been prepared solely as a Flood Risk Assessment in support of a planning application for a residential development on Bird's Drove, Sutton St James. "Ellingham Consulting Ltd" accepts no responsibility or liability whatsoever for any use made of this document other than by the client Mr S Almey for the purposes it was originally commissioned and prepared. All comments and opinions made are based upon information available to "Ellingham Consulting Ltd" during the necessary investigative process, and the conclusions and recommendations, could therefore, differ in the event of material subsequently being found erroneous, incomplete, or misleading. "Ellingham Consulting Ltd" therefore, accepts no liability should this prove to be the case.

1.0 INTRODUCTION

This Flood Risk Assessment has been prepared in accordance with National Planning Policy Framework (NPPF) and supporting planning practice guidance (PPG) on Flood Risk and Coastal Change.

In areas at risk of flooding or for sites of 1 hectare or more, developers are required to undertake a site-specific Flood Risk Assessment to accompany an application for planning permission. This Flood Risk Assessment has been produced on behalf of Mr S Almey in respect of a development that consists of the change of use of an agricultural building to form three residential dwellings on Bird's Drove, Sutton St James.

A planning application for the proposed development is to be submitted by Swann Edwards Architecture.

2.0 SITE LOCATION AND DESCRIPTION

2.1 Site Location

The site is located on Bird's Drove, Sutton St James, Wisbech, PE12 0JY. The National Grid Reference of the site is 53876/31770.

The location of the site is shown in Figure 1.



Figure 1 – Location Plan (© OpenStreetMap contributors)

2.2 Existing Site

The site is on the western side of Bird's Drove approximately 150m south of the junction with Broad Gate. The site comprises an agricultural building and the surrounding land. The site has an existing access to Bird's Drove. There is a dwelling to the north of the site. The area of development is 0.08 hectares.

Environment Agency LiDAR shows that the site is flat and that ground levels around the building are between +1.9m OD and +2.2m OD. The carriageway level of Bird's Drove adjacent to the site is +2.3m OD.

The site is in the North Level Internal Drainage Board (IDB) District. Surface water at the site would naturally drain through soakaway and hence to the IDB drain system. There are riparian drains on the field boundaries to the north and south of the site and an IDB Watercourse, Taylor's Drove Extension, 175m south of the site.

The online British Geological Survey maps indicate that the site is likely to be underlain by West Walton Formation Mudstone and Siltstone. The bedrock is shown to be overlain with superficial deposits of clay and silt.

2.3 Proposed Development

The proposed development consists of the change of use of an agricultural building to form three dwellings. The dwellings will be single storey. A Site Plan for the proposed development is provided in Attachment 1.

2.4 Local Development Documents

The South East Lincolnshire Local Plan 2011 – 2036, adopted in March 2019, is the Local Plan for the district. Policy 4: Approach to Flood Risk states the requirements for flood risk reduction.

The South East Lincolnshire Level 1 and Level 2 Strategic Flood Risk Assessment (SFRA) was prepared in June 2017.

The Joint Lincolnshire Flood Risk and Drainage Management Strategy has been prepared by Lincolnshire County Council as the Lead Local Flood Authority. The purpose of the Strategy is to increase the safety of people across Lincolnshire by reducing the number of people at risk of flooding, increasing the resilience of local communities, and reducing the impact of flooding.

2.5 Flood Zones

An extract from the Environment Agency Flood Map for Planning is shown in Figure 2. The site is located within Flood Zone 3, an area with a high probability of flooding.

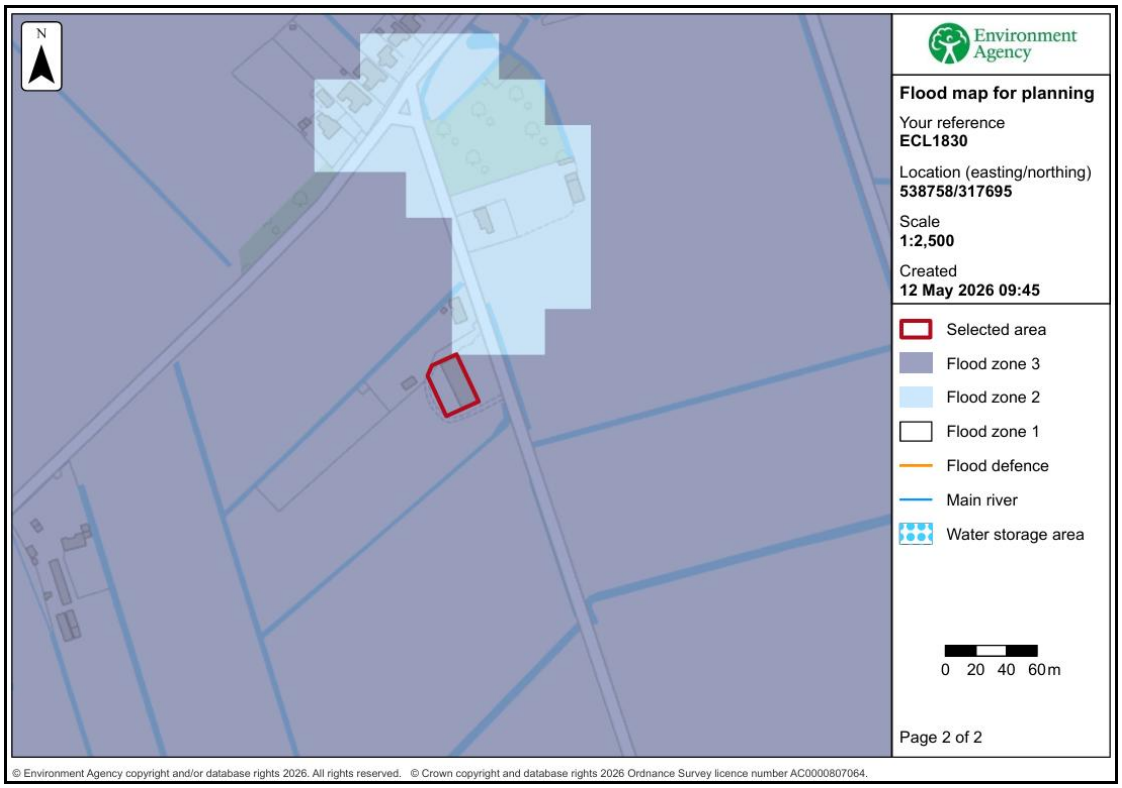


Figure 2 – Environment Agency Flood Map for Planning

The Environment Agency Long Term Flood Risk maps provide an indication of the risk from the primary sources of flooding. The details provided with these maps are summarised in Table 1. The depth of flooding identified is the maximum depth that occurs during a low chance (between 0.1% and 1% chance each year) event.

	Present Day		2050 Epoch	
	Chance of Flooding	**Depth (Low chance)**	**Chance of Flooding**	**Depth (Low chance)**
Rivers and the Sea	The site has a low chance (between 0.1% and 1% chance each year)	No data available	No data available	No data available
Surface Water	An isolated area on the eastern side of the building has a low chance (between 0.1% and 1% chance each year)	Below 0.2m.	An isolated area on the eastern side of the building has a medium chance (between 1% and 3.3% chance each year)	To 0.2m
Reservoir	Outside of the area at risk.			

Table 1 – Environment Agency Long Term Flood Risk Maps

The LiDAR shows that the isolated area with a chance of surface water flooding is a localised depression.

Table 2 shows the level of risk at the site within the South East Lincolnshire SFRA.

SFRA Map	Present Day	2116
Residual Flood Hazard Map for the 1% fluvial and 0.5% tidal event	The site is outside the 'Low Hazard' area	The site is outside the 'Low Hazard' area
Residual Peak Depth Map for the 1% fluvial and 0.5% tidal	The site is outside the area at risk	The site is outside the area at risk

Table 2 – Flood Risk within SFRA Maps

3.0 FLOOD RISK VULNERABILITY

3.1 The Sequential and Exception Test

The NPPF requires the application of a Sequential Test to ensure that new development is in areas with the lowest probability of flooding.

The Exception Test is a method to demonstrate and help ensure that flood risk to people and property will be managed, while allowing necessary development to go ahead in situations where suitable sites at lower risk of flooding are not available.

3.2 Vulnerability Classification

Table 2 of the PPG Flood Risk and Coastal Change categorises different types of uses and development according to their vulnerability to flood risk. The proposed development is covered by the description of buildings used for dwellings and is classified as 'More Vulnerable'.

Table 3 of the PPG Flood Risk and Coastal Change sets out Flood Risk Vulnerability and flood zone 'compatibility'. The site is within Flood Zone 3 and the development is 'More Vulnerable' therefore it is necessary to complete the Exception Test.

PPG Flood Risk and Coastal Change defines that the lifetime of the development in terms of flood risk and coastal change is 100 years.

3.3 Application of the Sequential Test and Exception Test

It is for the Local Planning Authority, using the evidence provided and taking advice from the Environment Agency as appropriate, to consider whether an application passes the Sequential Test.

Paragraph 033 of planning practice guidance (PPG) on Flood Risk and Coastal Change states that 'The Sequential Test does not need to be applied for applications for Change of Use (except for a change of use to a caravan, camping or chalet site, or to a mobile home or park home site)'.

Paragraph 048 of the PPG states that 'A Change of Use may involve an increase in flood risk if the vulnerability classification of the development is changed. In such cases, the applicant will need to show in their flood risk assessment that future users of the development will not be placed in danger from flood hazards throughout its lifetime.' The mitigation measures proposed in Section 5.2 of this flood risk assessment are such that risks to future users are mitigated.

The Exception Test requires consideration of the wider sustainability benefits of a development and that the development would be safe and residual risks managed.

The Local Plan has a target of a net increase of at least 11,681 dwellings in South Holland over the 25-year local plan period. The Plan considers this new housing is

required to ensure the sustainability of the Local Plan area. The proposed development will contribute to this target.

Section 5 of this Flood Risk Assessment describes the flood mitigation measures and the management of the residual risks, demonstrating that this development will be safe and not increase flood risk elsewhere. The development is considered to pass the Exception Test.

4.0 SITE SPECIFIC FLOOD RISK

4.1 Local Flood Assets

The site is 7.7km west of the tidal River Nene. The site is protected by the River Nene tidal defences between Wisbech and Sutton Bridge. The River Nene is the responsibility of the Environment Agency.

There is a long-term strategy for the maintenance of the Environment Agency defences which is reviewed and updated periodically.

There is an extensive local drainage network managed by North Level IDB. There is an IDB Drain 175m south of the site. The site and the surrounding land are within the Tydd catchment and drain to the North Level Main Drain. The North Level Main Drain discharges into the tidal River Nene at Tydd Pumping Station. The site is 3.8km north west of the North Level Main Drain.

During the operation and maintenance of its pumping stations, associated structures and channel systems, the IDB seeks to maintain a general standard capable of providing flood protection to its district. A routine maintenance programme is in place to ensure that the Boards assets are commensurate with the standard of protection that is sought.

Current maintenance standards of the South Holland Internal Drainage Board and the Environment Agency are generally good.

4.2 Sources of Flooding

A summary of the sources of flooding is provided in Table 1.

Source of Flooding	Level of Risk
Drainage Network Flooding	The risk is assessed in Section 4.3.
Surface Water Flooding	A localised depression on the eastern side of the building has a chance of surface water flooding.
Fluvial Flooding	The risk is assessed in Section 4.3 and 4.5.
Tidal Flooding	The risk is assessed in Section 4.3 and 4.5.
Reservoir Flooding	Based upon the EA maps the site is not at risk of flooding from reservoirs.
Groundwater Flooding	There is no evidence to suggest the site is at risk of groundwater flooding.

Table 1 – Sources of Flooding

4.3 Probability of Flooding

The probability of flooding associated with blockages in the South Holland IDB drainage system is low due to the maintenance standards achieved and managed by the IDB. Failure of Tydd Pumping Station would lead to an increased level of risk in the catchment.

Through the operation and maintenance of the pumping stations and the channel system the Board seek to maintain a general standard capable to providing flood protection to agricultural land and developed areas of 1 in 20 years and 1 in 100 years, respectively. The risk associated with flood events that exceed the standard of protection provided is lowered due to the South Holland IDB main drains incorporating freeboard. This freeboard provides storage during the exceedance events.

The site benefits from defences on the River Nene that provide protection during a 0.5% annual probability (1 in 200 chance each year) tidal event and a 1% annual probability (1 in 100 chance each year) fluvial event.

4.4 Historic Flooding

During the preparation of this assessment, no evidence was discovered of the site being flooded.

4.5 Climate Change

Climate change is likely to impact the site through increased rainfall intensity and duration affecting the local drainage network and increased flood levels in the River Nene.

The River Nene tidal defences have been designed to include an allowance for climate change.

In summary the existing systems and defences are appropriate for the design life of the development (i.e., 100 years).

4.6 Residual Risk

There is a residual risk of flooding in the vicinity of the site should a breach of the tidal defences occur. The South East Lincolnshire SFRA includes maps demonstrating the residual peak depth in 2116. An extract from this map is shown in Figure 3 below. When climate change allowances are applied to the 1% annual probability (1 in 100 chance each year) fluvial event and 0.5% annual probability (1 in 100 chance each year) tidal event the site is not at risk during a breach.

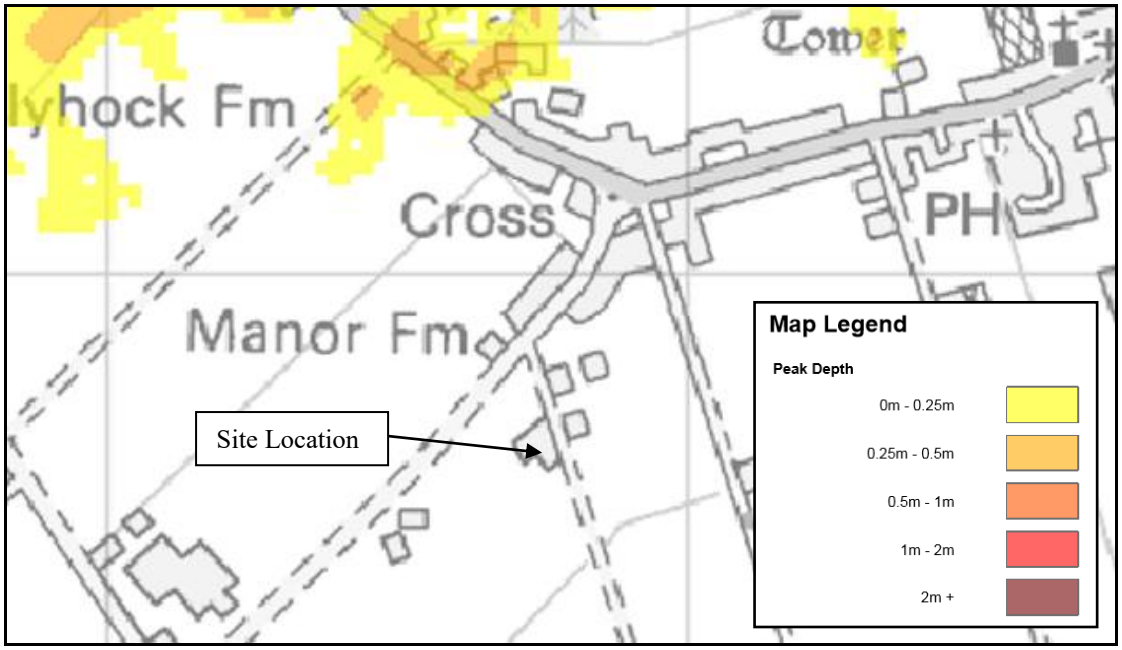


Figure 3 – SFRA 2116 Residual Peak Depth Map

5.0 FLOOD RISK MITIGATION

5.1 Summary of Risks

The probability of this development flooding from localised drainage systems is low. Failure of Tydd Pumping Station could lead to an increased level of risk within the IDB catchment.

The probability of the site flooding from any Environment Agency system is less than 1% annual probability (1 in 100 chance each year) because of the standards of the existing flood defences. Over time there will be a gradual increase in risk to the site due to climate change. During the design life of the development, it is not anticipated that the site would flood.

The SFRA considers the residual risk associated with overtopping and a breach in the defences in 2116. The maps show that the site is not at risk.

There will be no increase in impermeable area associated with the development so there is no potential that flood risk will be increased elsewhere.

5.2 Mitigation Measures

The site has a low 'actual risk' of flooding. It is recommended that the floor level of the dwellings is a minimum of 0.3m above surrounding ground level. Furthermore, it is recommended that there is 0.3m of flood resilient construction above finished floor level.

The developer should ensure that the occupiers of the dwellings are sufficiently aware of the risk of flooding, and the standard of the existing defences. The Environment Agency operates a flood warning system for properties at risk of flooding to enable householders to protect life or take actions to manage the effect of flooding on property. Floodline Warnings Service is a national system run by the Environment Agency for broadcasting flooding warnings. The occupiers of the dwellings should register to receive flood warnings.

Should there be a failure of Tydd Pumping Station Pumping Station and conditions were such to put properties and land at risk of flooding, the Internal Drainage Board would take emergency action to maintain the drainage level of service by using temporary pumping equipment.

It is recommended that surface water run-off is managed so that stormwater from the site will not affect any adjoining properties or increase the flood risk elsewhere.

6.0 CONCLUSIONS

As a result of the assessment, the following conclusions have been reached.

- The proposed development consists of the change of use of an agricultural building to form three single storey dwellings at Bird's Drove, Sutton St James.

- The site is located within an Internal Drainage Board catchment and through the operation and maintenance of the pumping stations and the channel system the Board seek to maintain a general standard capable to providing flood protection to agricultural land and developed areas of 1 in 20 and 1 in 100 years, respectively.

- The proposed development is in Flood Zone 3. The site benefits from defences on the tidal River Nene that provide protection during the 0.5% annual probability (1 in 200 chance each year) tidal event including an allowance for climate change. The site is not at risk during a breach of the tidal defences.

- It is recommended that the floor level of the dwellings is a minimum of 0.3m above surrounding ground level with 0.3m of flood resilient construction above finished floor level.

- The development passes the Sequential Test and Exception Test and is therefore suitable for the proposed location.

ATTACHMENT 1

PROPOSED SITE PLAN & LOCATION PLAN
(DWG SE-2475 PP1000)

PROPOSED PLANS
(DWG SE-2475 PP1100)

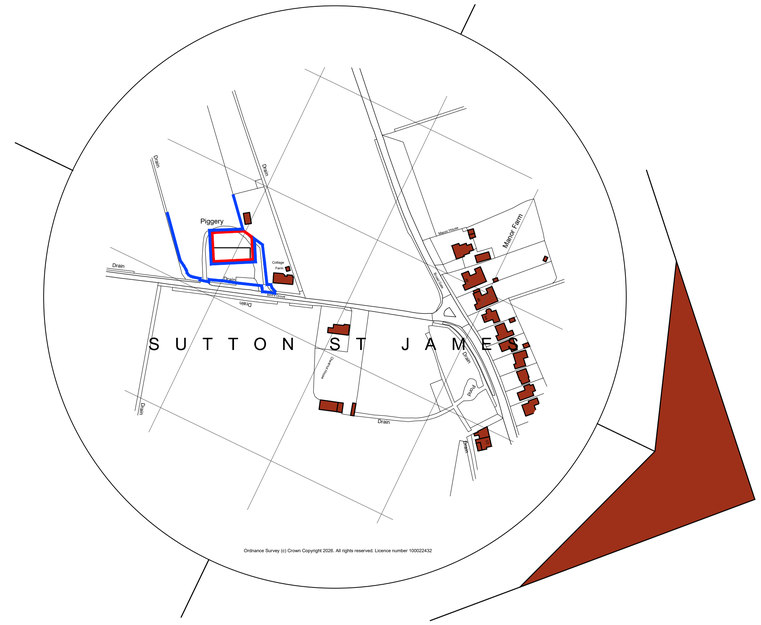


Site Plan
Scale: 1:500

0 5 10 15 20
metres

SITE PLAN KEY

- Indicates existing site access
- Indicates surveyed barn to be converted
- Indicates buildings taken from OS map
- Indicates unsurveyed trees and hedging
- Indicates unsurveyed trees and hedging to be felled/cleared



Location Plan
Scale: 1:2500

0 25 50 75 100
metres

General Notes

1. All dimensions are shown in 'mm' unless otherwise stated.
2. The contractor, sub-contractors and suppliers must verify all dimensions on site prior to the commencement of any work.
3. This drawing is to be read in conjunction with all relevant engineers and specialist sub-contractors drawings and specifications.
4. Any discrepancies are to be brought to the designers attention.

Status

FOR PLANNING

SWANN EDWARDS
ARCHITECTURE
PART OF Collective BUILT ENVIRONMENT COLLECTIVE

Swann Edwards Architecture Limited, Black Barn, Fen Road, Guyhirn, Wisbech, Cambs, PE13 4AA
t 01945 450694 e info@swannedwards.co.uk w www.swannedwards.co.uk

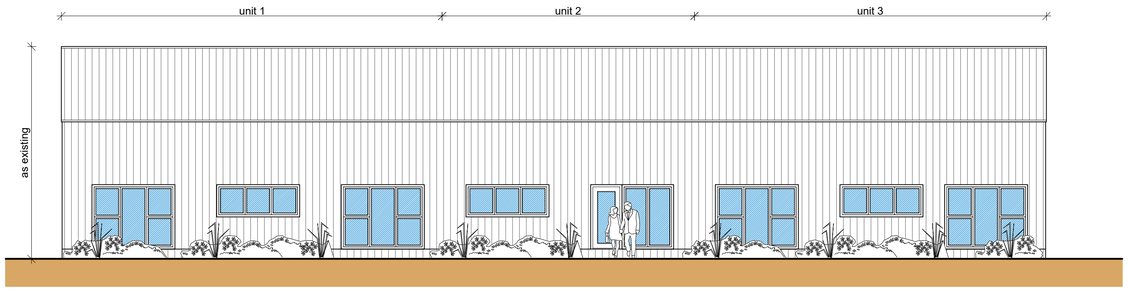
Job Title
Proposed Barn Conversion at Bird's Drove, Sutton St James, Spalding, PE12 0JY

Date	Drawn by
March 2026	GT
	Checked by: GL

Drawing Title
Planning Drawing Proposed Site Plan & Location Plan

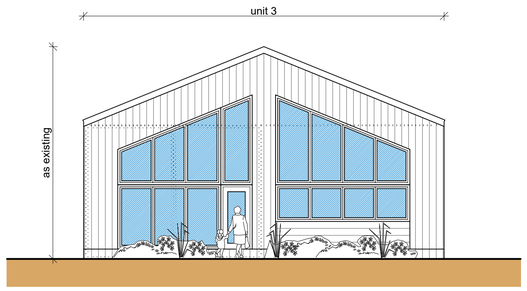
Job No.	Sheet Size
SE-2475	A1
Dwg No. PP1000	Revision

Swann Edwards Architecture Limited ©



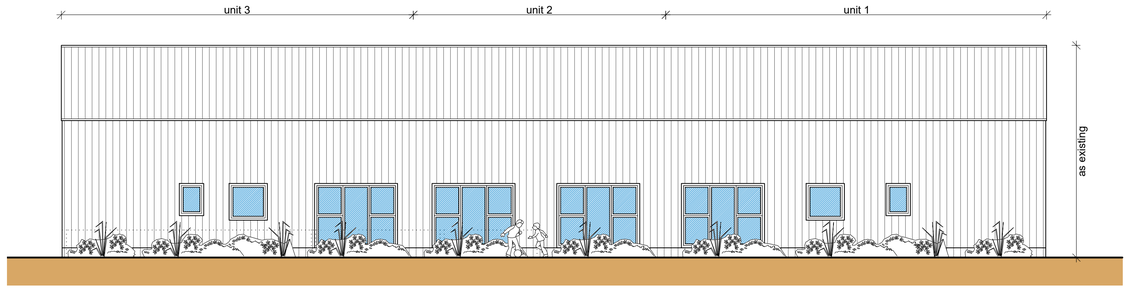
Front Elevation (E)
Scale: 1:100

0 1 2 3 4
metres



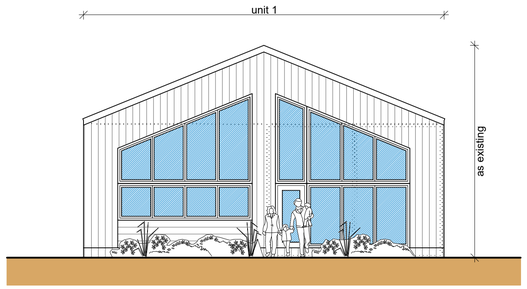
Side Elevation (N)
Scale: 1:100

0 1 2 3 4
metres



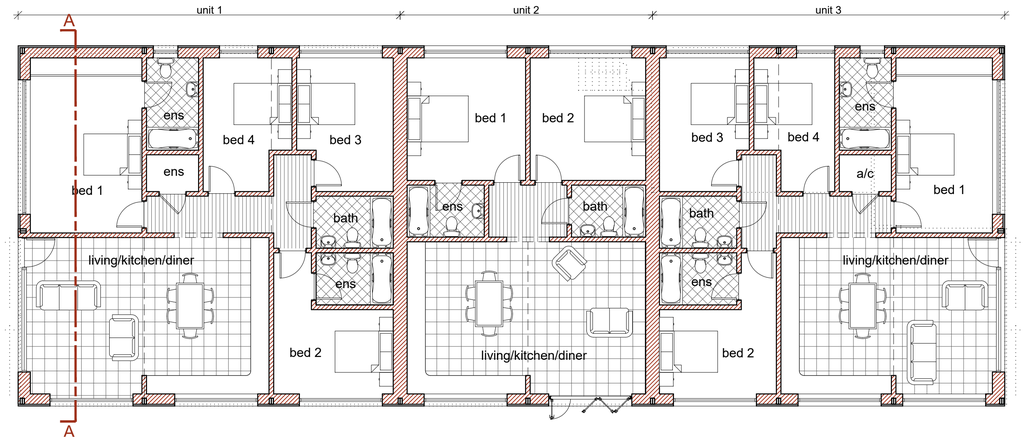
Rear Elevation (W)
Scale: 1:100

0 1 2 3 4
metres



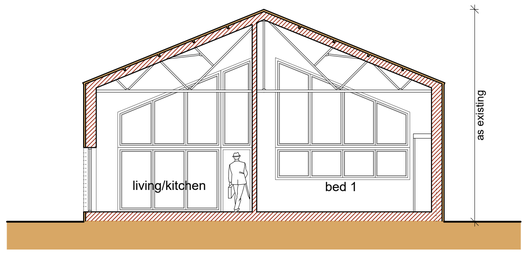
Side Elevation (S)
Scale: 1:100

0 1 2 3 4
metres



Floor Plan
Scale: 1:100

0 1 2 3 4
metres



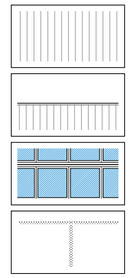
Section A-A
Scale: 1:100

0 1 2 3 4
metres

General Notes

1. All dimensions are shown in 'mm' unless otherwise stated.
2. The contractor, sub-contractors and suppliers must verify all dimensions on site prior to the commencement of any work.
3. This drawing is to be read in conjunction with all relevant engineers and specialist sub-contractors drawings and specifications.
4. Any discrepancies are to be brought to the designers attention.

ELEVATION KEY



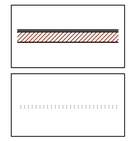
Indicates metal sheet cladding

Indicates metal sheet roof cladding

Indicates proposed joinery

Indicates features to be demolished

WALL KEY



Indicates existing walls to be thermally upgraded internally

Indicates existing walls to be demolished

Status

FOR PLANNING

SWANN EDWARDS ARCHITECTURE

PART OF Collective BUILT ENVIRONMENT COLLECTIVE

Swann Edwards Architecture Limited, Black Barn, Fen Road, Guyhirn, Wisbech, Cambs, PE13 4AA
t 01945 450694 e info@swannedwards.co.uk w www.swannedwards.co.uk

Job Title
Proposed Barn Conversion at Bird's Drove, Sutton St James, Spalding, PE12 0JY

Drawing Title
Planning Drawing
Proposed Plans

Date	Drawn by
March 2026	GT
	Checked by GL

Job No.	Sheet Size
SE-2475	A1
Dwg No. PP1100	Revision

Swann Edwards Architecture Limited ©