




PROPOSED RETAIL UNIT, GATES GARDEN CENTRE, SOMERBY ROAD, COLD OVERTON, LE15 7QB

FLOOD RISK ASSESSMENT

MAY 2021

REPORT REF: 21506-01-FRA-03 REV B

Consulting Development Engineers

PROPOSED REAIL UNIT,
GATES GARDEN CENTRE, SOMERBY ROAD,
COLD OVERTON, LE15 7QB

FLOOD RISK ASSESSMENT

MAY 2021

REPORT REF: 21506-01-FRA-03 REV B

CLIENT: Gates Garden Centre

ENGINEER: Mewies Engineering Consultants Ltd
The Old Chapel
Station Road
Hugglescote
Leicestershire
LE67 2GB

Tel: 01530 264753
Email group@m-ec.co.uk

Report Prepared By:

……
Alexander Bennett BSc(Hons) MCIHT MTPS
Director

Report Checked By:

……
Tim Rose BA (Hons) MCIHT MTPS
Director

REGISTRATION OF AMENDMENTS

DATE	REV	CHANGE	PREPARED BY	CHECKED BY
May 2021	-	Initial Report	AB	TR
May 2021	A	Updates following client comments	AB	TR
May 2021	B	Updates following client comments	AB	TR

EXECUTIVE SUMMARY

SITE INFORMATION	Client	Gates Garden Centre
	Site	Somerby Road, Cold Overton, Leicestershire, LE15 7QB
	Site Location	Land South of Somerby Road, Cold Overton, Oakham LE15 7QB (Grid Ref: 481198, 309631).
	Current Land Use	Arable Land.
	Proposed Development	Retail Unit on Land South of Somerby Road, Cold Overton.
GENERAL INFORMATION	Flood Zone	Based upon the latest Environment Agency Flood Zone Mapping, development is located within Flood Zone 1 (FZ1), Flood Zone 1 is defined as land assessed as having an annual probability of river flooding less than 0.1%.
	Surface Water	Based upon the latest Surface Water Flood Risk Mapping the site is at very low risk of surface water flooding.

CONTENTS

APPENDICES

FIGURES

TABLES

1.0 INTRODUCTION

1.1 Mewies Engineering Consultants Ltd (M-EC) has been commissioned by Gates Garden Centre to undertake a Flood Risk Assessment (FRA) to support a planning application for a proposed retail unit on Land off Somerby Road, Cold Overton.

1.2 The proposed development is for a retail unit which will be located adjacent to an existing retail unit and within an existing area of landscaping and overflow parking. A site layout plan can be found in Appendix A. The site is located to the south of Cold Overton and is centred on OS grid reference 481198, 309631.

1.3 This assessment has been undertaken to ascertain the constraints of the development to the site and to assess the impact of the design, with respect to flood risk.

1.4 This Flood Risk Assessment has been carried out in accordance with the requirements of the National Planning Policy Framework (Ref. 4) and its companion document the National Planning Practice Guidance (Ref. 17). See Appendix C for policies and references.

1.5 The assessment has been prepared using our best engineering judgement however there are levels of uncertainty implicit in the historical data and methods of analysis. The report is based on the following information:

- British Geological Survey (BGS);
- Flood Zone Maps from the Environment Agency and .gov.uk websites; and
- Ordnance Survey;

1.6 All comments and opinions contained in this report, including any conclusions, are based on the information available to M-EC at the time of writing the report. The conclusions drawn by M-EC could, therefore, differ if the information is found to be inaccurate, incomplete or misleading. M-EC accepts no liability should this prove to be the case, or, if additional information exists or becomes available with respect to this site.

1.7 M-EC has completed this report for the benefit of the organisations/individuals referred to in the Introduction section; and any relevant Statutory Authority which may require a reference in relation to approvals for the proposed redevelopment of the site. Other third parties should not use or rely upon the contents of the report unless written approval has been gained from M-EC.

1.8 M-EC accepts no responsibility or liability for:

- the consequences of this documentation being used for any purpose or project other than that for which it was commissioned, and

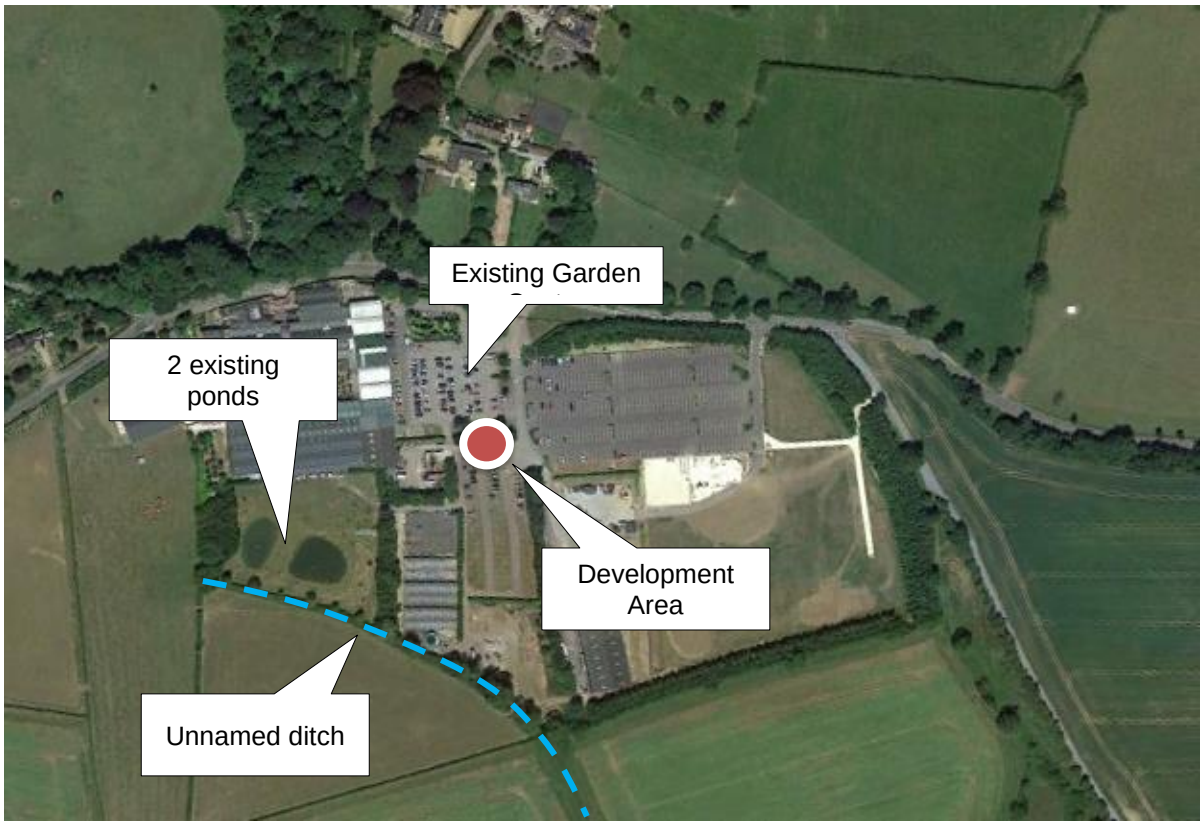
- this document to any third party with whom approval for use has not been agreed.

2.0 SITE DESCRIPTION

Site Location & Features

2.1 The Ordnance Survey National Grid Reference (NGR) for the centre of the site is 481198, 309631. The location for the proposed development is shown in Figure 1 below.

Figure 1: Site Location Plan



Ordnance Survey

2.2 The Ordnance Survey Map, refer to Appendix D, indicates the site slopes from north to south.

Flood Zone Maps & Flood Defence Data

2.3 Information relating to the current flood risk to the application site has been obtained from the Environment Agency and .gov.uk websites. There is no recorded evidence of flood defences in the vicinity of the site.

Watercourses & Hydrology

2.4 The closest watercourse is an unnamed ditch network to the south of the existing garden centre and 2 ponds are located within Gates Garden Centre (see Figure 1 above). The closest designated Main River is an unnamed river, situated approximately 3.42km southeast of the site.

Historic Flooding

2.5 There are no known flood incidences in the vicinity of the site.

Geological Data

2.6 Information published by the BGS indicates that the site is underlain by bedrock deposits of the Whitby Mudstone Formation. Superficial deposits are indicated to overlie the bedrock comprising mostly of the Oadby Member consisting of Diamicton, with Colluvium and Alluvium deposits consisting of Clays, Silts, Sands and Gravels towards the south to southwest of the site.

Sewers

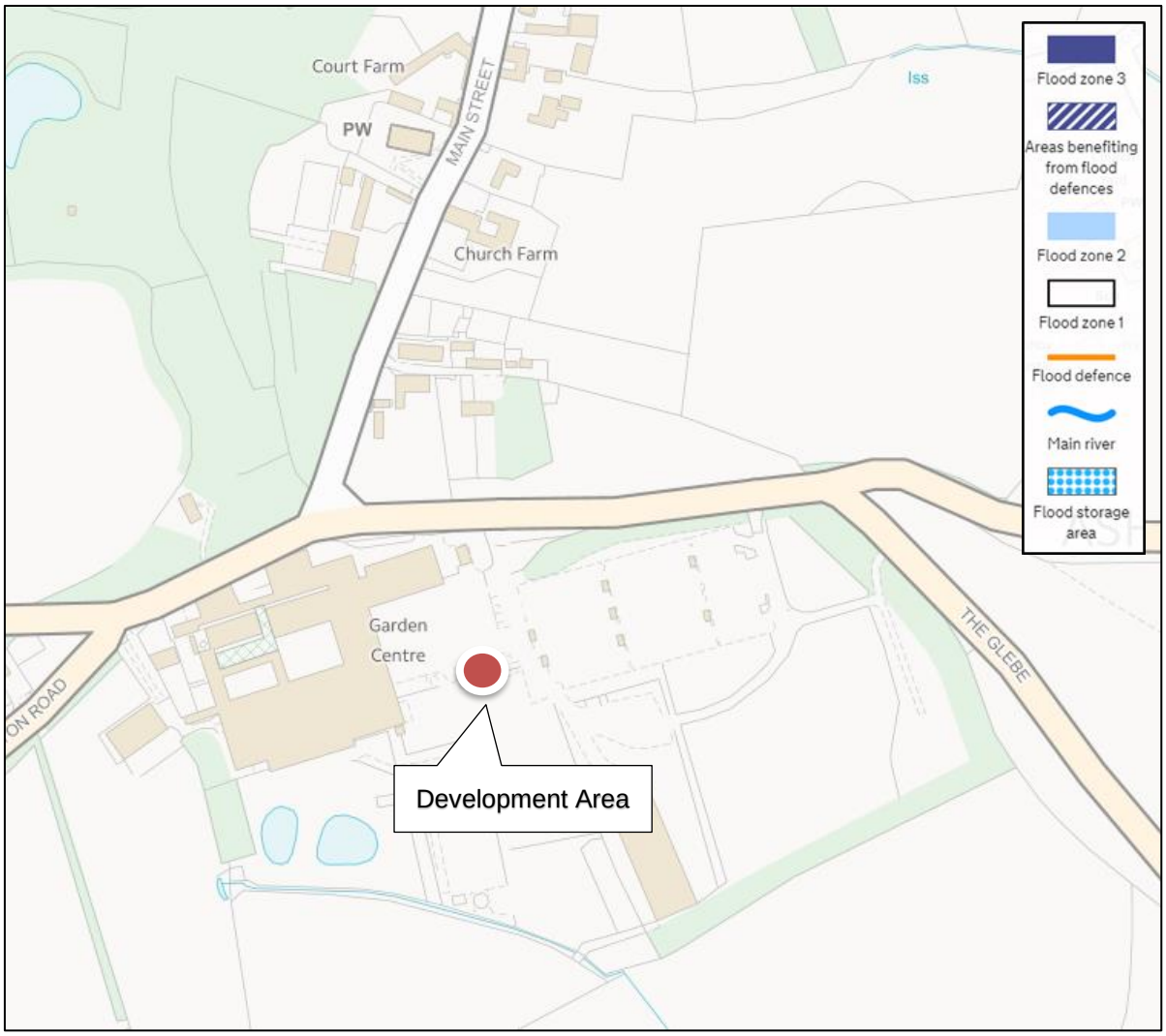
2.7 There are no public sewers in the vicinity of the site.

3.0 FLOOD RISK TO SITE

Flood Zone Allocation

3.1 The Flood Map for Planning is shown in Figure 2. The map shows the development area lies within Flood Zone 1 (FZ1). This means that each year this area has a chance of flooding of less than 0.1%. There are no flood defences in the area.

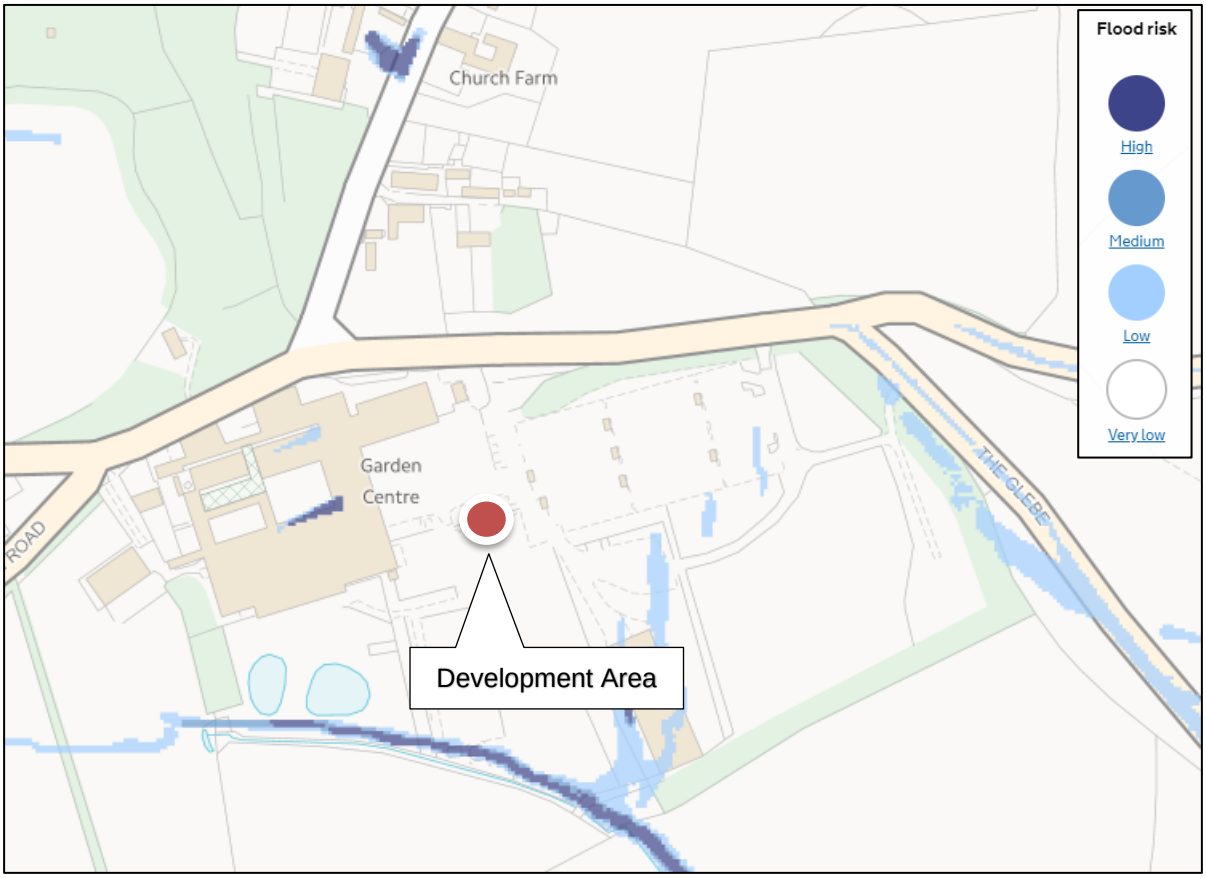
Figure 2: Environment Agency's Flood Map for Planning (Rivers and Seas)



Surface Water Flooding Risk Allocation

3.2 The Environment Agency Flood Risk from Surface Water Map, refer to Figure 3, indicates the development area is at very low risk of surface water flooding within the site.

Figure 3: Environment Agency's Flood Risk from Surface Water Map



Other Flooding Risk and other Allocation

3.3 The Environment Agency mapping shows the site is not at risk of reservoir flooding.

3.4 The geology indicates that groundwater is unlikely to be present. It is therefore considered that the risk from groundwater flooding is low.

3.5 The flood risk from public sewers can be considered as very low as there are none within the site boundary.

4.0 FLOOD RISK ASSESSMENT

Flood Risk Assessment Methodology & Objectives

4.1 It is recognised that developments that are designed without regard to flood risk may endanger lives, damage property, cause disruption to the wider community, damage the environment, be difficult to insure and require additional expense on remedial works. Current guidance on development and flood risk identifies several key aims for development to ensure that it is sustainable in flood risk terms.

4.2 These aims are as follows:

- The development should not be at significant risk of flooding and should not be susceptible to damage due to flooding;
- The development should not be exposed to flood risk such that the health, safety and welfare of the users of the development, or the population elsewhere, are threatened;
- Safe access to and from the development should be possible during flood events;
- The development should not increase flood risk elsewhere;
- The development should not prevent safe maintenance of watercourses or maintenance and operation of flood defences;
- The development should not be associated with an onerous or difficult operation and maintenance regime to manage flood risk. The responsibility for any operation and maintenance required should be clearly defined;
- Future users of the development should be made aware of any flood risk issues relating to the development;
- The development should not lead to the degradation of the environment; and
- The development should meet all of the above criteria for its entire lifetime, including consideration of the potential effects of climate change.

4.3 This Flood Risk Assessment is undertaken with due consideration of these sustainability aims and has been prepared to inform the proposed scheme.

Project Scope

4.4 In order to achieve the aims outlined above, this Flood Risk Assessment has been undertaken in accordance with current best-practice guidance, including the National Planning Practice Guidance. A scoping study was initially undertaken to identify all potential sources of flooding at the site, which may warrant further consideration. Any potential flooding issues identified in the scoping study have subsequently been considered within this FRA. The aim of the scoping study is to review all available information and provide a qualitative assessment of the flood risk to the site and the impact of the site on flood risk elsewhere. The report has been undertaken with due regard to the EA's National Standing Advice on Development and Flood Risk.

Scoping Study

4.5 All potential sources of flooding must be considered for any proposed development.

4.6 Using the Environment Agency Flood Zone mapping and available topography data, a summary of the potential sources of flooding and a review of the potential risk posed by each source on the development area of the application site is presented in Table 1.

Table 1: Potential Risks posed by Flooding Sources

Source	Risk			
	High	Medium	Low	Very low
Fluvial				✓
Tidal				✓
Surface Water				✓
Groundwater				✓
Sewer				✓
Artificial water bodies				✓

Fluvial Flood Risk Mitigation

4.7 The proposed retail unit falls entirely in Flood Zone 1. Given the site is in Flood Zone 1 and at very low risk of fluvial flooding, there would be no requirements to provide any further mitigation at this development site.

Surface Water Flood Risk Mitigation

4.8 The Environment Agency Flood Risk from the Surface Water Map shows the development area is at very low risk of surface water flooding within the site.

4.9 It is essential that the proposed development does not increase flood risk to adjacent land or downstream of the site, as well as protecting the development from flooding itself. Site levels will be designed to direct all overland surface water flows away from the retail unit (and existing surround buildings) following the natural topography of the land. Surface water generated on site is likely to be collected and conveyed to the existing site-wide drainage infrastructure within the Garden Centre.

Vulnerability Classification of Proposed Development

4.10 The National Planning Practice Guidance: Flood Zone and Flood Risk Tables provide information on the vulnerability classification of various developments. The proposed agricultural development end use of this site falls in the “less vulnerable” classification. Comparison of the ‘less vulnerable’ use with the development proposals within Flood Zone 1 areas shows development proposals are acceptable and in accordance with NPPF, as shown in Table 2.

Table 2: Flood risk vulnerability and flood zone 'compatibility' from Flood Risk and Coastal Change - Planning Practice Guidance

Flood Risk Vulnerability classification		Essential Infrastructure	Water compatible	Highly Vulnerable	More Vulnerable	Less Vulnerable
Flood Zone	Zone 1	✓	✓	✓	✓	✓
	Zone 2	✓	✓	Exception Test Required	✓	✓
	Zone 3a	Exception Test required	✓	**x**	Exception Test Required	✓
	Zone 3b 'Functional Floodplain'	Exception Test Required	✓	**x**	**x**	**x**

Key:
✓ Development is appropriate
X Development should not be permitted

Sequential Test

4.11 According to National Planning Practice Guidance: Flood Zone and Flood Risk, the Sequential Test gives preference for locating new development in Flood Zone 1 (Flood Zone 1 - Least risk of flooding). However, if there is no allocated land within Flood Zone 1 which meets the policy aims of the published Local Authority Local Plan or Local Development Framework then other sites in higher flood risk categories, Flood Zone 2 or 3 can be considered for that development.

4.12 The proposed site lies wholly within Flood Zone 1, as such the sequential test is not required.

Exception Test

4.13 The proposed development is in accordance with NPPF and the exception test is not required.

5.0 CONCLUSION AND SUMMARY

5.1 Mewies Engineering Consultants Ltd (M-EC) has undertaken a Flood Risk Assessment for retail unit on Land off Somerby Road, Cold Overton. This assessment has been undertaken to ascertain the constraints of the development to the site and to assess the impact of the design, with respect to flood risk.

- All development is located within Flood Zone 1 and is therefore compatible with a “less vulnerable” development in line with policy guidance. Given the site is in Flood Zone 1 and at very low risk of fluvial flooding, there would be no requirement to provide any further mitigation at this development site.

- The risk of flooding from surface water on the site is very low. Site levels will be designed to direct all overland surface water flows away from the retail unit and other existing buildings, following the natural topography of the land.

- The risk from all other sources of flooding is very low.

- Surface water generated on site is likely to be collected and conveyed to the existing site-wide drainage infrastructure within the existing Garden Centre.

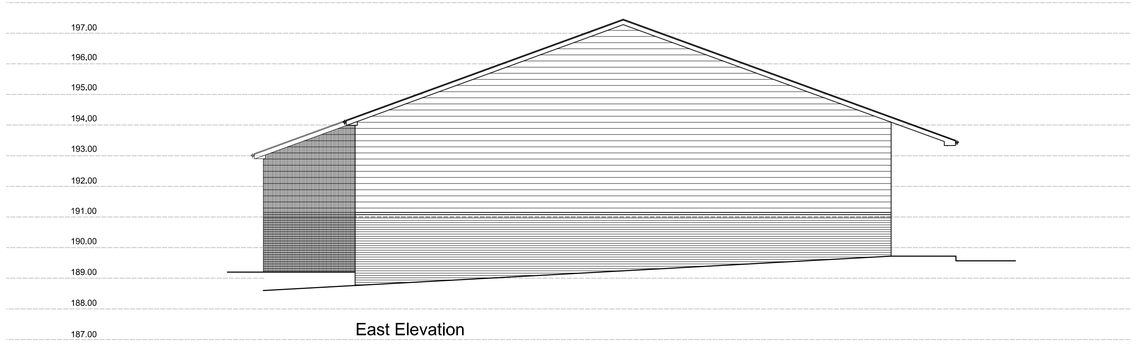
5.2 With the above measures in place, the development of the site will not create any flood risk issues to the wider area.

APPENDIX A

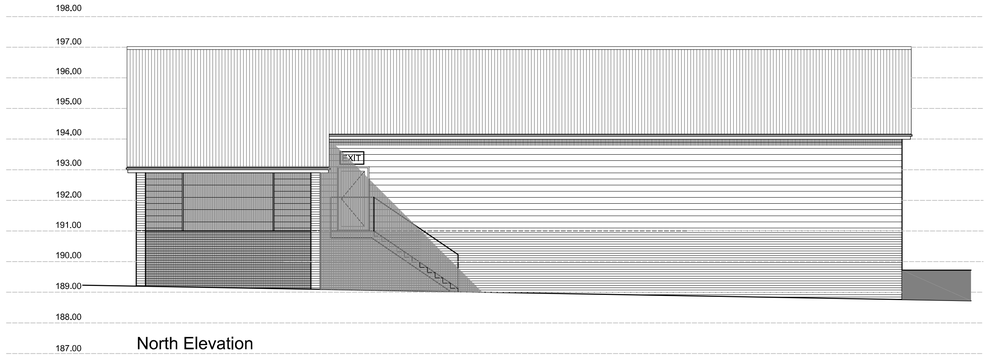
480800m 480900m 481000m 481100m 481200m 481300m 481400m

310000m 309900m 309800m 309700m 309600m

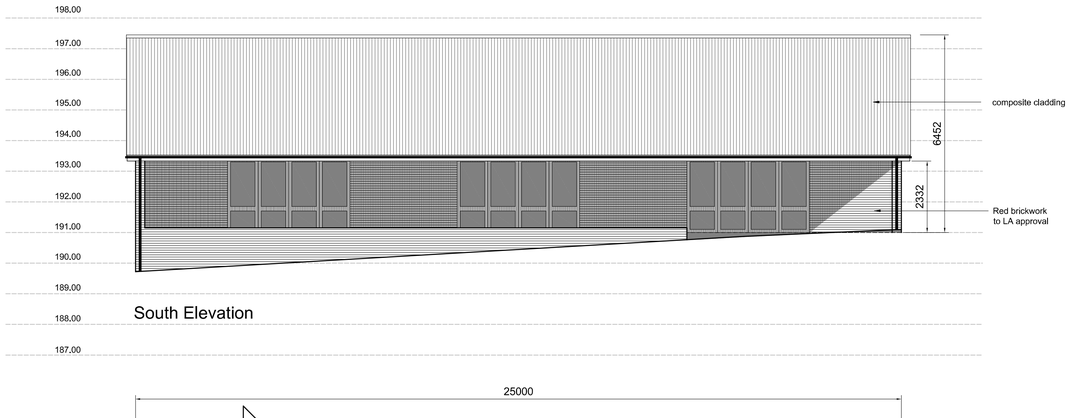
Site Plan
Scale 1:1250 at A2



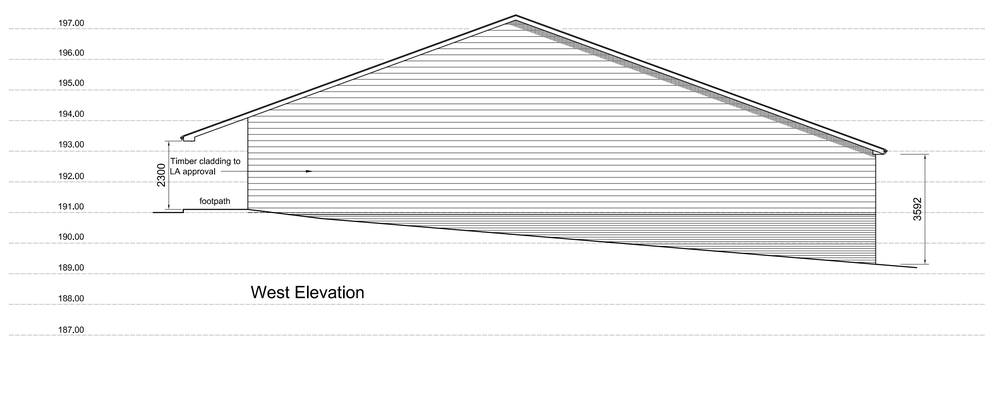
East Elevation



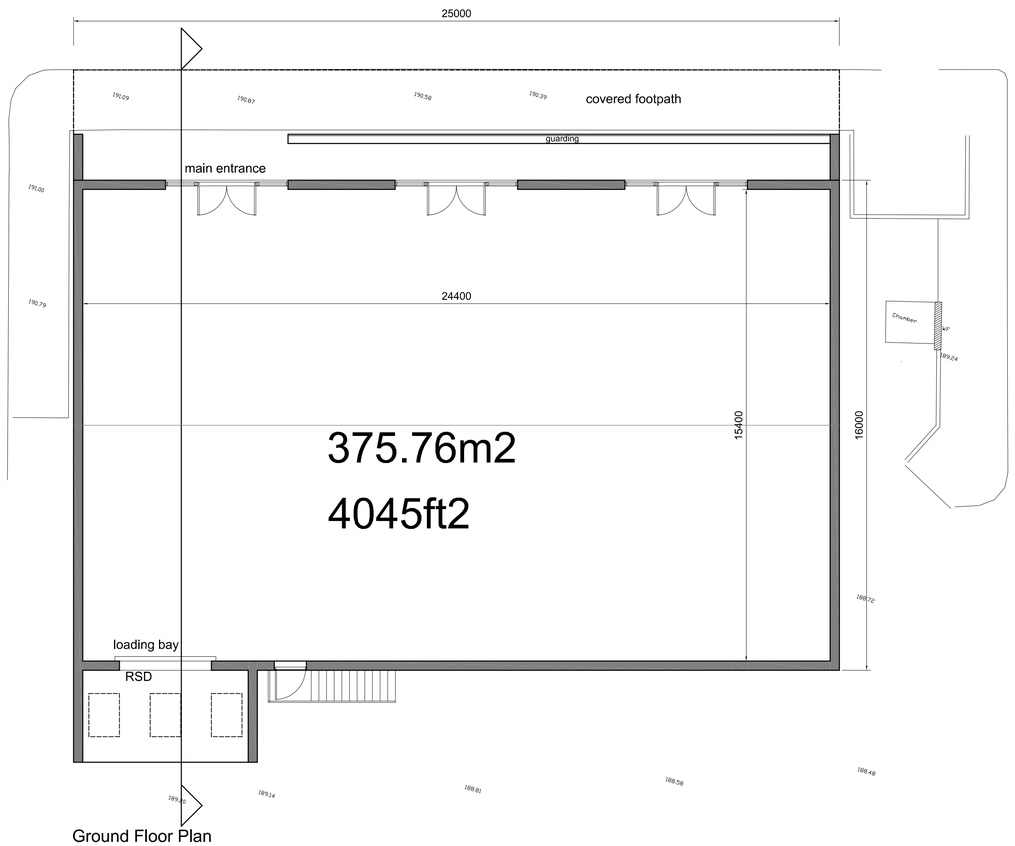
North Elevation



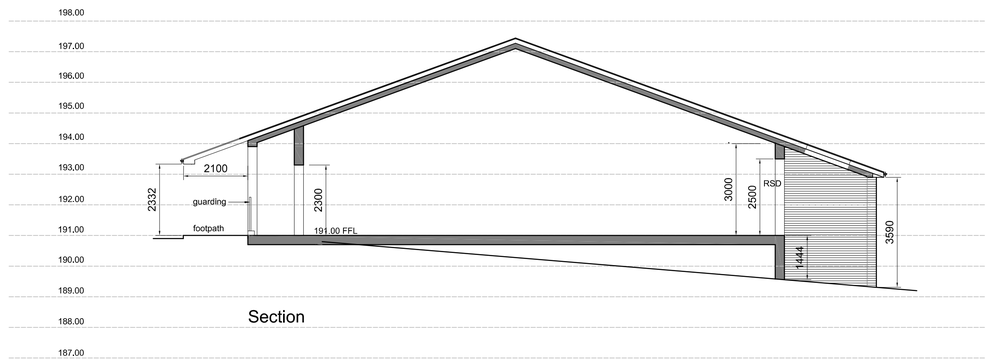
South Elevation



West Elevation



Ground Floor Plan



Section

Philip James Architecture

24 Oxford Drive, Melton Mowbray, Leicestershire, LE13 0AL Tel : 01664 560114 e mail : info@pjamesarchitecture.co.uk

project

Proposed Retail area
Gates Garden Centre

drawing

Sketch designs

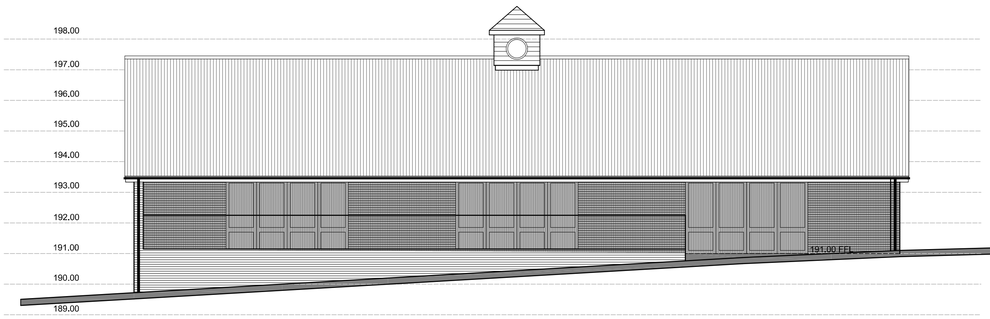
date : Dec 2020

scale : 1:100 at A1

drawn by : pjj

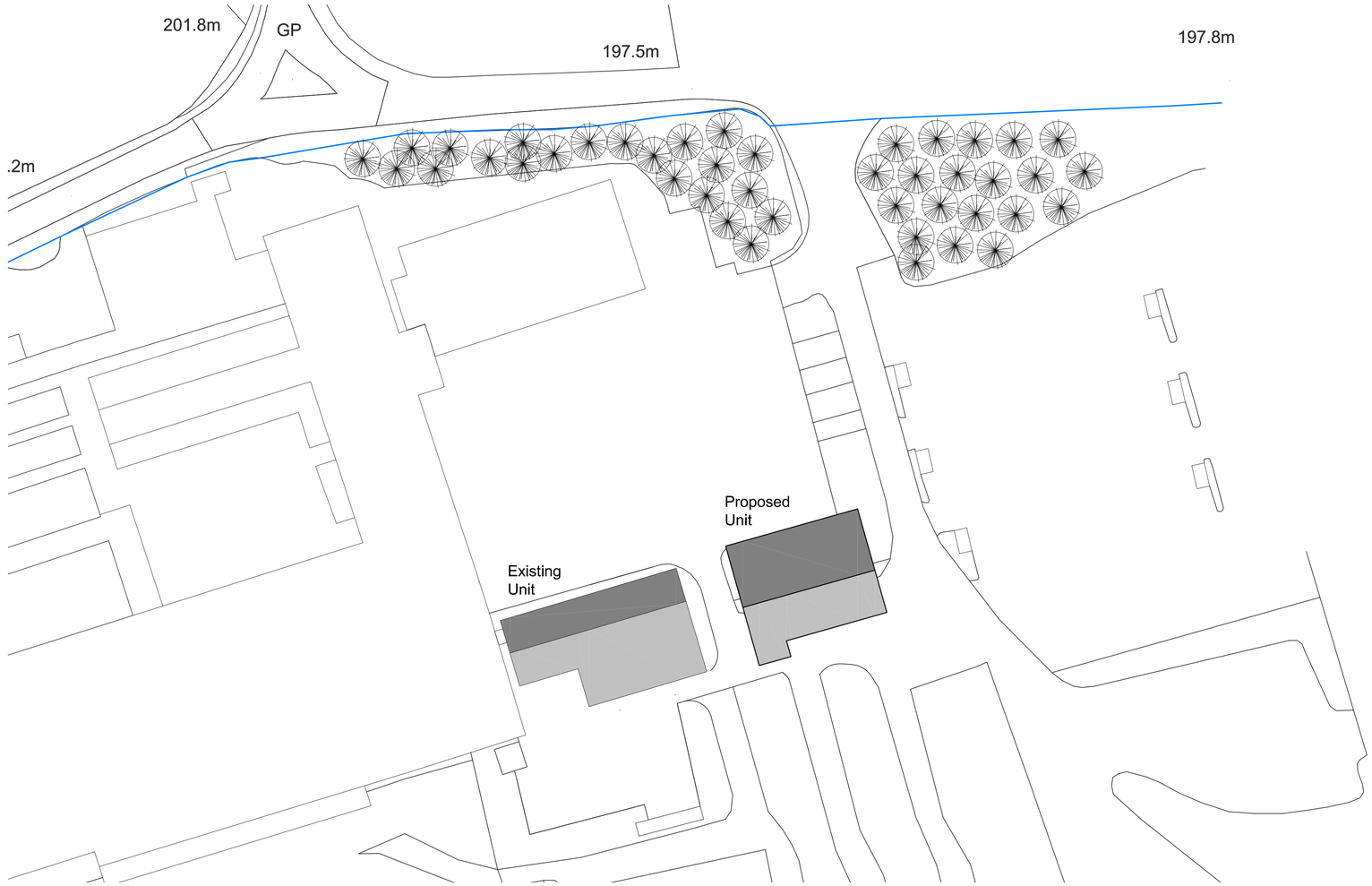
drawing number : 20/45/001

rev.



Proposed Unit

Existing Unit



Site Plan 1:500

Philip James
Architecture
24 Oxford Drive, Melton Mowbray, Leicestershire, LE13 0AL Tel : 01664 560114 e mail : info@pjamesarchitecture.co.uk

project

Proposed Retail area
Gates Garden Centre

drawing

Street Scene and Site Plan

date : Dec 2020

scale : 1:100 and 1:500 at A1

drawn by : pjj

drawing number : 20/45/002

rev.

APPENDIX B

National Planning Policy Framework
The National Planning Policy Framework (Ref. 4) sets out the Government's objectives for the planning system and how there should be a 'Presumption in Favour of Sustainable Development' and the planning system should facilitate and promote sustainable patterns of development, avoiding flood risk and accommodating the impacts of climate change.

The document seeks to ensure that flood risk is taken into account at all stages in the planning process to avoid inappropriate development in areas at risk of flooding, and to direct development away from areas at highest risk. Reference should also be made to the Planning Practice Guidance (Ref. 18) which provides additional guidance on flood risk.

For the purposes of applying the National Planning Policy Framework, areas at risk from all sources of flooding are included. For fluvial (river) and sea flooding, this is principally land within Flood Zones 2 and 3. It can also include an area within Flood Zone 1 which the Environment Agency has notified the local planning authority as having critical drainage problems.

Key elements from the document include

> *"Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk…"*
>
> *"Development should not be allocated or permitted if there are reasonably available sites appropriate for the proposed development in areas with a lower risk of flooding."*
>
> *"When determining any planning applications, local planning authorities should ensure flood risk is not increased elsewhere. Where appropriate, applications should be supported by a site-specific risk assessment. Development should only be allowed in areas at risk of flooding where in light of this assessment (and the sequential and exception tests) it can be demonstrated that:*
>
> *a) Within the site, the most vulnerable development is located in areas of lowest flood risk, unless there are overriding reasons to prefer a different location;*
>
> *b) The development is appropriately flood resistant and resilient*
>
> *c) It incorporates sustainable drainage systems unless there is clear evidence that this would be inappropriate;*
>
> *d) Any residual risk can be safely managed; and*
>
> *e) Safe access and escape plan routes are included where appropriate, as part of an agreed emergency plan."*

Flood and Water Management Act 2010
The Flood and Water Management Act 2010 (Ref. 15) gained Royal Assent on the 8th April 2010. The Flood and Water Management Act is the government's newest legislation to help improve flood risk management and ensure the security of water supplies in England and Wales. The Act updates legislation to ensure better protection from flooding, manage water more sustainably, improve public services and secure water resources during periods of drought. The Flood and Water Management Act helps to reduce flood risk by:

- Clarifying who is responsible for managing all sources of flood risk.
- Encourage more sustainable forms of drainage in new developments.
- Makes it easier to resolve misconnections to sewers.

The Flood and Water Management Act imparts significant new roles and responsibilities on local authorities. County or unitary authorities are now classed as lead local flood authorities (LLFAs) who have responsibilities for managing local flood risk. The responsibilities of a LLFA include:

- Prepare and maintain a strategy for local flood risk management in their areas, co-ordinating views and activity with other local bodies and communities through public consultation and scrutiny, and delivery planning.
- Maintain a register of assets – these are physical features that have a significant effect on flooding in their area.
- Investigate significant local flooding incidents and publish the results of such investigations.
- Issue consents for altering, removing or replacing certain structures or features on ordinary watercourses.
- Play a lead role in emergency planning and recovery after a flood event.

Planning Practice Guidance on Flood Risk & Coastal Change - 2015
The Government's new planning policy on sustainable drainage systems came into effect on 6 April 2015. It expects local planning policies and decisions on planning applications relating to major development (those of 10 dwellings or more; or equivalent non-residential or mixed development) to ensure that sustainable drainage systems for the management of run-off are put in place unless demonstrated to be inappropriate. Lead Local Flood Authorities (LLFAs) have also been made statutory consultees and new non-statutory guidance has been published under the changes.

The changes follow a joint Defra/DCLG consultation on delivering SuDS published in September 2014 in which the Government dropped all the key provisions of Schedule 3 of the Flood & Water Management Act 2010 and SuDS Approval Bodies (SABs) in favour of passing the oversight of SuDS from county councils (who are also LLFAs) to local planning authorities. According to the new planning policy, local planning authorities are expected, when considering planning applications:

- To consult the relevant lead local flood authority on the management of surface water,
- To satisfy themselves that the proposed minimum standards of operation are appropriate, and
- To ensure through the use of planning conditions or planning obligations that there are clear arrangements in place for ongoing maintenance over the lifetime of the development.

The policy also states that the sustainable drainage system should be designed to ensure that the maintenance and operation requirements are economically proportionate.

Sustainable Drainage Systems - Non-statutory technical standards for sustainable drainage systems – 2015

The non-statutory technical standards for the design, maintenance and operation of sustainable drainage systems to drain surface water have been published by Defra. The standards apply to systems that drain surface water from housing, non-residential or mixed use developments for the lifetime of the developments. The non-statutory technical standards are to be used in conjunction with the National Planning Policy Framework, and Planning Practice Guidance on Flood Risk & Coastal Change - 2015.

The following documents have been referred to in this report:

1 The Building Regulations 2015, Approved Document H.

2 Sewers for Adoption 7th Edition.

3 Civil Engineering Specification for the Water Industry, 7th Edition.

4 National Planning Policy Framework – February 2019.

5 Environment Agency Flood Risk Standing Advice.

6 Environment Agency 'Flood Risk Assessments – Climate Change Allowances' - February 2016.

7 The SuDS Manual – CIRIA C753.

8 Interim Code of Practice for Sustainable Drainage Systems – National SuDS Working Group, July 2004.

9 Cranfield University Soilscapes Map - http://www.landis.org.uk/soilscapes/

10 British Geological Survey – Geology of Britain viewer, http://mapapps.bgs.ac.uk /geologyofbritain/home.html

11 FEH WebService – Centre for Ecology and Hydrology, https://fehweb.ceh.ac.uk/GB/map

12 Design and analysis of urban storm drainage. The Wallingford Procedure Vol.1.

13 Institute of Hydrology Report No. 124 – Flood Estimation for small catchments.

14 Sustainable Drainage Systems – Non-statutory technical standards for sustainable drainage systems – March 2015.

15 Planning Practice Guidance – November 2016, updated October 2019

16 Water Industry Act 1991.

17 Sustainable Drainage Systems - Non-statutory technical standards for sustainable drainage systems – March 2015.

18 Flood and Water Management Act 2010

APPENDIX C

M-EC
The Old Chapel
Station Road
Hugglescote
Leicestershire
LE67 2GB

ORDANCE SURVEY MAP

Project:	**Gates Garden Centre, Somerby Road, Cold Overton**
File Ref:	**21506**
O.S. Grid Ref:	**481198, 309631**
Postcode:	**LE15 7QB**

- Civil Engineering
- Transport
- Road Safety
- Flood Risk & Drainage
- Structures
- Geo-Environmental
- M-EC Acoustic Air
- Utilities
- M-EC Geomatics
- Street Lighting
- Expert Witness

M-EC

Brighton | Leicester

T: 01530 264 753
group@m-ec.co.uk
www.m-ec.co.uk

Consulting Development Engineers