

**FLOOD RISK ASSESSMENT
FOR CHANGE OF USE AT
DORCETTE HOUSE, LITTLE LANE, WHAPLODE**

FINAL REPORT

ECL1056/OGLESBY & LIMB

DATE JUNE 2023

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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 DPS Education Ltd in respect of a development that consists of a change of use of a residential dwelling to form a Special Educational Needs School at Dorcette House, Little Lane, Whaplode.

A planning application for the proposed development is to be submitted by Oglesby & Limb Ltd.

2.0 SITE LOCATION AND DESCRIPTION

2.1 Site Location

The site is located at Dorcette House, Little Lane, Whaplode, Spalding, PE12 6RU. The National Grid Reference of the site is 53199/32268.

The location of the site is shown in Figure 1.

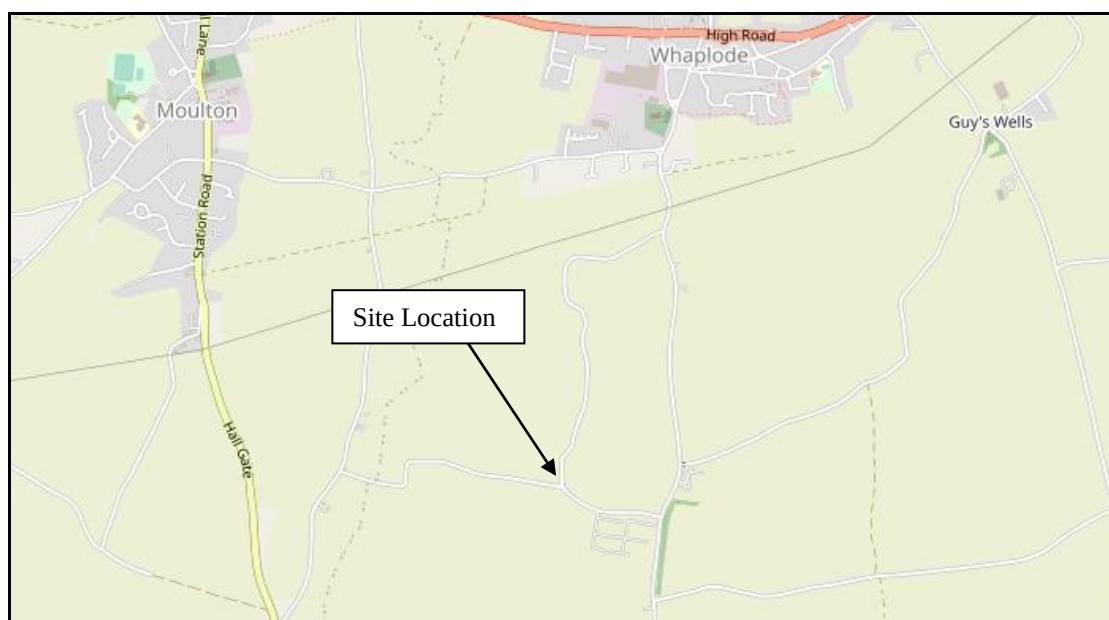


Figure 1 – Location Plan (© OpenStreetMap contributors)

2.2 Existing Site

The site is on the western side of Thorpe's Lane. Little Lane forms the southern boundary of the site. The site is a residential dwelling that consists of a house, garage block, pool hall and the surrounding land. The site is surrounded by agricultural land. The site area is approximately 0.45 hectares.

A topographic survey has been undertaken and is provided in Attachment 1. Ground levels around the existing buildings are typically between +3.4m OD and +3.5m OD. The finished floor levels of the buildings are between +3.56m OD and +3.68m OD. The other parts of the site are typically between +3.1m OD and +3.2m OD.

The site is in the South Holland Internal Drainage Board (IDB) District. Surface water at the site would naturally drain through soakaway and hence to the IDB drain system. There is a riparian drain on the northern side of Little Lane on the southern boundary of the site and an IDB Ordinary Watercourse on the eastern side of Thorpe's Lane adjacent to 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 a residential dwelling to form a Special Educational Needs School including the alteration and extension to the buildings. The proposed site layout is provided in Attachment 2.

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 western boundary of the site is located within Flood Zone 3, an area with a high probability of flooding, however the buildings at the site are in Flood Zone 1.

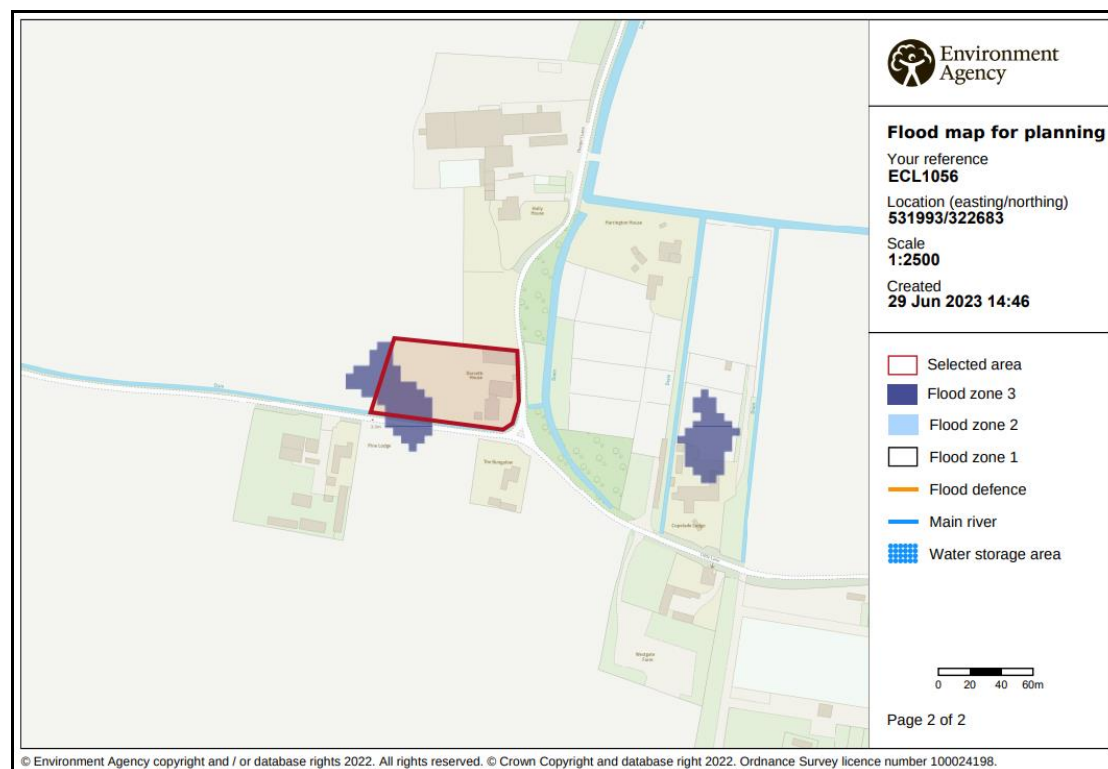


Figure 2 – Environment Agency Flood Map for Planning

The Environment Agency Long Term Flood Risk maps show that:

- part the site has a medium risk of flooding from rivers or the sea (annual probability between 1% and 3.3%);
- the western part of the site has a low risk of surface water flooding (annual probability between 0.1% and 1%); and
- the site is not within an area at risk of reservoir flooding.

Table 1 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 1 – 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 educational establishments 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'. Part of the site is in 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.

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 development site is within the South Holland Internal Drainage Board which is protected by the River Welland tidal defences between Spalding and Fosdyke. The defences are 6.1km north west of the site and minimum embankment levels of +7.0m OD.

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 South Holland IDB. There is an IDB Ordinary Watercourse on the eastern side of Thorpe's Lane adjacent to the site. The site and surrounding land are within the Little Holland catchment and drains to the Little South Holland Drain which discharges to the South Holland Main Drain at the Little Holland Pumping Station. The South Holland Main Drain discharges to the tidal River Nene at the Sutton Bridge Tidal Sluice.

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 2.

Source of Flooding	Level of Risk
Drainage Network Flooding	The risk is assessed in Section 4.3.
Surface Water Flooding	Based upon the EA maps the risk is low.
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	The risk is assessed in Section 4.6.
Groundwater Flooding	There is no evidence to suggest the site is at risk of groundwater flooding.

Table 2 – Sources of Flooding

4.3 Probability of Flooding

The western part of the site is at risk of surface water flooding during low risk events (annual probability 0.1%) with depths below 0.3m. The eastern part of the site and the buildings are not at risk of surface water 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 Little Holland Pumping Station would lead to an increased level of risk in the IDB 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 is within an area benefitting from defences. The River Welland tidal defences provide protection during a 0.5% annual probability (1 in 200 chance each year) 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 tide levels.

The flood level in the River Welland at Fosdyke during the 0.5% annual probability (1 in 200 chance each year) event inclusive of climate change to 2069 is estimated to be 6.41m AOD. The minimum defence level of the River Welland embankments is 7.0m AOD.

In summary the site is not at risk for the design life of the development (i.e., 100 years).

4.6 Residual Risk

The South East Lincolnshire SFRA includes maps demonstrating the impact of climate change in 2116. The Residual Peak Depth maps within the SFRA indicate the maximum flood depths associated with a breach of the tidal defences. These show that when the climate change allowances are applied to the combination of a 1%

annual probability (1 in 100 chance each year) fluvial event and a 0.5% annual probability (1 in 200 chance each year) tidal event the site is not at risk.

5.0 FLOOD RISK MITIGATION

5.1 Summary of Risks

The western part of the site is in Flood Zone 3 and at risk of surface water flooding however the eastern part of the site, which includes the buildings that are the subject of the change in use, is in Flood Zone 1 and not at risk of surface water flooding.

The probability of this development flooding from localised drainage systems is low. Failure of Little Holland Pumping Station could lead to an increased level of risk at the site.

The probability of the site flooding from any Environment Agency system is less than 0.5% annual probability (1 in 200 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 from overtopping of the defences.

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

The proposed arrangement increases the impermeable area and therefore there will be an increased volume of surface water that has the potential to increase flood risk.

5.2 Mitigation Measures

Based upon the information available during the preparation of this flood risk assessment:

- there are no recommendations for existing floor levels;
- the finished floor levels of the extensions should be at a level not lower than the existing floor level; and
- the alterations and refurbishment should consider flood resilient construction to a height 0.3m above finished floor level.

The developer should ensure that the person responsible for the management of the school is 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 school should register to receive flood warnings.

Should there be a failure of Little Holland 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 a residential dwelling to form a Special Educational Needs School including the alteration and extension to the buildings at Dorcette House, Little Lane, Whaplode.
- 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.
- Part of the proposed development is in Flood Zone 3 however the buildings that are the subject of the change in use are in Flood Zone 1.
- The development is protected by defences during the 1% annual probability (1 in 100 chance each year) fluvial event and 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.
- There are no recommendations for existing floor levels and the finished floor levels of the extensions should be at a level not lower than the existing floor level.
- The development passes the Sequential Test and Exception Test and is therefore suitable for the proposed location.

ATTACHMENT 1

TOPOGRAPHIC SURVEY (Dwg Dorcette - 001)



	tree (indicative)
	tree (surveyed)
	Fir tree
	Planting - indicative
Dia:0.000 Spr:0000 Text:	Tree - bole diameter Tree - Canopy spread Tree - Species
W Mtr	Water meter
sv	Shut Valve
W.O.D	Wash out
A.V	Air Valve
CBL T.V x3	cable tv box (x number in group)
gas	Gas meter box or service entry
CL=0.00	Manhole cover level
INV= 0.00	Invert of pipe
FFL	Finished floor level
Bollard	Bollard
BT	BT Box
sign	Road sign / street sign
Bench	Bench
LP	Lamp post
EP	Electricity Pole
Edge of Tarmac (no kerb set) - 6.137	
Pin Kerb Level (back) - 6.14	
Top of Kerb Level (back of kerb) - 6.22	
Road Channel Level (face of kerb) - 6.09	
Spot Level 5.93	
GLYS 97	Gully

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Job Title : Topographic Survey - Dorcette House, Little Lane, Whaplode, PE12 8RU
Client : Oglesby & Limb Ltd
Drawn : MDS Date : 9th June 2023
Drawing number: Dorcette -001 Scale 1:200 on A1

THE DEPICTION OF A WALL, FENCE OR HEDGE DOES NOT NECESSARILY REPRESENT A LEGAL BOUNDARY. IT IS THE CLIENTS RESPONSIBILITY TO CONFIRM LEGAL BOUNDARIES WITH THE VENDOR / CONTRACTOR

Survey information is as a result of measurement to existing features and does not imply legal ownership of boundaries or land divisions. Where boundary alignment lines are added to the survey drawing and are taken from legal documents or other information supplied they are done so within the constraints of drawing quality and scale. They are provided on the basis of opinion and do not imply legal contract. Drainage information is as a result of surface inspection only, no chambers have been accessed. Manhole and pipe diameters should be checked before design and construction

This plan should only be used for its original purpose. No responsibility will be accepted if this plan is supplied to any party other than the original client.

All dimensions should be checked on site prior to design and construction.

DO NOT SCALE FROM THIS DRAWING

All tree heights and spreads are approximate. We have tried to identify tree types, however, if tree species is critical specialist advice should be sought.

The data used for the computation of horizontal & vertical control for this survey was recorded using survey grade GPS receivers and corrected data from Trimble VRS Services using Geoid model OSTN15 with OSGM 15. Station establishment was carried out in accordance with best practice guidelines issued by The Survey Association.

This drawing remains the intellectual property of MD Surveys

322700 N

322650 N

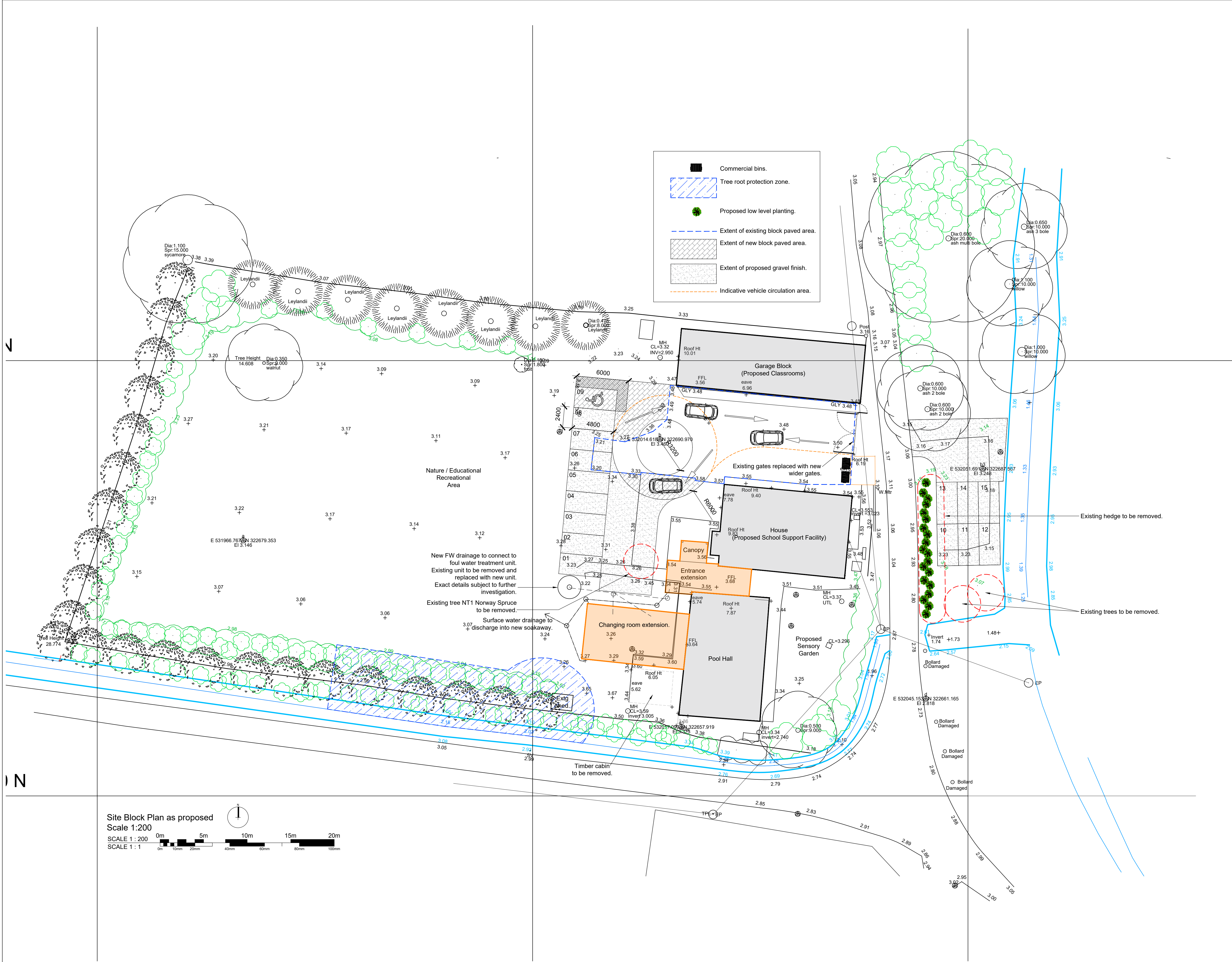
531950 E

532000 E

ATTACHMENT 2

**SITE BLOCK PLAN AS PROPOSED
(DWG A1672-10 P1)**

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Ref.	Date	Description	Initial
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O&L

Client:
DPS Education Limited

Project:
**Proposed Conversion of dwelling to SEN School
Dorcette House, Little Lane, Whaplode,
Lincolnshire, PE12 6RU**

Drawing Title:
Site Block Plan as proposed

PLANNING APPLICATION ISSUE

Date:	June 2023	Scale:	as shown @ A1
Drawn by:	RCW	Checked by:	AJO

Drawing Number:	Rev.
A1672-10	P1