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Flood Risk Assessment
AEG4180_NG23_Rolleston_01

Site Address: Pear Tree Farm
Staythorpe Road
Rolleston
Newark
NG23 5SG

UK Experts in Flood Modelling, Flood Risk Assessments, and Surface Water Drainage Strategies

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Document Issue Record

Project: Flood Risk Assessment

Prepared for: Lisa Osborn

Reference: AEG4180_NG23_Rolleston_01

Site Location: Pear Tree Farm, Staythorpe Road, Rolleston, Newark, NG23 5SG

Issue	Date	Author	Check	Auth.	Comments
1	08/02/2024	Daniel Cunningham	JA	OH	First issue

Please Note:

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Summary

Development Description	Existing	Proposed
Development Type	A residential dwelling	Construction of an extension to the existing dwelling on site
EA Vulnerability Classification	More Vulnerable	More Vulnerable
Ground Floor Level	EA 1m LiDAR data shows the ground elevation of the site varies between approximately 14.05m AOD and 14.94m AOD.	Finished Floor Levels (FFLs) of the new extension will be set no lower than existing floor levels in accordance with EA Standing Advice for Minor Developments.
Level of Sleeping Accommodation	Ground Floor	Ground Floor
Surface Water Drainage	N/A[1]	Proposed to manage runoff via existing surface water drains on site. Small scale SuDS such as water butts could be provided in external areas to provide betterment.
Site Size	Approximately 4300m²	No change
Development Size		<250m2
Risk to Development	**Summary**	**Comment**
EA Flood Zone	Flood Zones 1, 2, and 3	Proposed development footprint in Flood Zone 2
Flood Source	Fluvial	River Greet
SFRA Available	SFRA Review 2016 (Newark and Sherwood District Council, 2016) and Newark and Sherwood District Council Strategic Flood Risk Assessment Level 1 (Newark and Sherwood District Council, 2009)	
Management Measures	**Summary**	**Comment**
Ground floor level above extreme flood levels	N/A[2]	Finished Floor Levels (FFLs) of the new extension will be set no lower than

		existing floor levels in accordance with EA Standing Advice for Minor Developments.
Safe Access/Egress Route	N/A[2]	Dry access/egress should be possible in the design 1 in 100 year modelled flood event on Staythorpe Road. EA data has been requested but as of the writing of the report it has not been received. If safe access/egress is not possible in the fluvial event, then refuge should be taken within the building.
Flood Resilient Design	Yes	EA Standing Advice for Minor Developments will be recommended: finished floor levels of the proposed extension are to match the existing finished floor levels. As a precaution, it is recommended that the extension is built in a flood resilient manner in accordance with Improving the Flood Performance of New Buildings - Flood Resilient Construction
Site Drainage Plan	No	Proposed to manage runoff via existing surface water drains on site. Small scale SuDS such as water butts could be provided in external areas to provide betterment.
Flood Warning and Evacuation Plan	Yes	Recommended to sign up to the River Trent at Rolleston Environment Agency (EA) flood warning service.
Offsite Impacts	**Summary**	**Comment**
Displacement of floodwater	No	Development is classified as minor development in terms of flood risk and therefore in isolation should not result in increase in flood risk elsewhere.
Increase in surface run-off generation	No	Proposed to manage runoff via existing surface water drains on site. Small scale SuDS such as water butts could be

		provided in external areas to provide betterment.
Impact on hydraulic performance of channels	Negligible	The River Greet is located approximately 270m from the site

[1] not required for this assessment

[2] data not available.

1. Introduction

1.1. Aegaea were commissioned by Lisa Osborn to undertake a Flood Risk Assessment (FRA) to facilitate a householder planning application for the proposed development. This FRA has been prepared in accordance with the requirements set out in the National Planning Policy Framework (NPPF) and the associated Planning Practice Guidance.

1.2. This FRA is intended to support a full planning application and as such the level of detail included is commensurate and subject to the nature of the proposals.

Site Overview

1.3. The site of the proposed development is Pear Tree Farm, Staythorpe Road, Rolleston, Newark, NG23 5SG (Figure 1).

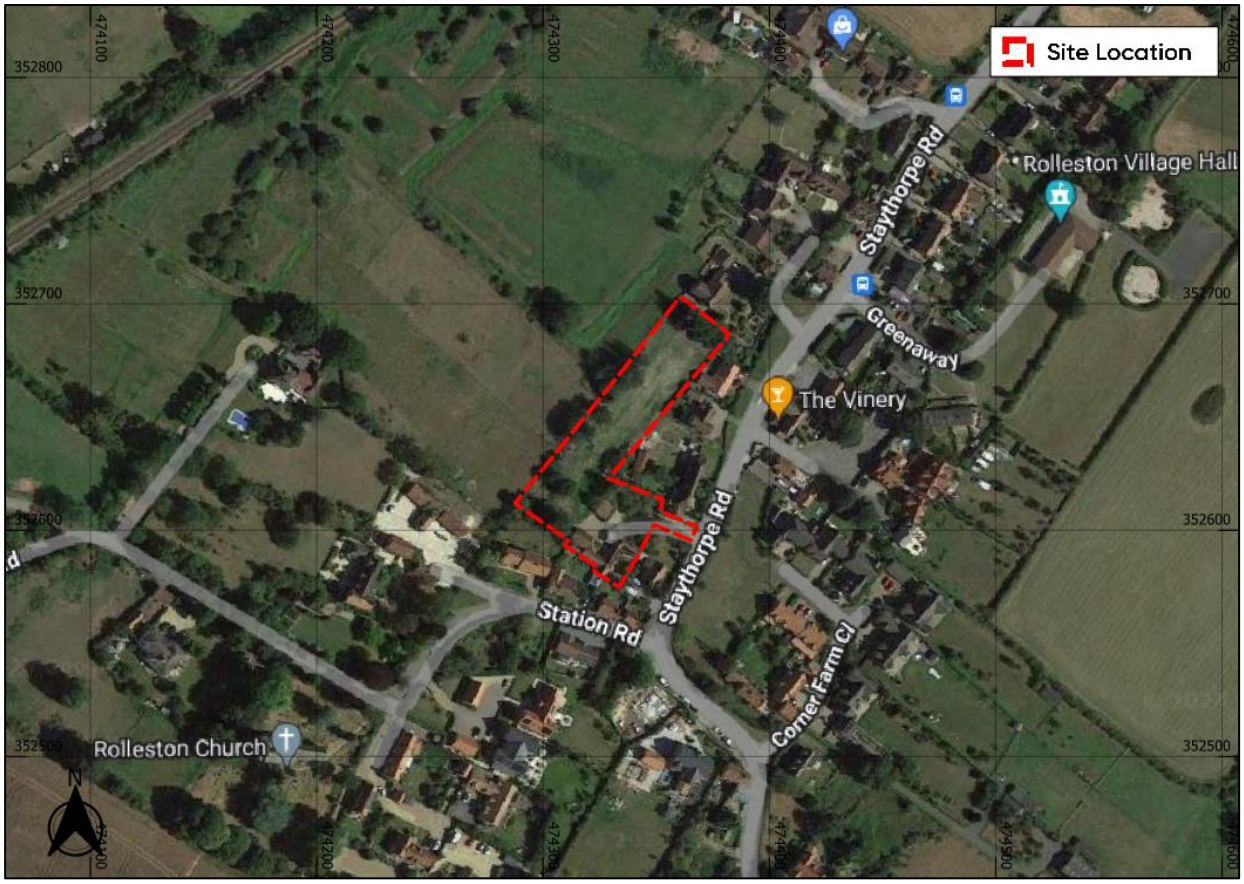

Figure 1: Site Location (Base map from Google Hybrid ©)

1.4. The proposed development is for the construction of an extension to the existing dwelling on site.

1.5. In the absence of a topographical survey, Environment Agency Light Detection and Ranging (LiDAR) data Digital Terrain Model has been used to review the topography of the site. The LiDAR data shows the ground elevation of the site varies between approximately 14.05m AOD (Above Ordnance Datum) and 14.94m AOD (Figure 2).

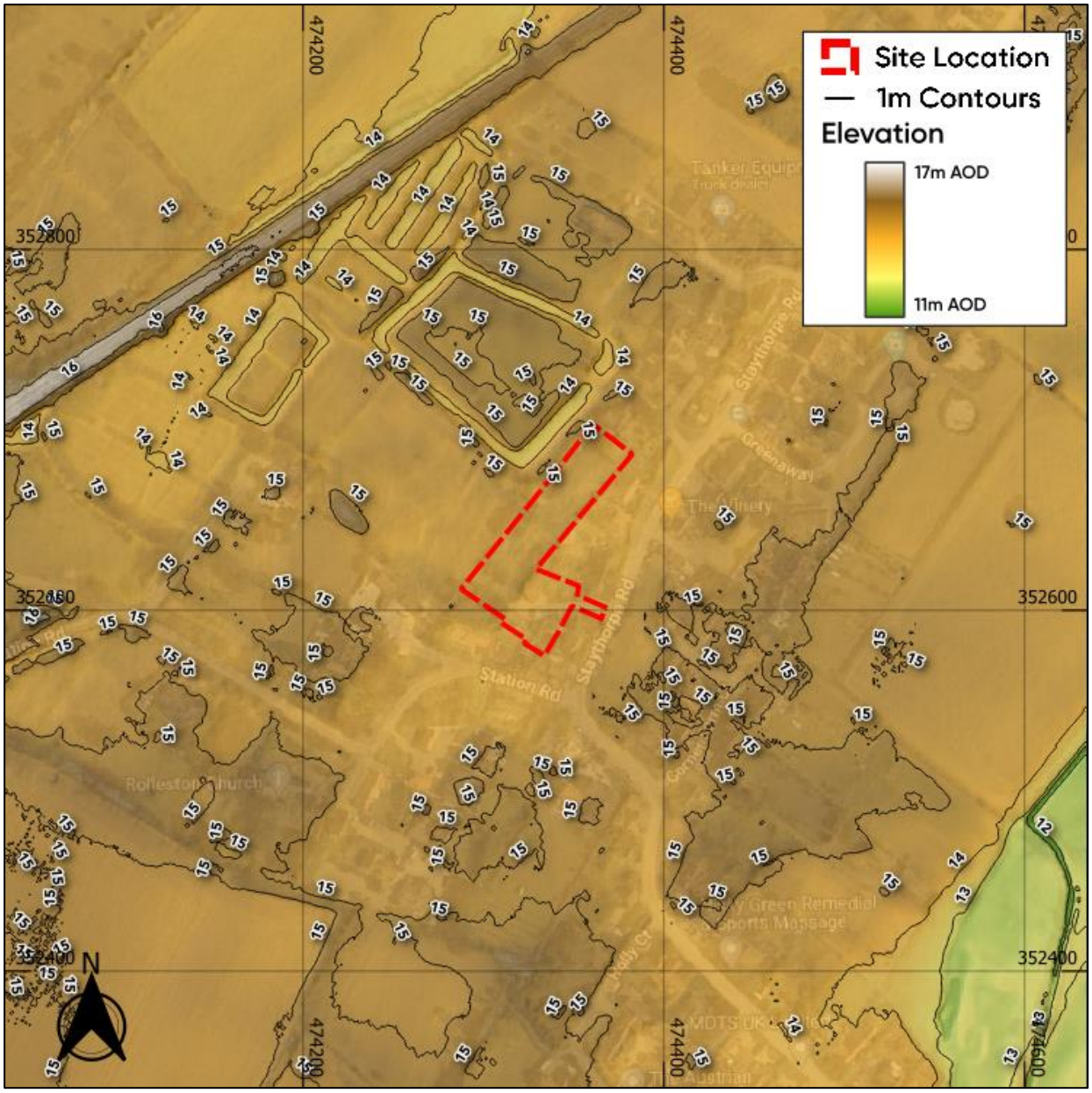

Figure 2: Site Topography (Base map from Google Hybrid © Contains public sector information licensed under the Open Government Licence v3.0)

1.6. Newark and Sherwood District Council is the Local Planning Authority (LPA) for the site and Nottinghamshire County Council is the designated Lead Local Flood Authority (LLFA). The site sits within the Environment Agency's East Midlands region.

Planning Policy and Guidance

1.7. UK government planning guidance states[1] that an FRA is required for developments which are:

- *in flood zone 2 or 3 including minor development and change of use*
- *more than 1 hectare (ha) in flood zone 1*
- *less than 1 ha in flood zone 1, including a change of use in development type to a more vulnerable class (for example from commercial to residential), where they could be affected by sources of flooding other than rivers and the sea (for example surface water drains, reservoirs)*
- *in an area within flood zone 1 which has critical drainage problems as notified by the Environment Agency*

1.8. The site is in Flood Zone 2/3 therefore the NPPF states that an FRA is required.

1.9. The objective of this FRA is to demonstrate that the proposals are acceptable in terms of flood risk. This report summarises the findings of the study and specifically addresses the following issues in the context of the current legislative regime:

- Fluvial flood risk
- Surface water flood risk
- Risk of flooding from other sources

[1]**https://www.gov.uk/guidance/flood-risk-assessment-for-planning-applications#when-you-need-an-assessment**

2. Planning Policy

2.1. Inappropriate development in a flood risk area could pose significant risk in terms of personal safety and damage to property for the occupiers of the development or for people elsewhere. The approach taken in the assessment of flood risk at the planning stage is set out in national, regional, and local planning policy and associated guidance. This section summarises the key policies and guidance relevant to the proposed development.

National Planning Policy Framework (NPPF)

2.2. The National Planning Policy Framework[2] (NPPF) (DLUHC, 2023) which includes UK Government policy on development and flood risk states:

> *165. Inappropriate development in areas at risk of flooding should be avoided by directing development away from areas at highest risk (whether existing or future). Where development is necessary in such areas, the development should be made safe for its lifetime without increasing flood risk elsewhere.*
>
> *173. When determining any planning applications, local planning authorities should ensure that flood risk is not increased elsewhere. Where appropriate, applications should be supported by a site-specific flood-risk assessment. Development should only be allowed in areas at risk of flooding where, in the light of this assessment (and the sequential and exception tests, as applicable) 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 such that, in the event of a flood, it could be quickly brought back into use without significant refurbishment;*
>
> *c) it incorporates sustainable drainage systems, unless there is clear evidence that this would be inappropriate;*

[2] https://www.gov.uk/guidance/national-planning-policy-framework, **last updated Dec 2023**

> *d) any residual risk can be safely managed; and*
>
> *e) safe access and escape routes are included where appropriate, as part of an agreed emergency plan.*

> *174. Applications for some minor development and changes of use should not be subject to the sequential or exception tests but should still meet the requirements for site-specific flood risk assessments set out in footnote 59.*

2.3. Paragraph 051 of the Flood Risk and Coastal Change Planning Practice Guidance (PPG) states:

> *Minor development means:*
>
> - *minor non-residential extensions (industrial/commercial/leisure etc): extensions with a floorspace not in excess of 250 square metres.*
> - *alterations: development that does not increase the size of buildings, e.g. alterations to external appearance.*
> - *householder development: for example, sheds, garages, games rooms etc within the curtilage of the existing dwelling,* ***in addition to physical extensions to the existing dwelling itself.*** *This definition excludes any proposed development that would create a separate dwelling within the curtilage of the existing dwelling (eg subdivision of houses into flats) or any other development with a purpose not incidental to the enjoyment of the dwelling.*

2.4. As such, the proposal would be considered a Minor Development under the PPG.

2.5. Footnote 59 of the NPPF states:

> *A site-specific flood risk assessment should be provided for all development in Flood Zones 2 and 3. In Flood Zone 1, an assessment should accompany all proposals involving: sites of 1 hectare or more; land which has been identified by the Environment Agency as having critical drainage problems; land identified in a strategic flood risk assessment as being at increased flood risk in future; or land that may be subject to other sources of flooding, where its development would introduce a more vulnerable use.*

2.6. Flood Zones in England are defined as follows:

Table 1: Flood Zone Definitions

Flood Zone	Definition
Zone 1 Low Probability	Land having less than 1 in 1,000 annual probability of river or sea flooding (all land outside Zones 2 and 3).
Zone 2 Medium Probability	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding.
Zone 3a High Probability	Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding.
Zone 3b The Functional Floodplain	This zone comprises land where water from rivers or the sea has to flow or be stored in times of flood. The identification of functional floodplain should take account of local circumstances and not be defined solely on rigid probability parameters. Functional floodplain will normally comprise: land having a 3.3% or greater annual probability of flooding, with any existing flood risk management infrastructure operating effectively; or land that is designed to flood (such as a flood attenuation scheme), even if it would only flood in more extreme events (such as 0.1% annual probability of flooding). Local planning authorities should identify in their Strategic Flood Risk Assessments areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency. (Not separately distinguished from Zone 3a on the Flood Map)

2.7. An FRA should be appropriate to the scale, nature, and location of the development. It should identify and assess the risk from all sources of flooding to and from the development and demonstrate how any flood risks will be managed over the lifetime of the development.

2.8. An assessment of hydrological impacts should be undertaken, including to surface water runoff and impacts to drainage networks in order to demonstrate how flood risk to others will be managed following development and taking climate change into account.

2.9. The Planning Practice Guidance, which was substantially revised in March 2015 in relation to drainage, requires that sustainable drainage systems (SuDS) should be considered and included where practicable, in line with Defra Technical Standards[3].

Local Plan

2.10. The Local Plan prepared by the Local Planning Authority, Newark and Sherwood District Council, sets out the policies for development in the local area.

2.11. Policy 10A Local Drainage Designations outlines the requirements for new development within the area. It states:

> *In order to ensure the appropriate management of flood risk as part of new development, the District Council will work with partners to develop Local Drainage Designations in the following locations:*
>
> *- Lowdham; and*
>
> *- Southwell*
>
> *These designations will set local drainage standards which specified forms of new development will be required to meet. This is to ensure that development positively manages its surface water run-off through the design and layout of new development, in order that there will be no unacceptable Impact from run-off on surrounding areas or the existing drainage regime.*
>
> *The geographic extent, forms of development which will be subject to the designation and the specific standards that proposals will need to meet will be defined through a Local Drainage Designations Supplementary Planning Document.*
>
> *Where the evidence to support the development of additional Local Drainage Designations in other locations emerges then the District Council will work with*

3 Technical Standards Accessed Online
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/415773/sustainable-drainage-technical-standards.pdf

partners, to secure their introduction and subsequent implementation, in line with the above.

Sequential and Exception Tests

2.12. The Sequential and Exception Tests are applied in specific cases defined by UK Government policy. Their purpose is to drive development to areas of low flood risk and to support developments which improve flood risk for developments in areas at risk of flooding.

2.13. Under the NPPF all new planning applications should undergo a Sequential Test accordance with paragraph 168 and footnotes 59 and 60. This test should be implemented by local planning authorities with a view to location particularly vulnerable new developments outside of the floodplain.

2.14. Paragraph 174 of the NPPF states:

"174. Applications for some ***minor development*** *and changes of use should not be subject to the sequential or exception tests but should still meet the requirements for site-specific flood risk assessments set out in footnote 59."*

2.15. As such, a site-specific Sequential Test and Exception Test for the proposed developments is not considered necessary in line with the NPPF given that the proposal is for a minor development.

Summary

2.16. This flood risk assessment has been prepared with due consideration to the above local and national policy.

3. Consultation and Review

Consultation

3.1. Modelled flood level data has been requested from the EA but as of the writing of the report it has not been received.

Documents and Online Mapping

3.2. Local Governments and Lead Local Flood Authorities provide documents which contain data and policies on flood risk and new development in their areas. These documents are introduced and briefly summarised below. For the purposes of this FRA, these documents have been reviewed for relevant information and any relevant data is discussed within the appropriate sub heading of this report.

3.3. The following sources of information have been reviewed for this assessment:

- Flood Map for Planning on the Environment Agency website *https://flood-map-for-planning.service.gov.uk/*
- Long Term Flood Risk Information on the Environment Agency website *https://www.gov.uk/check-long-term-flood-risk*
- National Planning Policy Framework (NPPF) (Department for Levelling Up, Housing and Communities, 2023)
- Planning Practice Guidance - Flood Risk and Coastal Change (Department for Levelling Up, Housing and Communities, 2022)
- Geoindex Onshore (British Geological Survey, 2023)
- Newark and Sherwood Plan Review - Amended Core Strategy (Newark and Sherwood District Council, 2019)[4]

[4] https://www.newark-sherwooddc.gov.uk/media/nsdc-redesign/documents-and-images/your-council/planning-policy/local-development-framework/amended-core-strategy-dpd/amended-core-strategy-DPD.pdf

- Nottinghamshire Preliminary Flood Risk Assessment (Nottinghamshire County Council, 2023)[5]
- Newark and Sherwood District Council Strategic Flood Risk Assessment Level 1 (Newark and Sherwood District Council, 2009)[6] and SFRA Review 2016 (Newark and Sherwood District Council, 2016)[7]
- Local Flood Risk Management Strategy 2021-2027 (Nottinghamshire County Council, 2020)[8]

Preliminary Flood Risk Assessment (PFRA)

3.4. The PFRA, published in 2011 and 2017, is a high-level appraisal of flood risk across Lead Local Flood Authority Nottinghamshire County Council. The flood risk from all sources, including fluvial, surface water, groundwater, and surcharged sewers is evaluated. It is the basis upon which the Local Flood Risk Management Strategy is produced.

3.5. The PFRA summarises historical flood incidents in Nottinghamshire County Council. The site is not recorded as having been affected by any flood event.

Strategic Flood Risk Assessment (SFRA)

3.6. The SFRA, published in 2009 and 2016, provides the evidence base for the Local Planning Authority Newark and Sherwood District Council Local Plan and guidance for consideration when determining planning applications. The SFRA seeks to place new development into areas of lower flood risk taking into account current flood risk, future flood risk, and the effect a proposed development would have on the risk of flooding.

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[5] https://consult.nottinghamshire.gov.uk/place/nottinghamshire-pfra-consultation/supporting_documents/Nottinghamshire%20PFRA.pdf

[6] https://www.newark-sherwooddc.gov.uk/media/newark-and-sherwood/images-and-files/planning-policy/pdfs/flooding-and-water-infrastructure/strategic-flood-risk-assessment-level-1/Strategic-Flood-Risk-Assessment---Level-1-Report---Main-Text---DONE.pdf

[7] https://www.newark-sherwooddc.gov.uk/media/nsdc-redesign/documents-and-images/your-council/planning-policy/local-development-framework/strategic-flood-risk-assessments/strategic-flood-risk-assessment-update/ENV.01-Strategic-Flood-Risk-Assessment-Review-Dec-2016.pdf

[8] https://www.nottinghamshire.gov.uk/media/4346719/nottinghamshire-local-flood-risk-mangement-stategy-2021-27.pdf

3.7. The SFRA mapping provided by Newark and Sherwood District Council has been used throughout production of this report as a source of information, particularly pertaining to historical flood incidents.

Local Flood Risk Management Strategy (LFRMS)

3.8. The Local Flood Risk Management Strategy (2021-2027) sets out roles and responsibilities for flood risk management, assesses the risk of flooding in the area, where funding can be found to manage flood risk, and the policies, objectives, and actions of the Lead Local Flood Authority.

3.9. The Nottinghamshire County Council LFRMS is used within this report to identify any flood management infrastructure and historical incidences of flooding.

4. Sources of Flood Risk

Fluvial

4.1. Flooding from watercourses arises when flows exceed the capacity of the channel, or where a restrictive structure is encountered, resulting in water overtopping the banks into the floodplain.

4.2. The site is located within Flood Zones 1, 2, and 3 (Figure 3). Flood Zone 1 denotes a risk of flooding from fluvial and tidal sources less than 1 in 1,000 (0.1%) probability. Flood Zone 2 denotes a risk of flooding from fluvial sources between a 1 in 100 (1%) and 1 in 1,000 (0.1%). Flood Zone 3 denotes a risk of flooding from fluvial sources greater than 1 in 100 (1%). It is noted that the majority of the site is located in Flood Zone 2, and the proposed development footprint is also in Flood Zone 2.

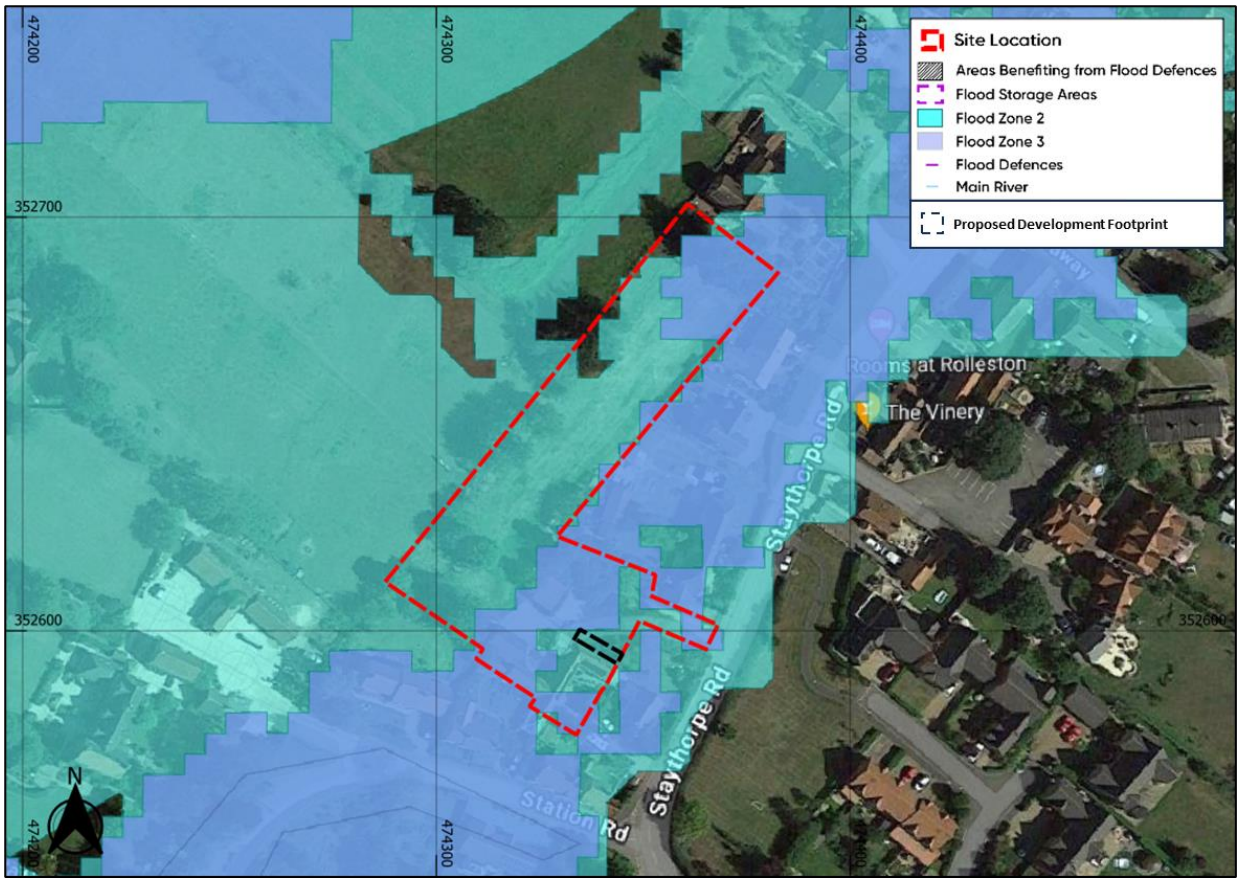

Figure 3: EA Flood Map for Planning (Base map from Google Hybrid © Contains public sector information licensed under the Open Government Licence v3.0)

Main Rivers

4.3. The nearest EA Main River is the River Greet that is located approximately 270m west of the site.

Ordinary Watercourses

4.4. The nearest ordinary watercourse was unnamed watercourse located approximately 140m northwest of the site.

Historical Fluvial Flooding

4.5. The EA Recorded and Historical Flood Outlines shows main river fluvial flooding surrounding the site, however the extent does not encroach the site boundary (Figure 4).

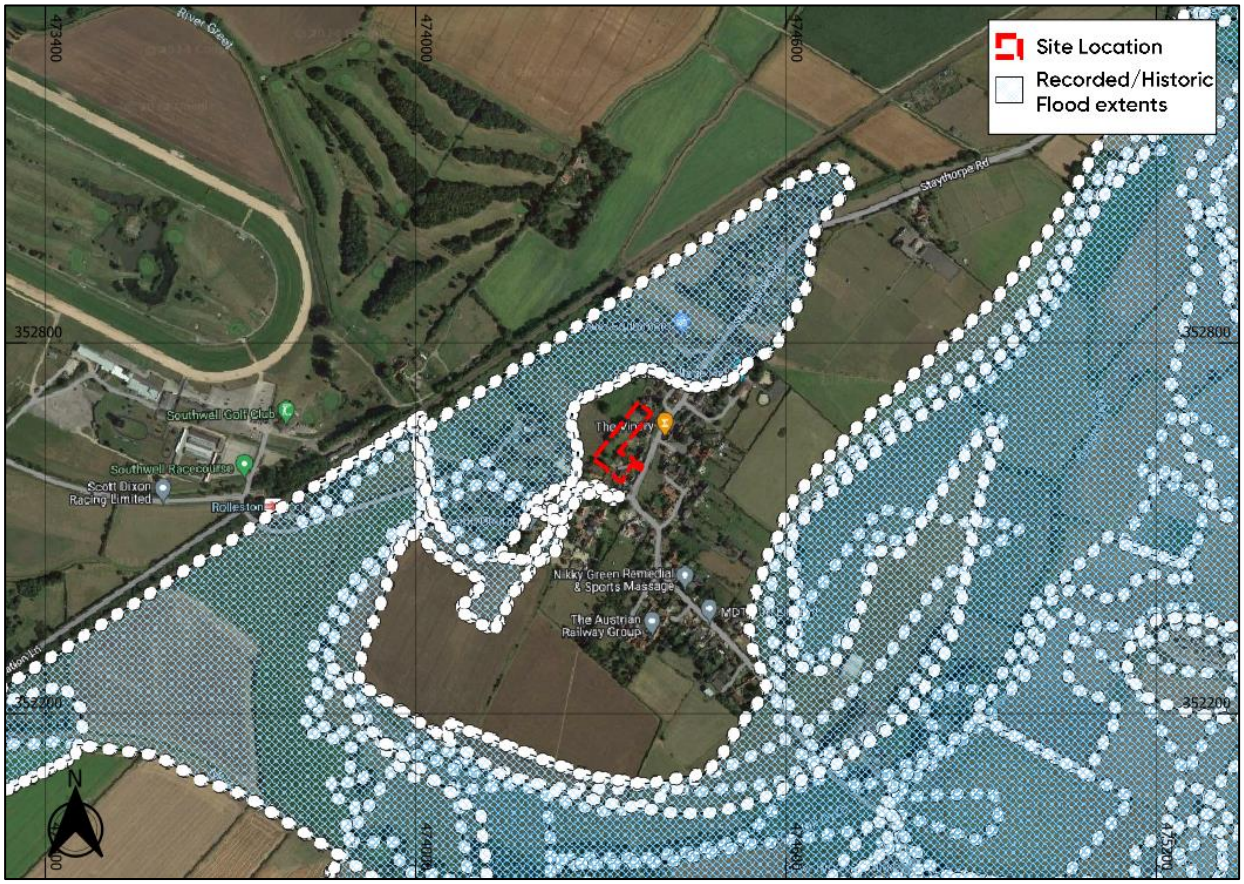

Figure 4: EA Historic Flood Mapping (Base map from Google Hybrid © Contains public sector information licensed under the Open Government Licence v3.0)

4.6. The site is located in Flood Zone 3 but the proposed development footprint is located in Flood Zone 2. It can be considered that the site is at low to moderate risk from fluvial flooding. As such, EA Standing Advice for Minor Developments will be recommended in Section 5.

Tidal

4.7. Tidal flooding occurs when a high tide and high winds combine to elevate sea levels. An area behind coastal flood defences can still flood if waves overtop the defences or break through them. Tidal flooding can also occur a long way from the coast by raising river levels. Water may overtop the river bank or river defences when tide levels are high.

4.8. The site is a significant distance from any tidal source and above the anticipated extreme tidal levels, even when considering the impacts of climate change. The risk of flooding from tidal sources is low.

Canals

4.9. The Canal and River Trust (CRT) generally maintains canal levels using reservoirs, feeders, and boreholes and manages water levels by transferring it within the canal system.

4.10. No CRT canals were identified within 1000m of the site.

4.11. The risk of flooding to this site from canals is considered to be low.

Pluvial

4.12. Pluvial flooding can occur during prolonged or intense storm events when the infiltration potential of soils, or the capacity of drainage infrastructure is overwhelmed leading to the accumulation of surface water and the generation of overland flow routes.

4.13. Annual surface water flood risk is labelled by the EA as:

- 'High Risk'; >3.3% AEP (annual probability greater than 1 in 30).
- 'Medium Risk'; 1.1% to 3.3% AEP (annual probability between 1 in 100 and 1 in 30).
- 'Low Risk'; 0.1% to 1% AEP (annual probability between 1 in 1000 and 1 in 100).
- 'Very Low Risk'; <0.1% AEP (annual probability less than 1 in 1000).

4.14. Examination of the EA's Flood Risk from Surface Water mapping for High Risk, Medium Risk, and Low Risk AEP flood events shows the site and its immediate vicinity is at risk of flooding in 'Low' surface water flood events (Figure 5).

Figure 5: EA Surface Water Flood Risk Mapping (Base map from Google Hybrid © Contains public sector information licensed under the Open Government Licence v3.0)

4.15. As can be seen in Figure 6, during the modelled 1 in 100 year event, surface water flooding does not affect the site. Dry access/egress should be possible in this event.

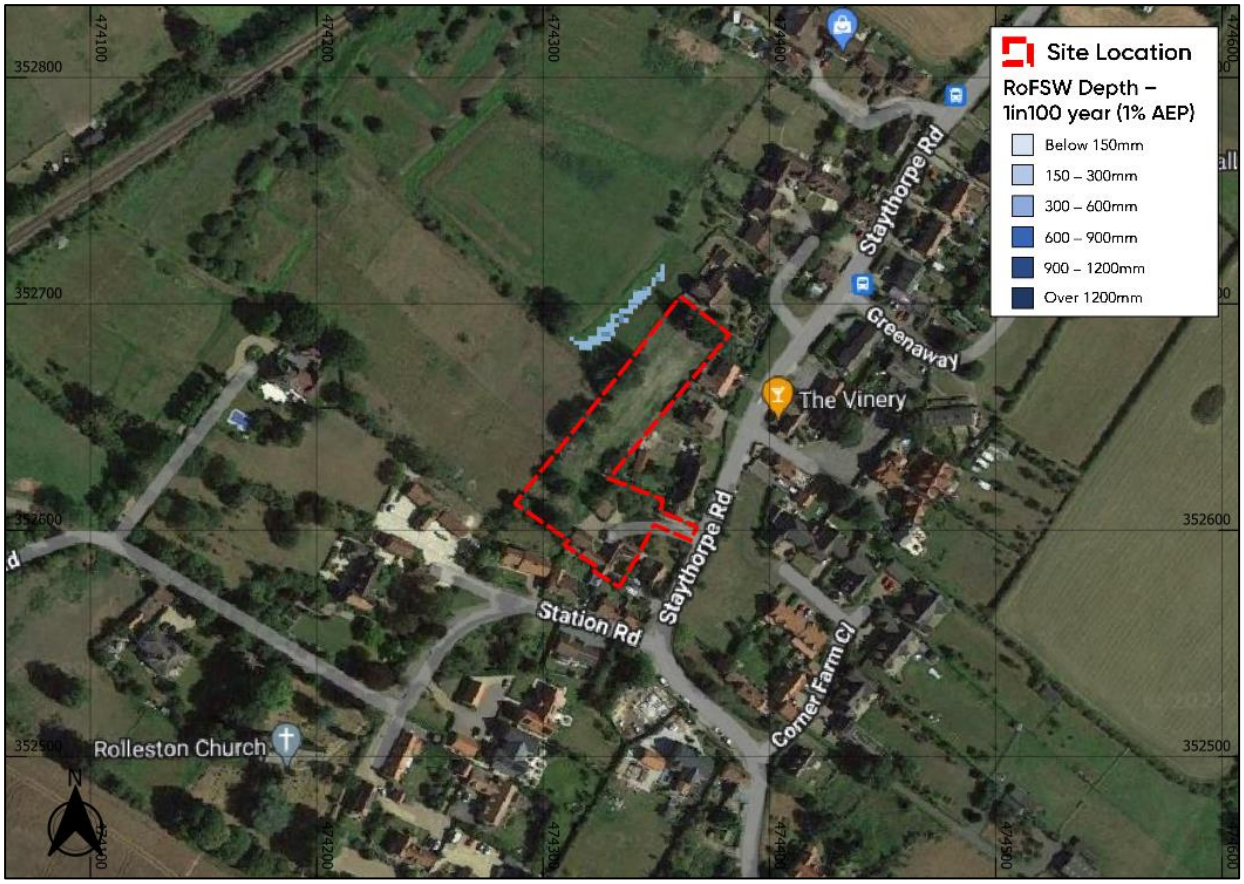

Figure 6: EA Surface Water Flood Risk Mapping 1 in 100 Year Depth (Base map from Google Hybrid © Contains public sector information licensed under the Open Government Licence v3.0)

4.16. As can be seen in Figure 7, during the modelled 1 in 1000 year event, surface water flooding depths reach 300mm to 600mm on the site. The proposed development footprint is partially affected (approximately 5%) by modelled flood depths of between 150mm to 300mm.

4.17. The Hazard rating along the north and south of the access road (Staythorpe Road), is low to moderate meaning safe access/egress could be affected in this event (Figure 8). If safe access/egress is not possible then refuge should be taken within the building.

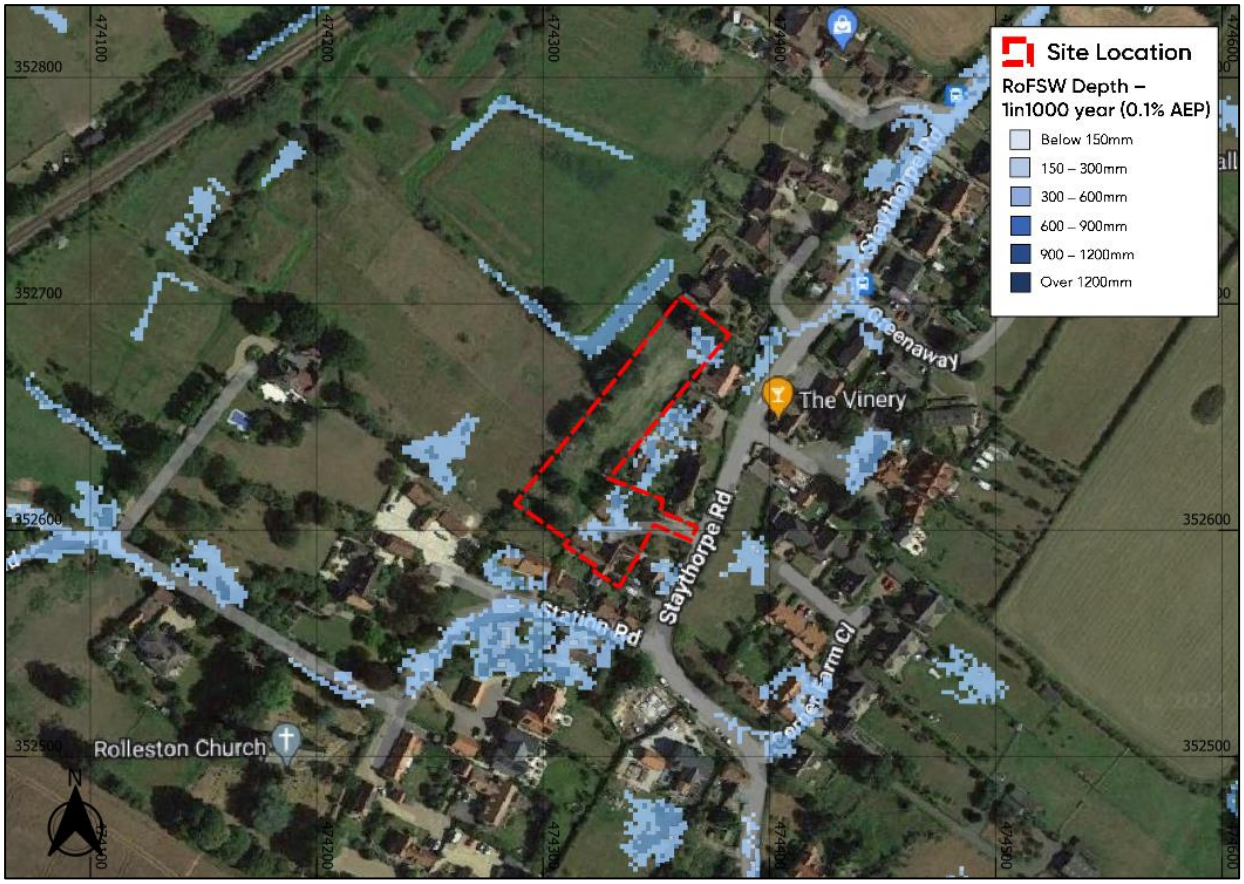

Figure 7: EA Surface Water Flood Risk Mapping 1 in 1000 Year Depth (Base map from Google Hybrid © Contains public sector information licensed under the Open Government Licence v3.0)

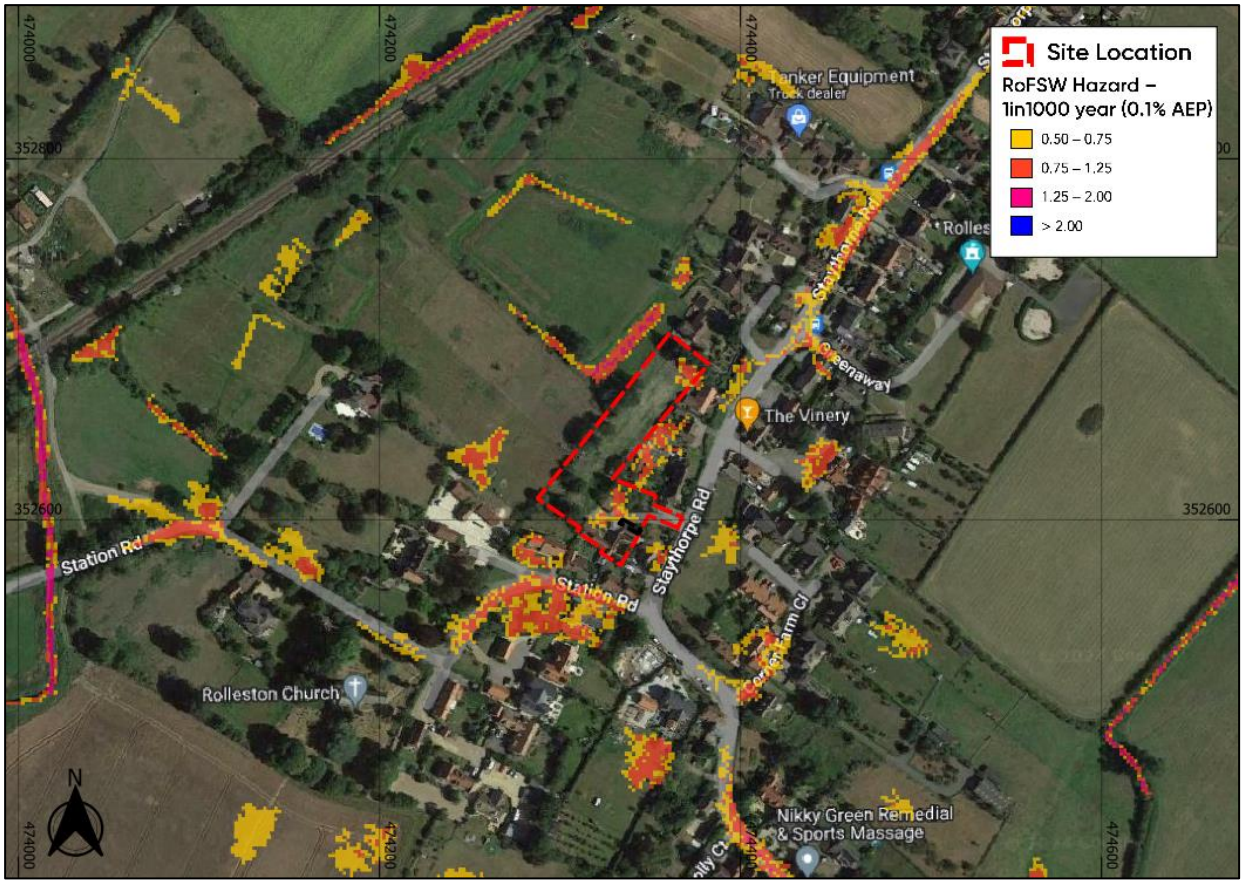

Figure 8: EA Surface Water Flood Risk Mapping 1 in 1000 Year Hazard (Base map from Google Hybrid © Contains public sector information licensed under the Open Government Licence v3.0)

4.18. The SFRA provides mapping of historical surface water flood incident records kept by the local authority. No historical surface water incidents have been recorded in the vicinity of the site.

4.19. Based on the data above, it can be considered that the risk to the site from surface water flooding is low. As such no other mitigation measures will be recommended, beyond the EA Standing Advise as recommended in the fluvial section.

Reservoirs

4.20. Flooding can occur from large waterbodies or reservoirs if they are impounded above the surrounding ground levels or are used to retain floodwater. Although unlikely, reservoirs and large waterbodies could overtop or breach leading to rapid inundation of the downstream floodplain.

4.21. According to the EA's Flood Risk from Reservoirs mapping the site is at risk of flooding in the event of a breach at multiple reservoirs (Figure 9). The worst reservoir failure model is a 'wet day'

scenario meaning that it would have to happen at the same time as other flooding for there to be enough water to reach the site.

Figure 9: EA Reservoir Flood Risk Mapping (Base map from Google Hybrid © Contains public sector information licensed under the Open Government Licence v3.0)

4.22. All large reservoirs must be inspected and supervised by reservoir panel engineers as detailed by the Reservoirs Act 1975 in England and Wales. The EA are responsible to ensure that reservoirs are inspected regularly, and essential safety work carried out. As reservoirs are highly managed the maximum flood extent provided in the EA Risk of Flooding from Reservoirs mapping is considered a worst-case scenario.

4.23. As reservoir flooding is unlikely and the modelled flood depths are based on the worst-case scenario, flooding from this source may be considered as a relatively low risk.

Groundwater

4.24. Groundwater flooding occurs in areas where underlying geology is permeable, and water can rise within the strata sufficiently to breach the surface.

4.25. The British Geological Survey's (BGS) mapping shows superficial deposits of Holme Pierrepont Sand and Gravel Member comprised of sand and gravel underlying the site.

4.26. The closest Historical BGS borehole SK75SW14 was approximately 200m east from the site and was bored to a depth of 7.1m. Groundwater was encountered at 2.1m.

4.27. The SFRA outlined historic incidents of groundwater flooding collect by the Newark and Sherwood District Council. The site, or the postcode that it is located in, was not named as an areas that has had historical groundwater flooding.

4.28. As the development proposals do not include any proposed basements, the risk from groundwater to the development is considered to be low.

Sewers

4.29. Foul or surface water sewers can be a cause of flooding if the drainage network becomes overwhelmed, either by blockage or due to local development beyond the designed capabilities of the drainage system.

4.30. The SFRA provides information on historical sewer flooding collected by Severn Trent Water. It is sated that in Rolleston there is:

> *'No history of historic sewer flooding'*

4.31. The development is therefore considered to be at low risk of flooding from sewers.

5. Flood Risk Mitigation

Fluvial

5.1. The site is located in Flood Zone 3, but the proposed development footprint is located in Flood Zone 2. It can be considered that the site is at low to moderate risk from fluvial flooding. As such, EA Standing Advice for Minor Developments will be recommended: finished floor levels of the proposed extension are to match the existing finished floor levels.

5.2. Furthermore, as a precaution, it is recommended that the extension is built in a flood resilient manner in accordance with *Improving the Flood Performance of New Buildings - Flood Resilient Construction*[9]. The following measures are recommended where practical:

- *Water resistant internal render and floor screed.*
- *Damp proof membranes should be included within the design of the dwelling to minimise the passage of water through ground floors. Damp proof membranes to be incorporated into the ground floor to at least 300mm above threshold level.*
- *Air brick covers to be installed.*
- *Non-return valves should be installed on all new drainage.*
- *All new plumbing insulation to be of closed cell design.*

Pluvial

5.3. The proposed development is only affected in the modelled 1:1000 year event and as such is at low risk of surface water flooding. As such, no additional mitigation measures beyond those for fluvial are recommended.

5.4. Dry access/egress should be possible in the design 1 in 100 year modelled flood event on Staythorpe Road.

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[9]https://assets.publishing.service.gov.uk/media/602d673ee90e0709e8d085d8/Improving_the_Flood_Resilience_of_Buildings_Through_Improved_Materials__Methods_and_Details_Technical_Report.pdf

Tidal, Canals, Reservoirs, Groundwater and Sewers

5.5. Flood risk from these sources is deemed to be low, therefore mitigation is not required.

Increase to Flood Risk Elsewhere

5.6. The proposed development is for the construction of an extension to the existing dwelling on site. An extension to the existing building to provide a larger habitable space as such, the proposal constitutes a Minor Development under the NPPF.

5.7. Paragraph 051 of the Flood Risk and Coastal Change Planning Practice Guidance (PPG) states:

> *Minor developments are unlikely to raise significant flood issues unless:*
>
> - *they would have an adverse effect on a watercourse, floodplain or its flood defences;*
> - *they would impede access to flood defence and management facilities, or;*
> - *where the cumulative impact of such developments would have a significant effect on local flood storage capacity or flood flows.*

5.8. As such, the proposed development in isolation should have a negligible impact on flood risk elsewhere.

Flood Warnings

5.9. The site is in the Environment Agency (EA) 'River Trent at Rolleston' flood warning service area. This service allows site owners to register an address along with contact details so that, in the event of a flood being forecast, they are sent an alert. As a further precaution and risk reduction, the owner of the site should sign up.

5.10. Flood warnings/alerts can be enforced at any time of the day or night. Signing up for this service provides occupants some notice before a flood event. The amount of time afforded before a flood occurs depends on the site-specific location (e.g. proximity to the source of flooding, topography of the surrounding area) and the flood mechanism (e.g. bank over topping versus a breach event). Flood alerts and warnings provide occupants with time to take necessary action, e.g. communication of the risk of flooding to occupants etc, evacuation of occupants offsite or to a safe level, removal of valuable items out of reach of flooding and the mounting of site-specific flood defences.

6. Conclusions

6.1. This FRA has been undertaken with reference to the requirements of NPPF and Planning Practice Guidance with respect to the development at Pear Tree Farm, Staythorpe Road, Rolleston, Newark, NG23 5SG. It has been written to support a householder planning application and prepared with due consideration to the nature of the proposed development to provide the appropriate level of detail.

6.2. An assessment of the risk of flooding from all sources has been undertaken and is summarised in the table below:

Source of Flooding	Flood Risk Summary
Fluvial	The site is located in Flood Zone 3, but the proposed development footprint is located in Flood Zone 2. It can be considered that the site is at low to moderate risk from fluvial flooding. As such, EA Standing Advice for Minor Developments will be recommended: finished floor levels of the proposed extension are to match the existing finished floor levels. Furthermore, as a precaution, it is recommended that the extension is built in a flood resilient manner in accordance with Improving the Flood Performance of New Buildings - Flood Resilient Construction
Pluvial	The proposed development is only affected in the modelled 1:1000 year event and as such is at low risk of surface water flooding. As such, no additional mitigation measures beyond those for fluvial are recommended. Dry access/egress should be possible in the design 1 in 100 year modelled flood event on Staythorpe Road.
Tidal Canals Reservoirs Groundwater Sewers	The site is considered to be at low risk from these sources.

6.3. The FRA supports the householder planning application and demonstrates that there is an acceptable level of flood risk to the site if the mitigation strategies recommended are

implemented in the scheme. The development does not increase flood risk off site or to the wider area.

6.4. This Flood Risk Assessment should be submitted as part of the planning application to satisfy the requirements under NPPF.

Appendix A - Development Proposals

Rev. No.	Amendment.	Date.
A	Drainage updated following Client drainage survey.	21.11.23

SURVEY NOTES

- This is a dimensional survey only and is not a structural or condition survey.
- The positions of all walls and boundaries etc., should be checked on site and adjustments made when setting out.
- As parts of the building are not square or upright the positions of some walls etc. have been averaged out, Wall thickness and party wall thickness have been interpolated from the last measurable point.
- Elevational elements and details of the building, as drawn are indicative.
- Other elements of the building that are inaccessible have been interpolated from parts that have been measured.
- The site plan is based on an OS map.
- The property owner is to comply with the Party Wall Act here appropriate.

Inspection Chamber with assumed drainage run.

Inspection Chamber with assumed drainage run.

Rear Courtyard Garden

(Area not surveyed)

Radiator.

Radiator.

Radiator.

Radiator.

Radiator.

No door.

Fridge / Freezer.

Kitchen (Shown diagrammatically).

3675

Island.

Hob & Oven.

Sink.

Conservatory

Lounge

2285

Log Burner & Flue.

Roof Hatch (approx).

Cylinder.

Plant

Ground Source Heat Pump.

Hallway

3595

Radiator.

Consumer Unit.

WC

Washing Machine.

EM

RWP

Ground Source Heat Pump Pipes

RWP

RWP

WATER BUTT

Electric Pole.

Key:

Existing Structure

Area not fully surveyed

NOTE: Information based upon initial investigation

Scale Bar: 1:50

0 0.5m 1m 2m 3m

GROUND FLOOR PLAN

PART SURVEY ONLY

MH3

Inspection Chamber with assumed drainage run.

MH2

Inspection Chamber with assumed drainage run.

MH1

SURVEY

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esp design architecture

Client: Mr & Mrs Osborn

Project: Pear Tree Farm, Staythorpe Road, Rolleston Nottinghamshire, NG23 5SG

Project Number: 21.1342.O

Drawing Title: Existing Ground Floor Plan

Scale: 1:50 @ A3

Drawn By: DE

Drawing Number: 01

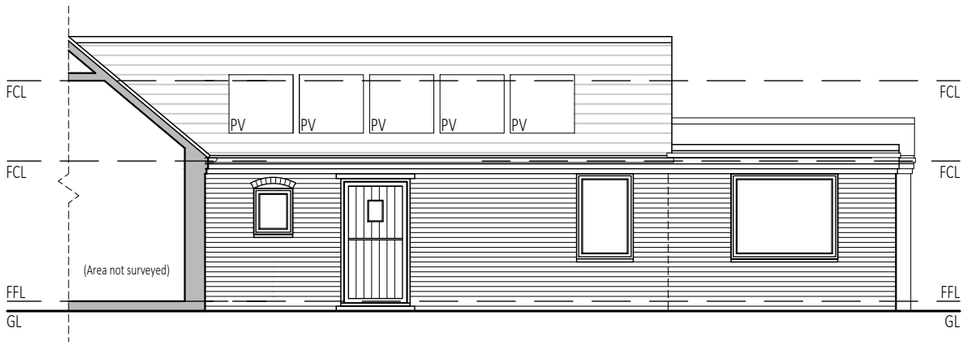
Checked By: ESP

Revision: A

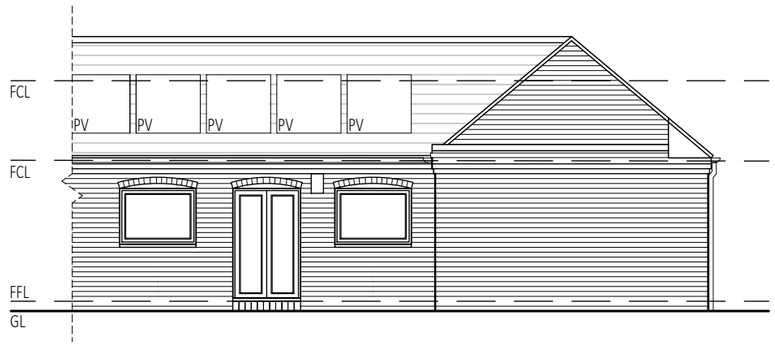
Rev. No.	Amendment.	Date.

FRONT ELEVATION
PART SURVEY ONLY

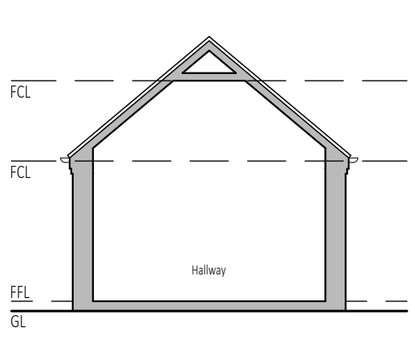
SIDE ELEVATION
PART SURVEY ONLY



REAR ELEVATION
REAR COURTYARD ELEVATION
PART SURVEY ONLY



SIDE ELEVATION
REAR COURTYARD ELEVATION
PART SURVEY ONLY



SECTION
PART SURVEY ONLY

SURVEY NOTES

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- The site plan is based on an OS map.
- The property owner is to comply with the Party Wall Act here appropriate.

Key:

- Roof Tiles
- Brickwork
- Area not fully surveyed

NOTE: Information based upon initial investigation

Scale Bar : 1 : 100

0 1m 2m 3m 4m 5m 6m

SURVEY

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Client
Mr & Mrs Osborn

Project
Pear Tree Farm, Staythorpe Road, Rolleston
Nottinghamshire, NG23 5SG

Project Number
21.1342.O

Drawing Title
Existing Elevations & Section

Scale
1:100 @ A3

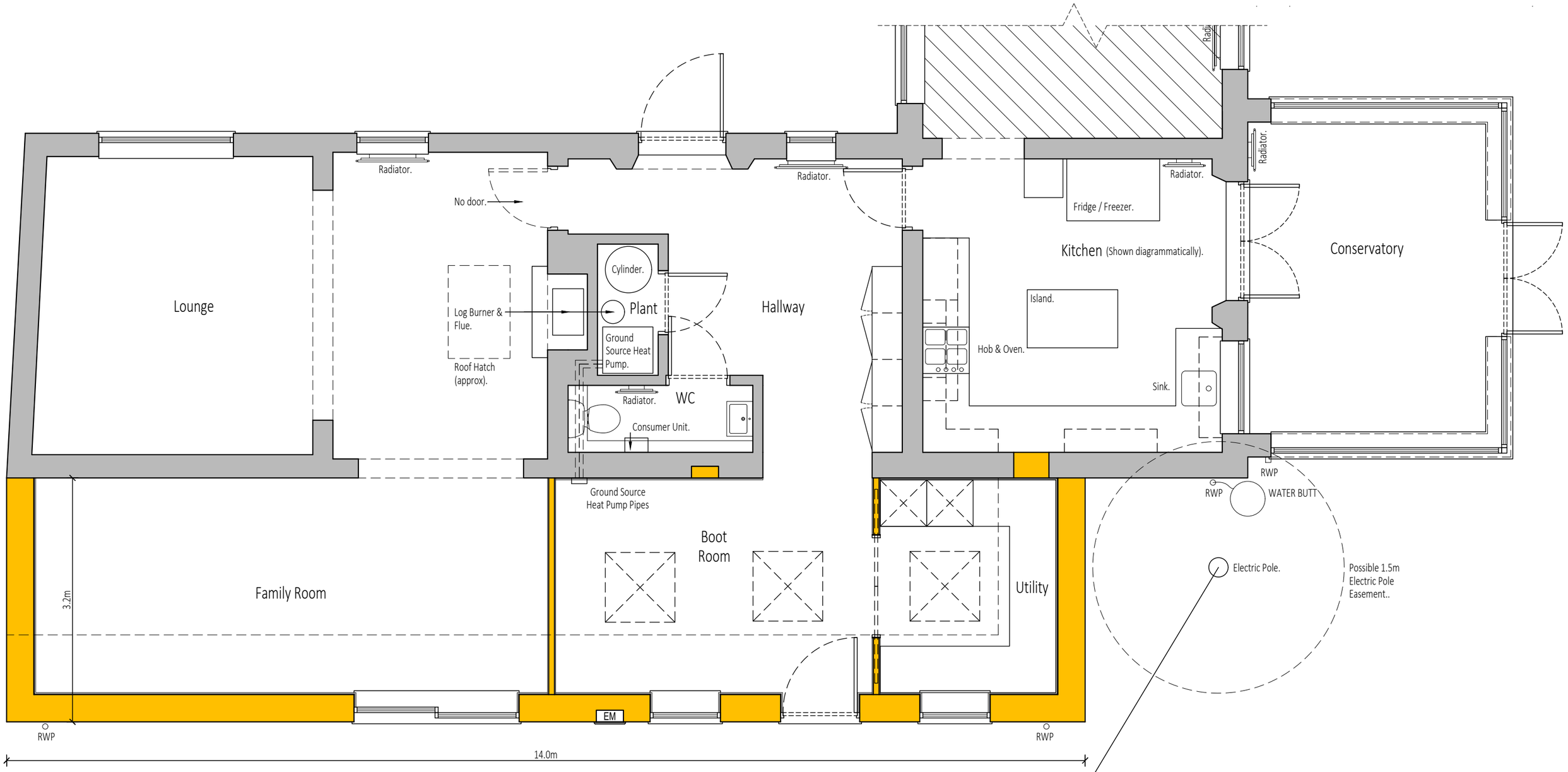
Drawn By
DE

Drawing Number
02

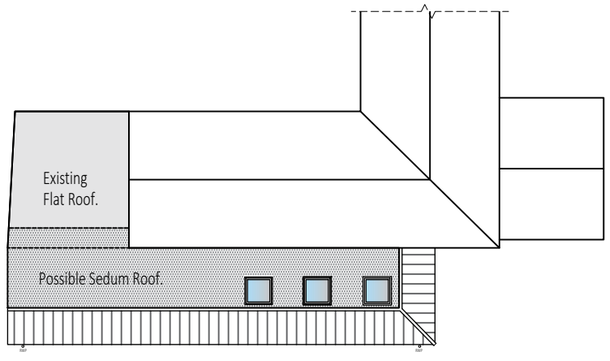
Checked By
ESP

Revision
–

Rev. No.	Amendment.	Date.



GROUND FLOOR PLAN



INDICATIVE ROOF PLAN

Key:

- Existing Structure
- Proposed Structure

Scale Bar : 1:50

0 0.5m 1m 2m 3m

PRE-PLANNING

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Project: Pear Tree Farm, Staythorpe Road, Rolleston Nottinghamshire, NG23 5SG

Project Number: 21.1342.O

Drawing Title: Proposed Ground Floor Plan

Scale: 1:50 @ A3

Drawn By: DE

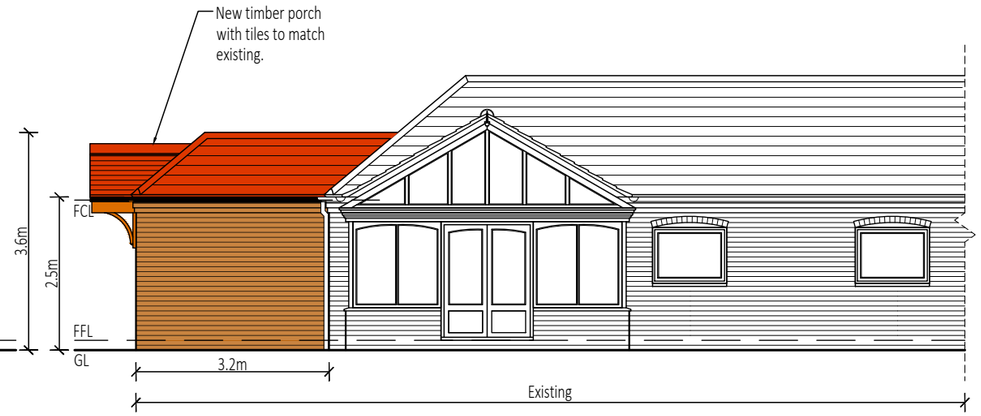
Drawing Number: 201

Checked By: ESP

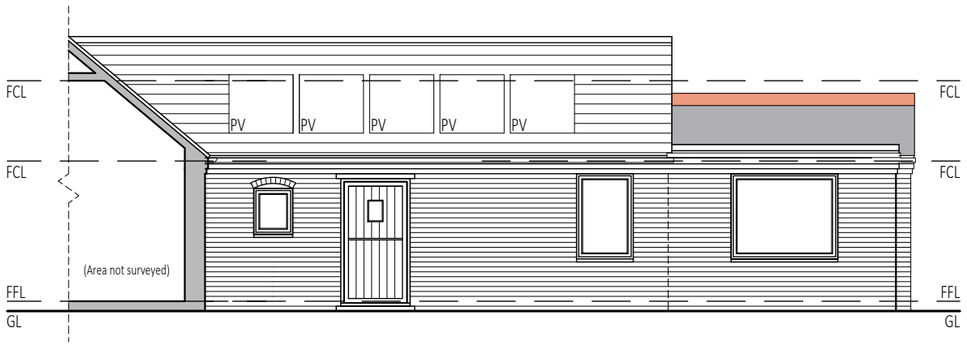
Revision: .

Rev. No.	Amendment.	Date.

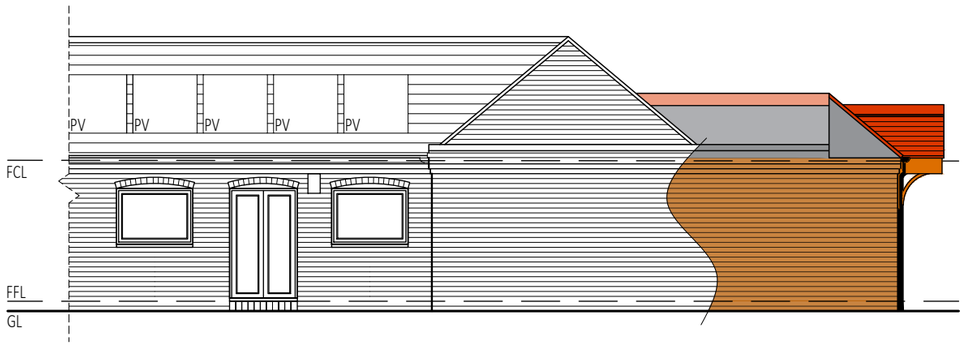
FRONT ELEVATION



SIDE ELEVATION



REAR ELEVATION



SIDE ELEVATION

Key:

Proposed Roof Tiles

Proposed Brickwork

NOTE: Information based upon initial investigation

Scale Bar : 1:100

0 1m 2m 3m 4m 5m 6m

PRE-PLANNING

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Client: Mr & Mrs Osborn

Project: Pear Tree Farm, Staythorpe Road, Rolleston Nottinghamshire, NG23 5SG

Project Number: 21.1342.O

Drawing Title: Proposed Elevations

Scale: 1:100 @ A3

Drawn By: CM

Drawing Number: 202

Checked By: ESP

Revision: .

Scale Bar 1:500

0 25m 50m

10m 20m 30m 40m

N

BLOCK SURVEY PLAN

PRE-PLANNING

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Client: Mr & Mrs Osborn	Drawing Title: Block Survey Plan
Project: Pear Tree Farm, Staythorpe Road, Rolleston Nottinghamshire, NG23 5SG	Scale: 1:500 @ A3
	Drawn By: CM
Project Number: 23.1427.O	Drawing Number: 211
	Checked By: ESP
	Revision: –

Scale Bar 1:500

0 25m 50m

10m 20m 30m 40m

N

BLOCK SURVEY PLAN

Proposed 1 storey front extension

PRE-PLANNING

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esp design architecture

Client: Mr & Mrs Osborn

Project: Pear Tree Farm, Staythorpe Road, Rolleston Nottinghamshire, NG23 5SG

Project Number: 23.1427.O

Drawing Title: Proposed Block Survey Plan

Scale: 1:500 @ A3

Drawn By: CM

Drawing Number: 212

Checked By: ESP

Revision: –