

REPORT

NPPF Flood Risk Assessment

Pump House, Farleigh Lane, East Farleigh, Maidstone,
Kent, ME16 9NB

Client: Chord Electronics LTD.

Reference: 6870-AEA-ZZ-XX-RP-Z-2500

Status: Final

Date: 03 February 2023

Project Related

AMBIENTAL
ENVIRONMENTAL ASSESSMENT

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Glossary

| Term | Definition |
|-------------------------------|---|
| AP | Annual Probability is the probability of a rainfall or tidal event occurring within any one year. For example, an event of a 1 in 100 year return period has an AP of 1:100 or 1%. |
| Flood Defences | Artificial structures maintained to a set operational level designed to protect land people and property from tidal and fluvial flood sources to an established chance of happening in any year threshold. |
| Flood Source: Fluvial (River) | When flows within watercourses exceed the capacity of the watercourse causing out of bank flows. |
| Flood Source: Groundwater | Groundwater flooding is usually the result of prolonged wet weather causing groundwater levels to rise sufficiently to either emerge at surface or to cause flooding of below ground infrastructure, such as basements. |
| Flood Source: Surface Water | When rainfall causes overland flows which exceed the capacity of the drainage network, causing flooding to land that is normally dry. |
| Flood Source: Tidal | When high tide events overtop the shoreline to cause flooding to land behind. |
| Flood Zone 1 | Low Probability. Land having a less than 0.1% annual probability of river or sea flooding |
| Flood Zone 2 | Medium Probability. Land having between a 1.0% and 0.1% annual probability of river flooding; or land having between a 0.5% and 0.1% annual probability of sea flooding. |
| Flood Zone 3 (A) | High Probability. Land having a 1.0% or greater annual probability of river flooding; or Land having a 0.5% or greater annual probability of sea. |
| Flood Zone 3 (B) | <p>Functional Floodplain. According to the Planning Practice Guidance (2022) 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:</p> <ul style="list-style-type: none"> 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). <p>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)</p> |
| Flood Zone Map | The Environment Agency has produced a mapping data set which covers England and provides the general extents of Flood Zones 1, 2, and 3. However the national data set available online does not differentiate between Flood Zone 3 (A) and 3 (B). |
| Freeboard | In flood risk management Freeboard is a term used to identify the vertical difference between the design flood level, and the design height of any flood mitigation measures. For instance, if a pond had bank heights of 9.0m and the water level was at 8.6m the freeboard would be 0.4m (9.0-8.6). For river flooding, a freeboard of 0.3m is usually applied, for tidal 0.6m, and for surface water 0.15m. |
| LiDAR | Light Detection and Ranging (LIDAR) is an airborne mapping technique, which uses a laser to measure the distance between the aircraft and the ground. Up to 500,000 measurements per second are made of the ground, allowing highly detailed terrain models to be generated at spatial resolutions of between 25cm and 2 metres. |
| FWEP | Flood Warning and Emergency Plan. This is a document that should set out the steps that shall be taken by those on site, to arrive at a point safe from flood risk. |

| Term | Definition |
|-----------------------|--|
| Non-Major Development | 'Non major development' is any development falling below the above thresholds but excluding minor development. For example, a planning application for 8 dwellings an office building creating 750 square metres of floor space, or a development with a site area of 0.4 hectares. |
| Major Development | Means development involving any one or more of the following: <ol style="list-style-type: none"> a) the winning and working of minerals or the use of land for mineral-working deposits b) waste development c) the provision of dwellinghouses where – <ol style="list-style-type: none"> i. the number of dwellinghouses to be provided is 10 or more; or ii. the development is to be carried out on a site having an area of 0.5 hectares or more and it is not known whether the development falls within sub-paragraph (c) (i) d) the provision of a building or buildings where the floor space to be created by the development is 1,000 square metres or more; or e) development carried out on a site having an area of 1 hectare or more. <p>As defined by the Town and Country Planning (Development Management Procedure) (England) Order 2015 (Article 2) https://www.legislation.gov.uk/uksi/2015/595/article/2/made</p> |
| Main River | Defined on the Main River map and relate to rivers where the Environment Agency has the powers to carry out flood defence works. |
| Minor Development | Minor development means: <ul style="list-style-type: none"> • minor non-residential extensions (industrial/commercial/leisure etc): extensions with a floorspace not more than 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 (e.g. subdivision of houses into flats) or any other development with a purpose not incidental to the enjoyment of the dwelling. <p>Paragraph: 051 Reference ID: 7-051-20220825 Revision date: 25 08 2022 https://www.gov.uk/guidance/flood-risk-and-coastal-change</p> |
| m AOD | Metres Above Ordnance Datum |
| OS | Ordnance Survey |
| Ordinary Watercourse | A watercourse which does not form part of a Main River. Works on Ordinary Watercourses usually require consent from either the Lead Local Flood Authority or the Internal Drainage Board. |
| QBAR | QBAR is the mean annual maximum flow rate, for a catchment which has an equivalent return period of 1 in 2.3 years |
| Return Period | The return period of a flood might be 100 years; otherwise expressed as its probability of occurring being 1 in 100, or 1% in any one year. If a flood with such a return period occurs, then this does not mean the next will occur in about one hundred years' time - instead, it means that, in any given year, there is a 1% chance that it will happen, regardless of when the last similar event was. Or, put differently, it is 10 times less likely to occur than a flood with a return period of 10 years (or a probability of 10%). |
| SuDS | Sustainable Drainage Systems, which are designed to manage surface water flows and mimic the Greenfield runoff from an undeveloped site. |
| Urban Creep | Urban creep is the conversion of permeable surfaces to impermeable over time e.g. surfacing of front gardens to provide additional parking spaces, extensions to existing buildings, creation of large patio areas. |

Executive Summary

Ambiental Environmental Assessment (AEA), a Company of Royal HaskoningDHV has been appointed by Chord Electronics LTD. to undertake a National Planning Policy Framework (NPPF) [1] compliant Flood Risk Assessment (FRA) for the Development Proposals located at Pump House, Farleigh Lane, East Farleigh, Maidstone, Kent, ME16 9NB.

The development proposal is for a vertical extension at roof level to provide additional business use.

According to the Flood Risk and Coastal Change Planning Policy Guidance, the Development Proposal would be classified as a Minor Extension (Standing Advice).

On the basis that the development proposals are for a minor extension in Flood Zone 2 or 3, the Environment Agency's Standing Advice will apply [2].

According to Annex 3 of the NPPF, the Development Proposal's Vulnerability Classification is "Less Vulnerable", which consists of the following uses:

*"Police, ambulance and fire stations which are not required to be operational during flooding. **Buildings used for shops; financial, professional and other services; restaurants, cafes and hot food takeaways; offices; general industry, storage and distribution; non-residential institutions not included in the 'more vulnerable' class; and assembly and leisure. Land and buildings used for agriculture and forestry. Waste treatment (except landfill* and hazardous waste facilities). Minerals working and processing (except for sand and gravel working). Water treatment works which do not need to remain operational during times of flood. Sewage treatment works, if adequate measures to control pollution and manage sewage during flooding events are in place. Car parks. "***

The key findings of the Flood Risk Assessment are as follows:

- The Application Site is not considered to be at risk from flooding in a 1 in 20 year undefended and defended fluvial flood event.
- The Environment Agency data shows that the Application Site could experience flooding in a 1 in 100 year undefended fluvial event. The Application Site could experience a flood level of approximately 9.998 m AOD with a flood depth of approximately 0.93m.
- Data provided by the Environment Agency demonstrates that the Application Site could experience flooding in a 1 in 100 year defended fluvial event. The Application Site could experience a flood level of approximately 9.706 m AOD with a flood depth of approximately 0.64 m. As the development proposal is for the vertical extension at roof level to provide greater business use space, it is therefore considered to be at **low risk** from fluvial flooding.
- The Application Site is at **low risk** from Surface Water, Groundwater and Sewer flooding.

A summary of the flood risk for the Application Site for each source requiring consideration under the NPPF is presented as Table 1, overleaf.

The Flood Risk Assessment has been undertaken in accordance with the requirements of the NPPF and it can be demonstrated that the Development Proposals are compatible with the predicted flood risk profile, including climate change allowance over the development lifetime.

It should be noted that the Development Proposals are not predicted to increase the risk of flooding to others over the development lifetime. Consequently, it is concluded that, with regards to the Flood Risk requirements of the NPPF, the Development Proposals are acceptable.

Table 1: Flood Risk Overview

| Criteria | Summary |
|---|--|
| Site Setting | |
| Site Address | Pump House, Farleigh Lane, East Farleigh, Maidstone, Kent |
| Client Name | Chord Electronics LTD. |
| Redline Site Boundary | Approximately 422 m ² |
| Ordnance Survey Grid Reference | TQ734535 (6 Figure) |
| Development Classification | |
| Development Proposals | It is understood the development proposal is for the vertical extension at roof level to provide additional business use. |
| Major, Non-Major, or Minor Development? | Minor Extension (Standing Advice) (EA Standing Advice Applies) |
| Vulnerability Classification | Less Vulnerable |
| Sequential Test and Exception Test | The development proposals are for a Minor Extension. Consequently, the Sequential Test, and therefore the Exception Test do not need to be applied |
| Site Parameters | |
| Topographic Levels (LiDAR) | Data computed via RasterStats: Average Topographic Level: 9.64 m AOD Highest Topographic Level: 13.59 m AOD Minimum Topographic Level: 7.55 m AOD |
| Ordinary Watercourses (within 500m) | No ordinary watercourses are located in close proximity to the Application Site. |
| Main Rivers (within 500m) | The River Medway is located approximately 43 m south of the site. |
| BGS Hydrogeological Setting | Aquifers with significant intergranular flow: Highly productive aquifer. |
| BGS Lithology | Superficial Geology: None Present Bedrock Geology: Hythe Formation – Sandstone and limestone, interbedded. |
| BGS Borehole Record | BGS Borehole records indicate a borehole on site however, these records date to 1955 and are considered to be outdated. |
| Flood Risk | |
| Historic Records | Historical flooding has previously affected the site, please see section 4. |
| Flood Map for Planning Classification | Flood Zone 3 |
| Coastal Flood Risk Analysis | The development proposals are not considered to be at risk from coastal flooding. |
| River Flood Levels | Environment Agency <u>Undefended</u> Flood Levels: <ul style="list-style-type: none"> 1 in 20 Year flood level: Application Site not affected. 1 in 100 Year flood level: 9.998 m AOD. Environment Agency <u>Defended</u> Flood Levels: <ul style="list-style-type: none"> 1 in 20 Year flood level: Application Site not affected. 1 in 30 Year flood level: Application Site not affected. 1 in 100 Year flood level: 9.706 m AOD. |
| Surface Water Flood Risk | 1 in 30: None 1 in 100: None 1 in 1,000: None Based on the Environment Agency's risk of flooding from surface water mapping the site is classified as being at Very Low Risk of flooding from surface water. |
| Groundwater Flood Risk | According to data provided by the British geological Survey, the Application Site is situated in an area with 'limited potential for groundwater flooding to occur (Low Risk)' |
| Residual Risk: Sewer Flooding Risk | Where sewers exist, there is a residual risk of sewer flooding because of either a failure, usually a collapse or blockage, or because of the system's capacity being exceeded. Adopting a precautionary approach to the potential for sewer flooding or other events that exceed the design standard of infrastructure, appropriate mitigation measures should be included in the design of all new buildings and, where practicable, in the refurbishment or change of use of existing buildings. |

| Criteria | Summary |
|-------------------------------------|---|
| Residual Risk: Flood Defence Breach | Flood Defence Breach: The site is indicated to be located in an area that benefits from the presence of flood defences according data provided by the Environment Agency. Therefore, the site is indicated to be at risk as consequence of a breach of flood defences. |
| Residual Risk: Reservoir Failure | The Environment Agency risk of reservoir flooding indicates that the site is at risk as a result of a modelled reservoir failure. |
| Residual Risk: Canal Failure | According to the CEH Canals data, there no are canals within 500m of the site, therefore there may be a residual risk of flooding as a result of a canal breach. |
| Offsite Impacts | |
| Surface Water Management | As the development proposals are for the extension of the existing use, it is proposed to re-use the existing surface water drainage discharge, and to retrofit in appropriate Sustainable Drainage Systems (SuDS). |
| Floodplain Displacement | The Environment Agency Standing advice indicates that floodplain compensation is not required. |

1 Introduction

Ambiental Environmental Assessment (AEA), a Company of Royal HaskoningDHV, has been appointed by Chord Electronics LTD. to undertake a National Planning Policy Framework (NPPF) [1] compliant Flood Risk Assessment (FRA) for the Development Proposals located at Pump House, Farleigh Lane, East Farleigh, Maidstone, Kent ME16 9NB. The site will hereafter be referred to as the Application Site.

1.1 Requirement for Flood Risk Assessment

Under Section 14 of the NPPF, a Flood Risk Assessment (FRA) is required for Development Proposals which meet a range of conditions¹.

The NPPF states that an FRA needs to consider the risk of flooding to a property or site and demonstrate that the site will be safe over its lifetime (including identification of appropriate mitigation measures). The FRA also needs to demonstrate that the proposals will not increase flood risk to others.

The purpose of this assessment is to demonstrate that the Development Proposal can be satisfactorily accommodated without worsening flood risk for the area and without placing the development itself at risk of flooding. This assessment has been written in accordance with national guidance provided within the NPPF, the Planning Guidance, Flood risk and coastal change [3], DEFRA's National Standards for Sustainable Drainage [4], and Local Guidance and Policy Documents.

Based on the NPPF, a Flood Risk Assessment will be required as the Application Site is situated in Flood Zone 3.

1.2 Site Overview

The Application Site is located at Ordnance Survey grid reference TQ734535 (6 figure), and the redline boundary includes an area of approximately 422 m² (0.042 Ha), as indicated on Figure 1.

¹ i. Development in Flood Zones 2 and 3. ii. In Flood Zone 1, an assessment should accompany all proposals involving: sites of 1 hectare or more; iii. Land which has been identified by the Environment Agency as having critical drainage problems; iv. Land identified in a strategic flood risk assessment as being at increased flood risk in future; or, v. Land that may be subject to other sources of flooding, where its development would introduce a more vulnerable use.

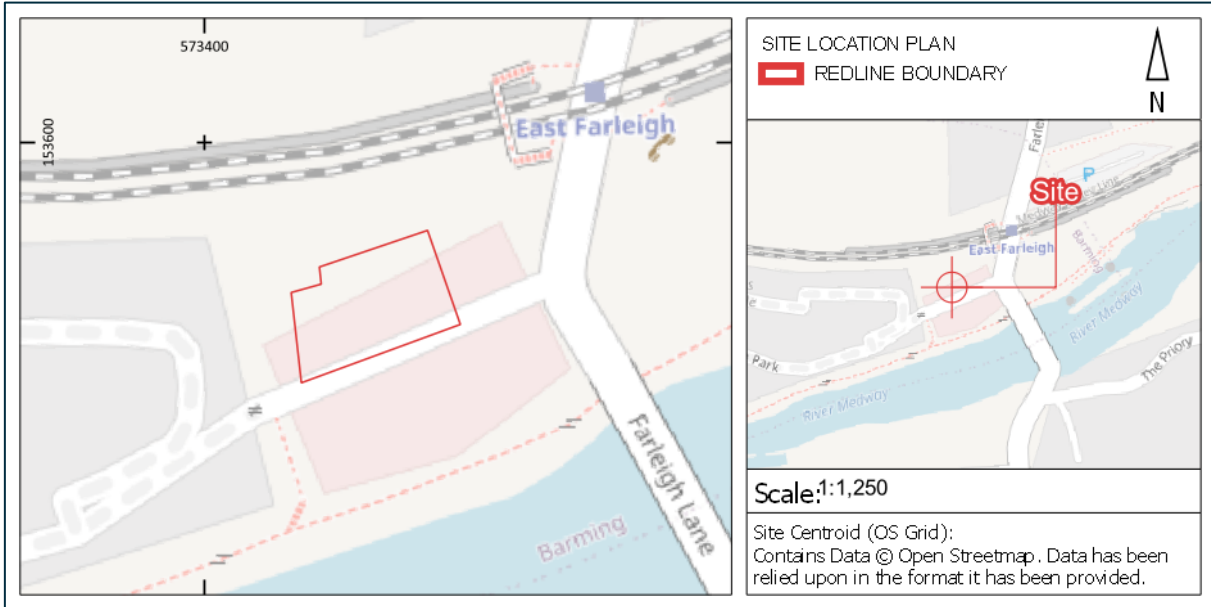


Figure 1: Site Location Plan

1.3 Current Site Usage

The Application Site currently comprises Business/Commercial Use, shown in an aerial image of the Application Site in Figure 2.

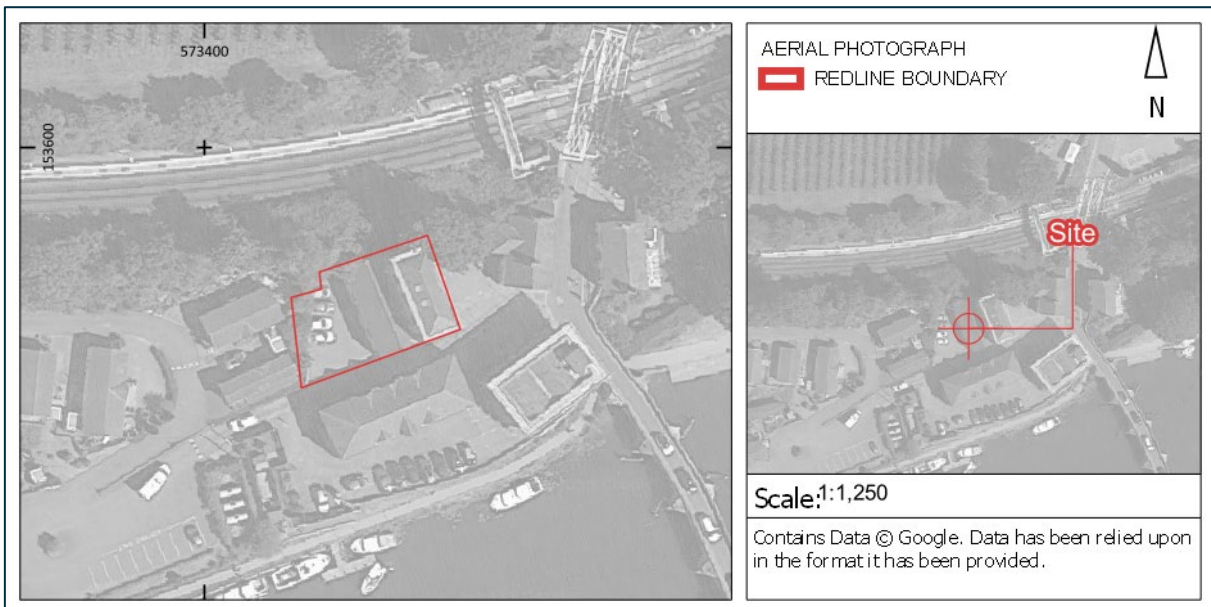


Figure 2: Aerial Photograph

1.4 Development Proposals

Vertical extension at roof level to provide additional business use, hereafter referred to as the Development Proposals. In accordance with the Planning Practice Guidance for Flood Risk and Coastal Change [5], the Development Proposals would be classified as a minor extension.

Further details of the Development Proposals are provided in Appendix A

1.5 Development Vulnerability Classification

The vulnerability classifications are summarised in Annex 3 of the NPPF identifies that the Development Proposals are for the Vertical extension at roof level to provide additional business use. It should be noted that as the proposals are for a Minor Extension to the existing use at the site, a Sequential Test, and therefore the Exception Test should not be applied.

1.6 Specific Requirement for Extensions and Change of Use.

Paragraph 168 of the NPPF states:

Applications for some minor development and changes of use (Footnote 56) 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 55.

Footnote 56:

This includes householder development, small non-residential extensions (with a footprint of less than 250m²) and changes of use; except for changes of use to a caravan, camping or chalet site, or to a mobile home or park home site, where the sequential and exception tests should be applied as appropriate

Footnote 55:

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

The development proposals are for a Minor Extension, and therefore under Footnote 56, the Sequential Test, and therefore the Exception Test do not need to be applied.

1.7 Specific issues for Minor Developments

The Planning Practice Guide (PPG) at paragraph 051, states that:

“Minor developments are unlikely to raise significant flood risk 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.*

2 Scope of Assessment

The following sources of flooding need to be assessed:

- i. **Coastal flooding.** When high tide events overtop the shoreline to cause flooding to land behind. This is usually the result of a combination of high tide events and storm surges.
- ii. **River flooding.** When flows within watercourses exceed the capacity of the watercourse, causing out of bank flows and resulting in flooding of adjacent areas.
- iii. **Surface Water flooding.** When rainfall causes overland flow rates and volumes which exceed the capacity of the drainage network, causing flooding to land that is normally dry.
- iv. **Groundwater flooding.** Usually, the result of prolonged wet weather, causing groundwater levels to rise sufficiently to either emerge at surface or to cause flooding of below ground infrastructure, such as basements.

As well as considering the risk of flooding from these primary sources, a FRA needs to consider the potential impact of a failure of flood defence or reservoir infrastructure; however, as the likelihood of these types of flooding are much lower, they are known as “residual risks”. The residual flood risks to be considered are:

- i. **Sewer Flooding.** The public sewer network within the UK is formed of a combination of lost rivers, old sewers, former private sewer systems, and more recent sewers installed to support developments. This results in a network that has areas that are prone to being overwhelmed or blocked. Areas with a history of sewer flooding are more likely (without intervention) to experience flood events in the future.
- ii. **Flood defence failure.** The consequence of a failure of part of a flood defence could result in the rapid release of water in an area that would otherwise not be at risk of flooding. If such an event were to occur, there could be very little warning time and therefore it is unlikely that prior evacuation from an area at risk could be achieved.
- iii. **Reservoir failure.** Although the likelihood of reservoir failure resulting in widespread flooding is extremely low² [6], the consequences of such an event need to be considered to inform appropriate emergency planning.

² Environment Minister Richard Benyon said: “While the risk of a reservoir failure is extremely low the safety of the public must remain our top priority and where there is even a small risk we need to make sure that we are prepared.”

3 Relevant Policy and Guidance

This Flood Risk Assessment has been developed in accordance with the guidance and legislation set out in the below documents:

3.1 National Policy

- Water Industry Act (1999) [7]
- EU Water Framework Directive (2000) [8]
- EU Floods Directive (2007) [9]
- The Flood Risk Regulations (2009) [10]
- Flood and Water Management Act (2010) [11]
- The Building Regulations, Part H (2015) [12]
- Town and Country Planning, Development Management Procedure, (England) Order (2015) [13]
- British Standards, Drain and sewer systems outside buildings (BS EN 752:2017) [14]
- National Planning Policy Framework (NPPF, 2021) [1]

3.2 National Guidance

- Non-statutory Sustainable Drainage Technical Standards (2015) [15]
- CiRIA SuDS Manual (C753, 2015) [16]
- Sector Guidance in relation to the adoption of sewerage assets by sewerage companies in England (October 2019) [17]
- Preparing a Flood Risk Assessment: Standing Advice, Environment Agency, and DEFRA (2022) [2]
- Flood Risk Assessments: Climate Change Allowances, Environment Agency (2020) [18]
- Flood Risk and Coastal Change Planning Practice Guidance (PPG, 2022) [3]

3.3 Local Policy

- Kent Local Flood Risk Management Strategy – 2017 2023³
- Maidstone Level 1 Strategic Flood Risk Assessment (2016)⁴

³ [Local-Flood-Risk-Management-Strategy-2017-2023.pdf \(kent.gov.uk\)](#)

⁴ [JBA Consulting Report Template 2015 \(maidstone.gov.uk\)](#)

3.4 Flood Zone Classification

The EA Flood Map for Planning (Figure 3) demonstrates that the Development Proposals are located within an area defined as Flood Zone 3.

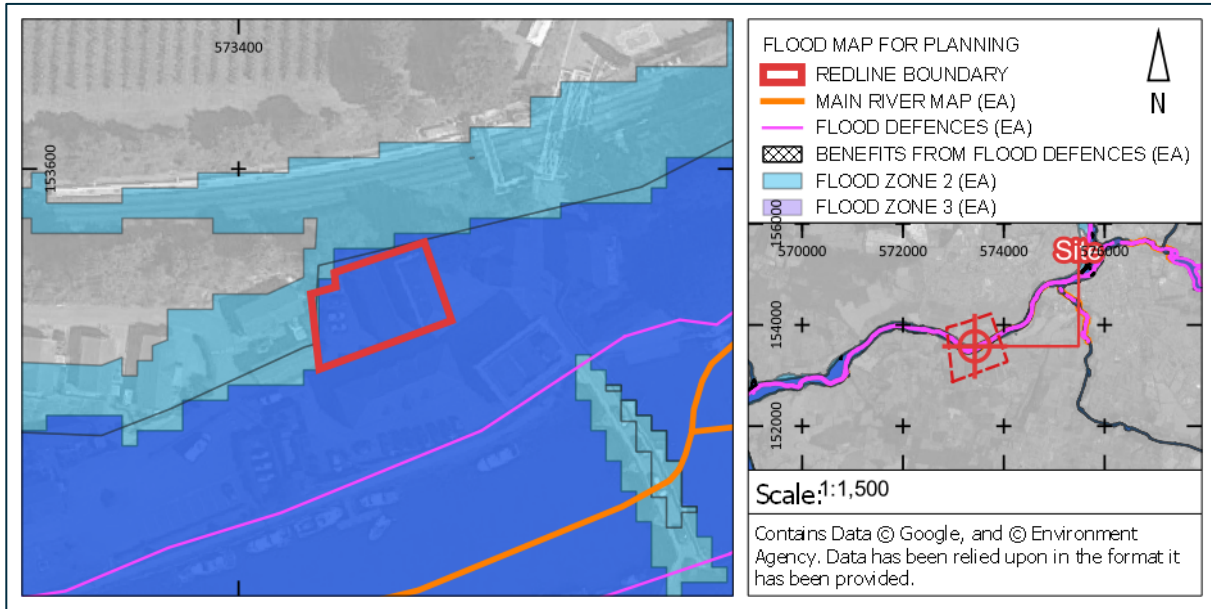


Figure 3: EA Flood Map for Planning

Table 2 of the Flood Risk and Coastal Change Guidance [3], reproduced in Table 2, presents the flood zone definitions.

Table 2: Flood Risk and Coastal Change, Table 1

| Flood Zone | Description |
|------------|--|
| 1 | Low Probability. This zone comprises land assessed as having a less than 0.1% annual probability of river or sea flooding in any year. |
| 2 | Medium Probability. This zone comprises land assessed as having between a 1% to 0.1% annual probability of river flooding or between a 0.5% to 0.1% annual probability of sea flooding in any year. |
| 3a | High Probability. This zone comprises land assessed as having a 1.0% or greater annual probability of river flooding or a 0.5% or greater annual probability of flooding from the sea in any year. |
| 3b | Functional Floodplain. This zone comprises land where water from rivers or the sea has to flow or be stored in times of flood. Land having a 3.3% or greater annual probability of flooding in any year. Or land that is designed to flood (such as flood storage areas) up to the 0.1% annual probability. |

4 Climate Change Allowances

Recent guidance under the UK Climate Change Projections 2018 (UKCP18)⁵ predict that future climate change will lead to changing UK regional weather patterns, resulting in increased rainfall during the winter and the occurrence of more extreme rainfall events during the summer months.

The Environment Agency published guidance on climate change allowances for Flood Risk Assessments in February 2016, with the latest update in May 2022 [19].

The current Environment Agency climate change allowances are classified based on how likely that scenario is predicted to occur.

Climate change allowances vary by region with tidal allowances being based on River Basin Districts, and fluvial and surface water climate change allowances being based on Management Catchments, as shown in Figure 4.

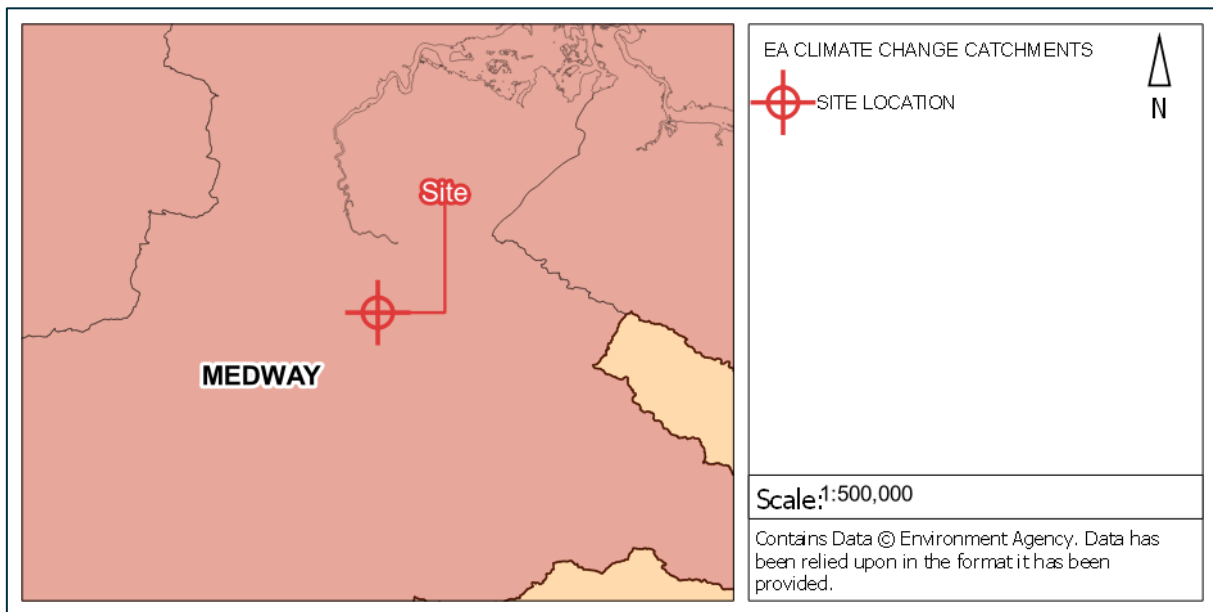


Figure 4: Management Catchments (excerpt)

4.1 Tidal Climate Change Allowances

The Application Site is located in South East area of England. The 2125 Higher Central Climate Change allowance for sea level rise total until 2125 is m and the Upper End allowance is m compared to the 1981 to 2000 baseline, as indicated in Table 3.

Table 3: Sea level allowances for each epoch in mm for each year (based on a 1981 to 2000 baseline) – the total seal level rise for each epoch is in brackets.

| Epoch | Higher Central Allowance | Upper End Allowance |
|---------------------------------------|--------------------------|---------------------|
| 2000 to 2035 (mm) | 5.7 (200) | 6.9 (242) |
| 2036 to 2065 (mm) | 8.7 (261) | 11.3 (339) |
| 2066 to 2095 (mm) | 11.6 (348) | 15.8 (474) |
| 2096 to 2125 (mm) | 13.1 (393) | 18.2 (546) |
| Cumulative Risk 2000 to 2125 (meters) | 1.20 | 1.60 |

⁵ Met Office Hadley Centre Climate Programme. UKCIP18. <https://www.metoffice.gov.uk/research/approach/collaboration/ukcp/index>

4.2 Fluvial Climate Change Allowances

The Application Site is located in the **Medway management catchment**. The 2080 Central Climate Change allowance for peak river flows is 27%, compared to the 1981 to 2000 baseline, as indicated in Table 4. It should be noted that the allowance to use varies depending on the development vulnerability and the Flood Zone applicable to the site, as indicated in Table 5.

Table 4: Peak River flow climate change allowances

| Epoch | Central Allowance | Higher Central | Upper End Allowance |
|-------|-------------------|----------------|---------------------|
| 2020s | 14% | 19% | 29% |
| 2050s | 15% | 21% | 37% |
| 2070s | 27% | 37% | 62% |

Table 5: Fluvial climate change allowances to be applied based on the vulnerability classification

| Vulnerability Classification | Flood Zone 1, 2, or 3a | Flood Zone 3b |
|------------------------------|--|---|
| Essential Infrastructure | Higher central allowance | Higher Central Allowance |
| Highly Vulnerable | Central allowance (development should not be permitted in Flood Zone 3a) | Development should not be permitted, but where exceptions are appropriate, Higher Central |
| More Vulnerable | Central allowance | |
| Less Vulnerable | Central allowance | |
| Water Compatible | Central allowance | Central allowance |

4.3 Surface Water Climate Change Allowances

The Application Site is located in the **Medway management catchment**, climate change allowances are based on a 1981 to 2000 baseline. The 2070, 30 Year Central Climate Change allowance for peak rainfall intensity is 20%, as indicated in Table 6. The 2070, 100 Year Central Climate Change allowance for peak rainfall intensity is 20%, as indicated in Table 7.

Table 6: Peak rainfall intensity allowance in small catchments, 3.33% Annual Exceedance Probability

| Epoch | Climate Change Allowances | |
|-------|---------------------------|-----------|
| | Central | Upper End |
| 2050s | 20% | 35% |
| 2070s | 20% | 35% |

Table 7: Peak rainfall intensity allowance in small catchments, 1% Annual Exceedance Probability

| Epoch | Climate Change Allowances | |
|-------|---------------------------|-----------|
| | Central | Upper End |
| 2050s | 20% | 45% |
| 2070s | 20% | 40% |

5 Site Characteristics

5.1 Site Topography

Ground levels within the Application Site have been determined by reviewing Environment Agency 2m LiDAR data. On average, the ground levels are 9.64 m AOD, with a highest topographic level of 13.59 m AOD and a minimum topographic level of 7.55 m AOD (see Figure 5).

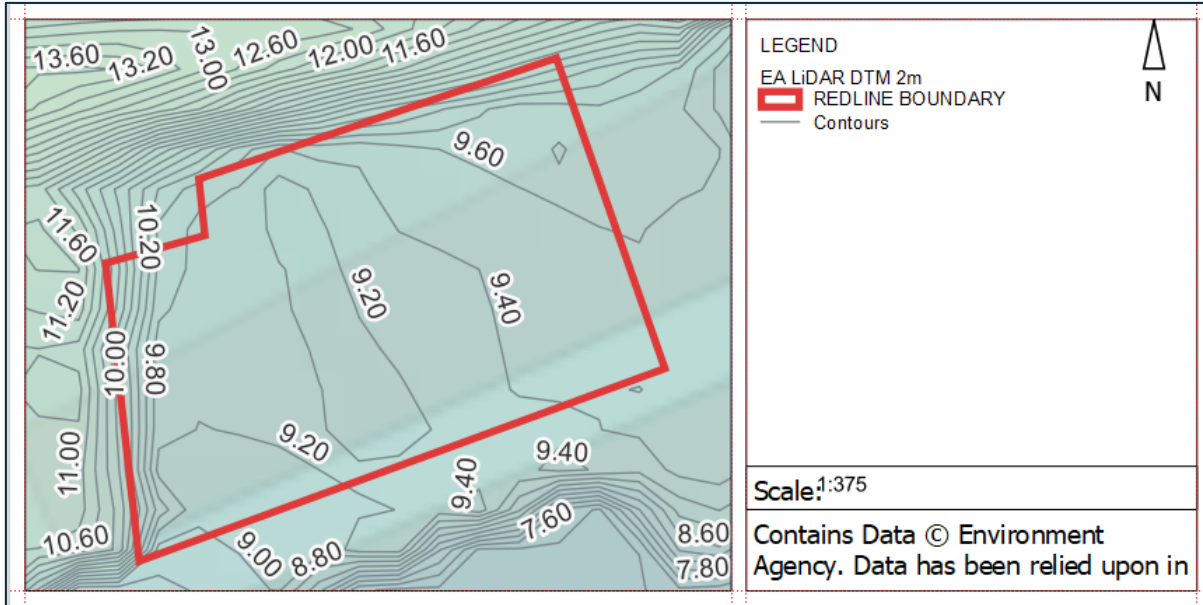


Figure 5: Site Topography

5.2 Main Rivers and Nearby Watercourses

The River Medway is located approximately 43m south of the Application Site (Figure 6).

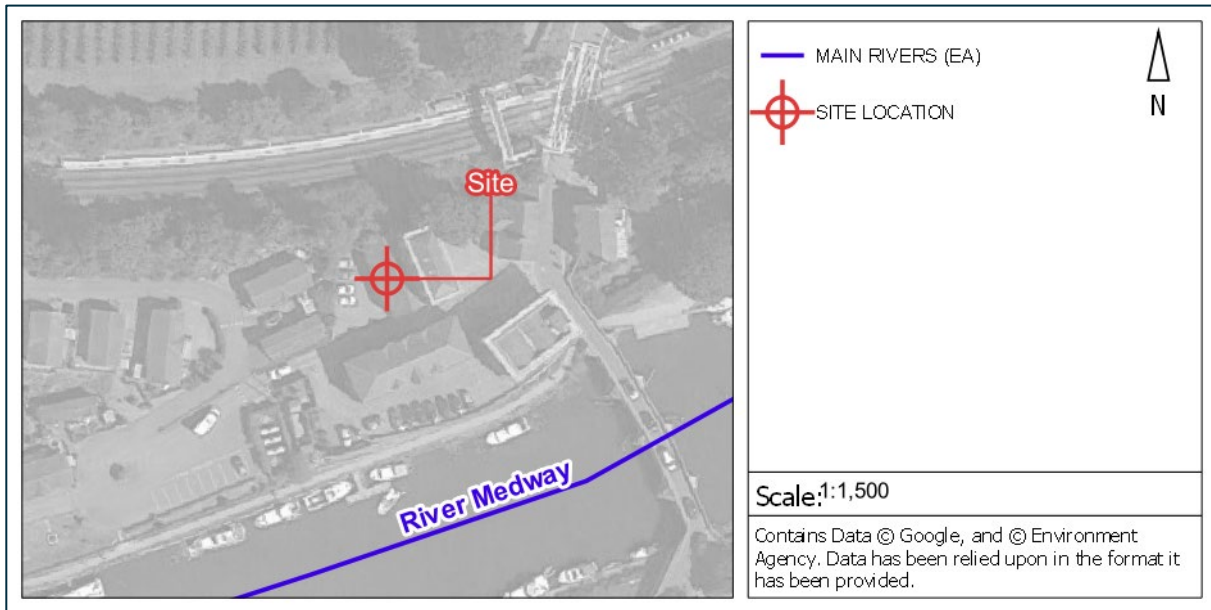


Figure 6: Statutory Main River Map

The Application Site is not considered to be in close proximity to any ordinary watercourses (Figure 7).

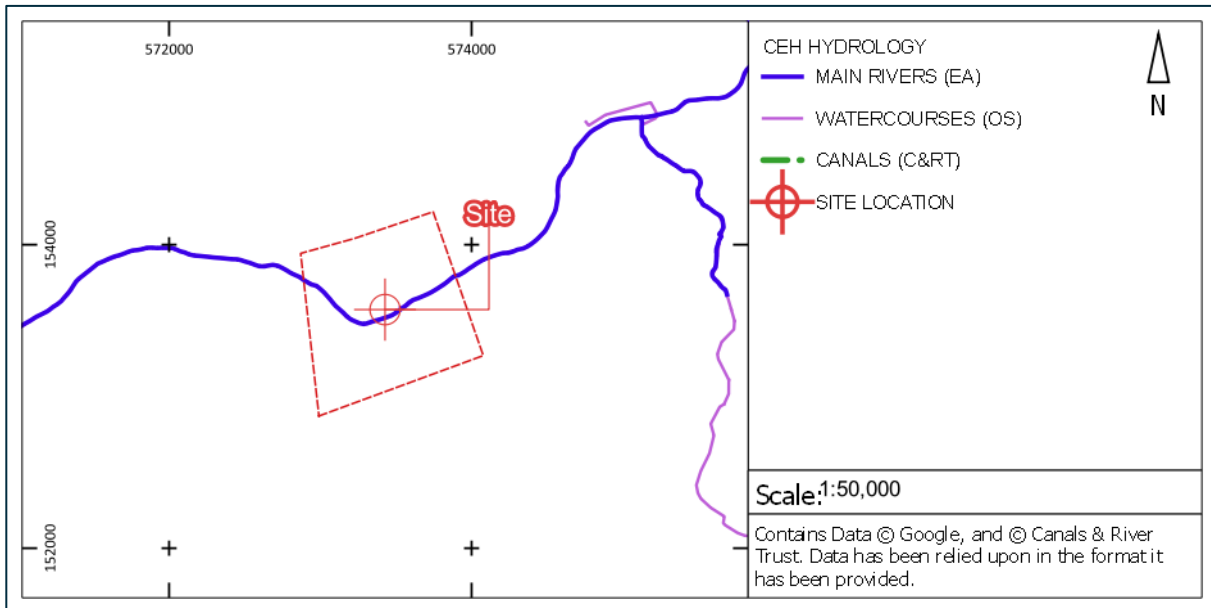


Figure 7: Ordinary Watercourses

6 Flood Risk: Historic Records

6.1 Environment Agency Recorded Flooding

The Environment Agency publishes records of historic flooding⁶ and this data has been reviewed. Historic Flooding has previously affected the Application Site (Figure 8). The Environment Agency recorded flood outlines identifies that the Application Site has been affected by flooding in:

- 1960 - Main River channel capacity exceeding main river.
- 2000 – Main River channel capacity exceeding main river.
- 2013 – Main River channel capacity exceeding main river.

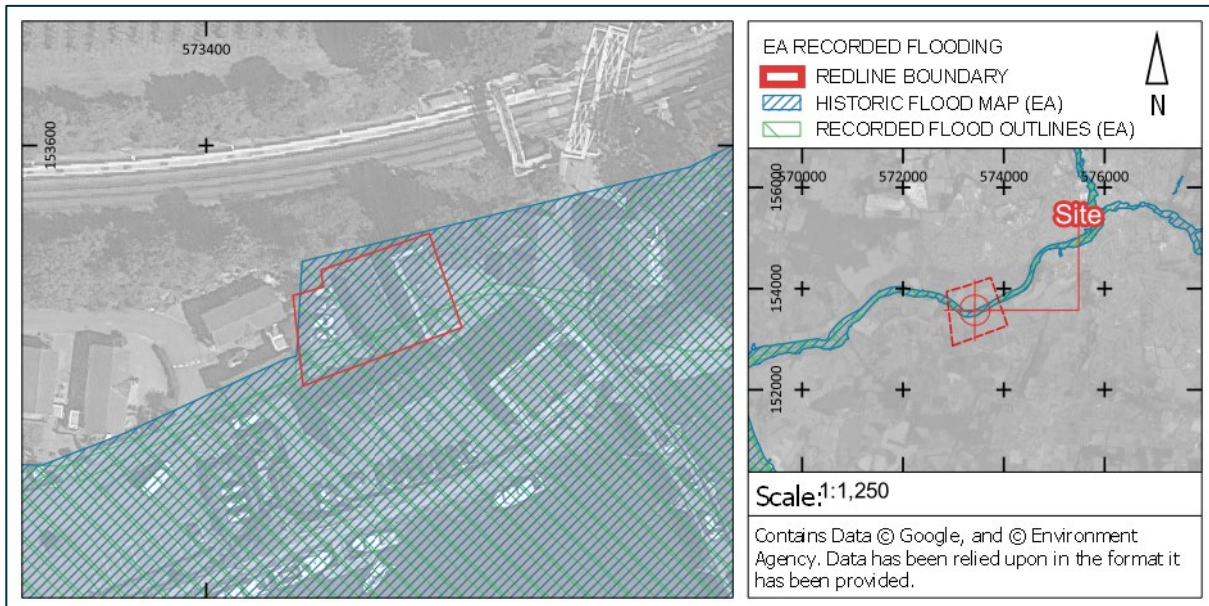


Figure 8: EA Historic and Recorded Flood Outlines

6.2 SFRA Recorded Flooding

The Maidstone Strategic Flood Risk Assessment has included records of historical flooding stating:

“Historical flood records provided by the Environment Agency, Maidstone Borough Council and Kent County Council identify fluvial flood events to have occurred between 1927 and 2014. The south -west area of the borough is identified to have experienced extensive flooding between 1927 and 2014 and the following locations are noted to have been affected by at least one historical event during the time period – East Farleigh has been identified as one of these locations.”

Furthermore, the SFRA states, “whilst an account of historic flooding throughout the Borough is presented within this section, it should be noted that the majority of flooding occurrences are not reported.’ It is very likely that other areas of the Borough are at risk of flooding and have experienced flooding previously, but this might not have been recorded. Therefore, areas identified in this section should not be taken as definitive but instead indicative of the distribution of flood risk within Maidstone.”

⁶ [Historic Flood Map - data.gov.uk](https://data.gov.uk)

6.3 Site Owner Recorded Flooding

The site owner has provided no details of flooding having affected the Application Site.

7 Flood Risk: Coastal Flooding

7.1 Assessment Methodology

The Application Site is situated inland and is located approximately 29km away from the nearest coastline. The dominant source of flooding is considered to be fluvial therefore the tidal flood risk is considered to be Very Low.

Considering the impacts of climate change and the Section 13 “Mitigation Measures”, the assessed tidal flood risk over the development lifespan is Very Low.

8 Flood Risk: River Flooding

8.1 Assessment Methodology

To determine the flood risk from fluvial sources, the EA Flood Map for Planning has been reviewed.

8.2 Fluvial Flood Risk Analysis

The Environment Agency's flood level information has been provided as part of the data request sent to the Agency.

The Environment Agency have provided undefended and defended modelled flood extents for the Application Site. Model 4 of the Medway Model 2015 has been used to determine the flood levels and flood depths at the Application Site.

- The Environment Agency data shows that the Application Site is not considered to be at risk from flooding in a 1 in 20 year undefended fluvial flood event; however flooding could occur along the road, Empress Riverside Park situated to the south of the property which could affect access and egress in the event of a flood.
- The Environment Agency data shows that the Application Site could experience flooding in a 1 in 100 year undefended fluvial event. The Application Site could experience a flood level of approximately 9.998 m AOD and a flood depth of approximately 0.93m.
- The Environment Agency data shows that the Application site is not considered to be at risk from flooding in a 1 in 20 year and 1 in 30 year defended fluvial flood event, however flooding could occur along the road, Empress Riverside Park situated to the south of the property which could affect access and egress in the event of a flood.
- Data provided by the Environment Agency demonstrates that the Application Site could experience flooding in a 1 in 100 year defended fluvial event. The Application Site could experience a flood level of approximately 9.706 m AOD and a flood depth of approximately 0.64 m.

Peak River Flow Climate Change Allowances are determined by the predicted increase in peak river flows. These are determined by regional variations, which are based on the management catchments.

The guidance also sets out which climate change allowance should be used for different development Vulnerability Classifications

The Application Site is located in the Medway management catchment. The 2080 Central Climate Change allowance for peak river flows is 27%, compared to the 1981 to 2000 baseline.

- The Environment Agency has provided modelled flood extents with the inclusion of climate change allowances.
- The Application Site could experience flooding in an undefended 1 in 100 + 35 CC fluvial event. The Application site could experience a flood level of approximately 11.06 m AOD and a depth of approximately 1.99 m.
- The Application Site could experience flooding in a defended 1 in 100 + 35 CC fluvial event. The Application Site could experience a flood level of approximately 10.64 m AOD and a flood depth of approximately 1.58 m.

It should be noted that the development proposal is for a vertical extension at roof level to provide additional business use, therefore the development proposals will be situated above the predicted flood depths and will not increase the existing impermeable footprint onsite. Therefore, the overall flood risk to the proposed development is considered to be Low.

Considering the impacts of climate change and the Section 13 “Mitigation Measures”, the assessed river flood risk over the development lifespan is Low.

9 Flood Risk: Surface Water Flooding

9.1 Assessment Methodology

To determine the flood risk from surface water, the EA Flood Risk from Surface Water Map has been reviewed. If the Application Site has been shown to be an area where no surface water flooding occurs for the Low Risk Scenario (1 in 1000 Year Event), the surface water flood risk is considered to be insignificant.

9.2 SFRA Surface Water Flood Risk

According to the SFRA the site is not identified as being within a Critical Drainage Area.

9.3 Surface Water Flood Risk Analysis

Comparison of the Environment Agency’s Risk of Flooding from Surface Water mapping with the Application Site boundary has been shown in Figure 9, Figure 10, and Figure 11 below.

After reviewing the Application Site and the Surface Water Flood Risk, the development proposal is not considered to be at risk from surface water flooding in a 1 in 30 year (High Risk), 1 in 100 year (Medium Risk) and 1 in 1000 year (Low Risk) event.

Therefore, the Application Site is at very low risk of surface water flooding.

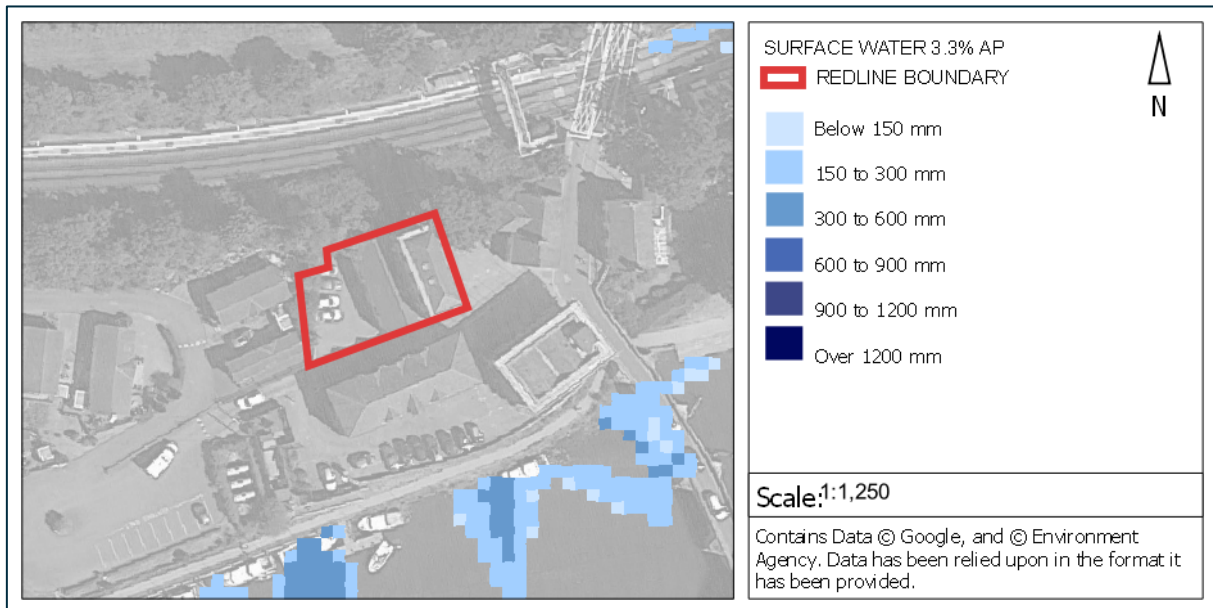


Figure 9: EA Risk of Flooding from Surface Water Map, 1 in 30 Year Event

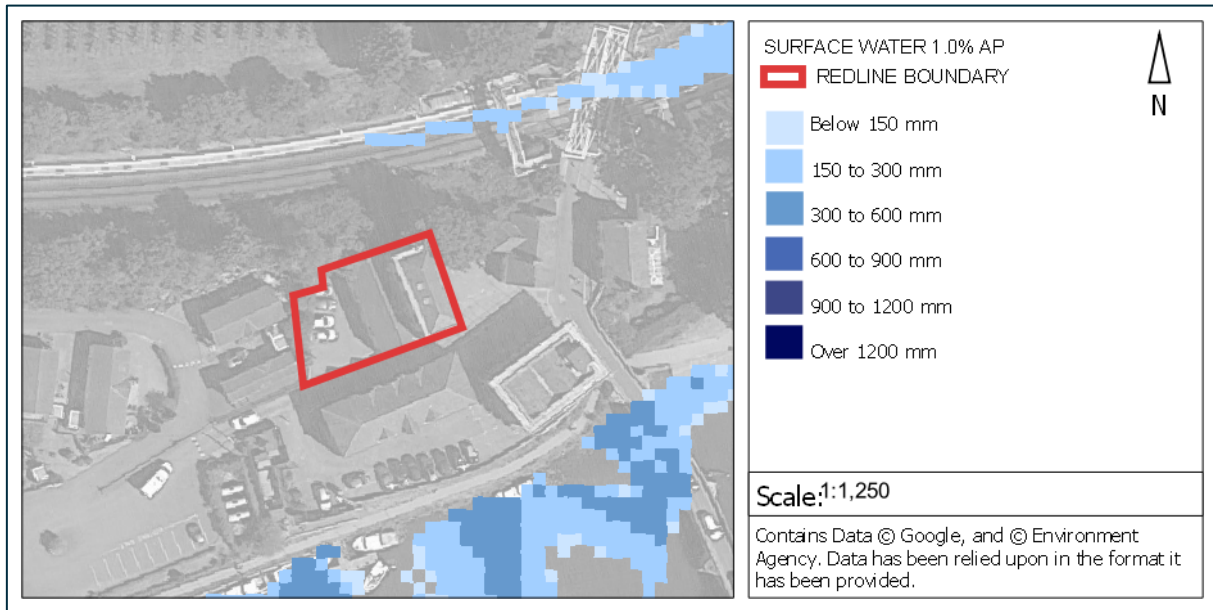


Figure 10: EA Risk of Flooding from Surface Water Map, 1 in 100 Year Event

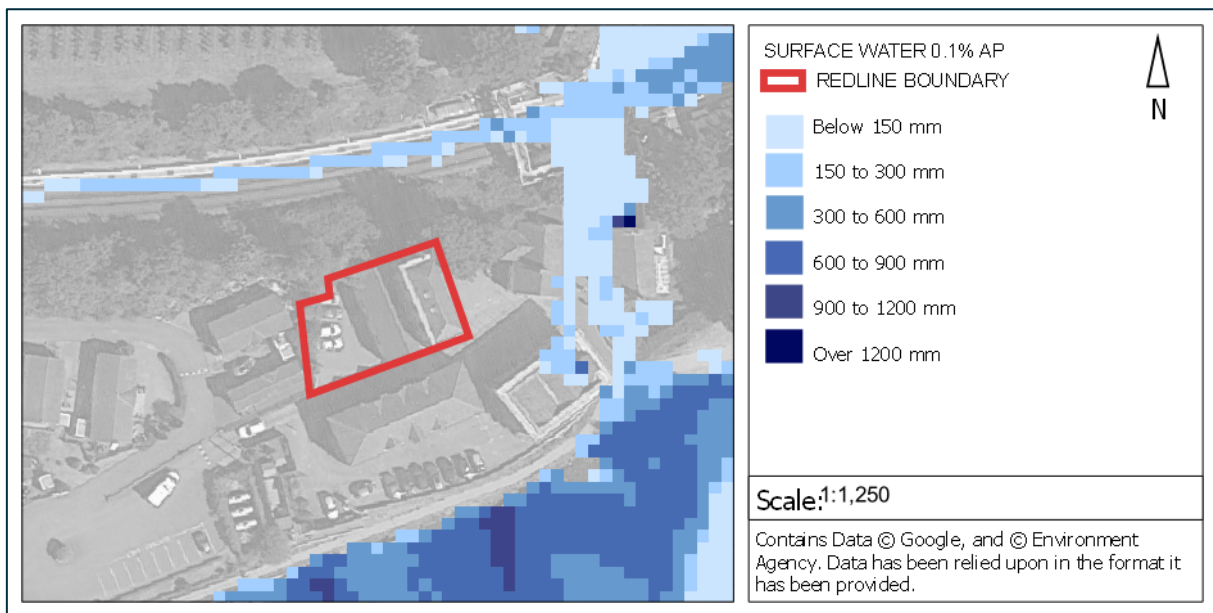


Figure 11: EA Risk of Flooding from Surface Water Map, 1 in 1000 Year Event

Surface Water Climate Change Allowances are determined by the predicted increase in peak rainfall intensity. These are determined by regional variations, which are based on the management catchments. Management catchments are sub-catchments of river basin districts.

The Application Site is located in the Medway management catchment. Climate change allowances are based on a 1981 to 2000 baseline. The 2070, 30 Year Central Climate Change allowance for peak rainfall intensity is 20%. The 2070, 100 Year Central Climate Change allowance for peak rainfall intensity is 20%.

The current Environment Agency surface water flood risk maps currently do not incorporate predicted climate change allowances. However, due to the predicted increases in peak rainfall intensity, it is likely that

surface water flood depths will increase over the lifetime of the development. Consequently, appropriate surface water mitigation measures are discussed in Section 13 of this report.

Considering the impacts of climate change and the Section 13 “Mitigation Measures”, the assessed surface water flood risk over the development lifespan is Very Low.

10 Flood Risk: Groundwater Flooding

10.1 Assessment Methodology

To determine the flood risk from groundwater sources, the British Geological Survey “Area’s Susceptible to Groundwater Flooding” (AStGW) dataset has been reviewed. If this dataset shows the Application Site to be located in an area which is “Not Affected”, the groundwater flood risk is considered to be insignificant.

10.2 Groundwater Flood Risk Analysis

By reviewing the British Geological Survey AStGW, the groundwater flood risk to the Development Proposals is classified as having limited potential for groundwater flooding to occur (Low Risk). Therefore, the risk of groundwater flooding is considered to be Low.

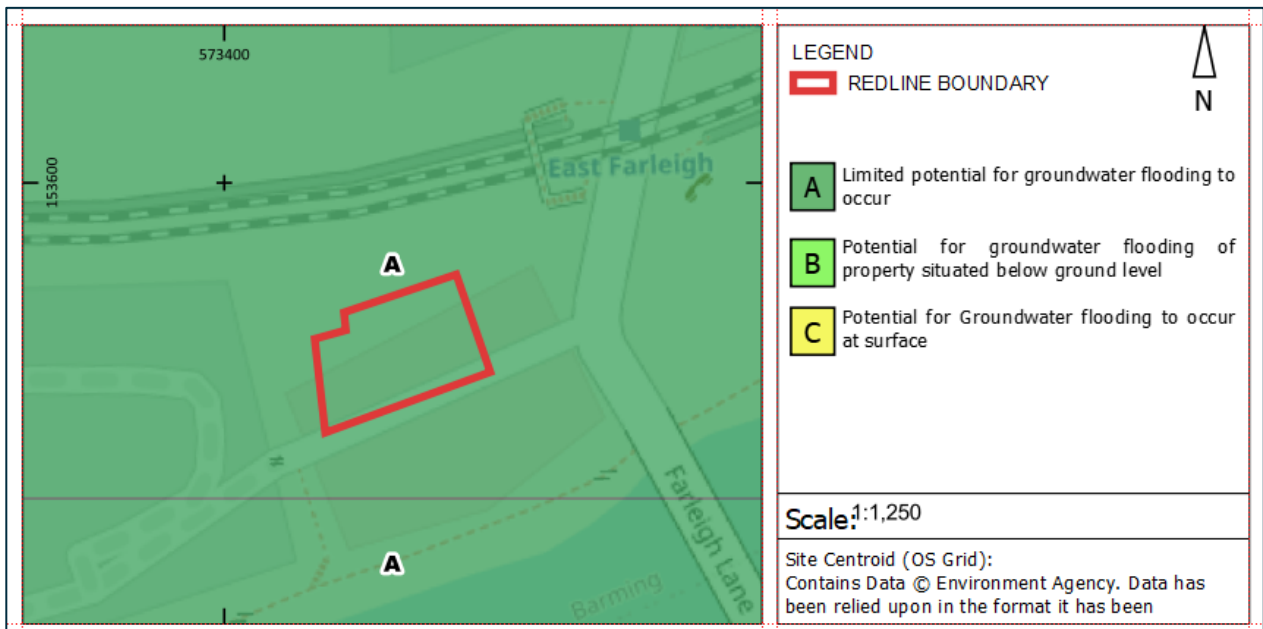


Figure 12: BGS AStGW Mapping

According to the UK Groundwater Forum⁷, the effects of the predicted impacts of climate change may include:

- a long term decline in groundwater storage;
- increased frequency and severity of groundwater droughts;
- increased frequency and severity of groundwater-related floods;
- mobilisation of pollutants due to seasonally high water tables;
- saline intrusion in coastal aquifers, due to sea level rise and resource reduction.

These impacts cannot be locally managed and would need a catchment wide resource management plan to mitigate the risks.

⁷ Groundwater Resources and Climate Change, http://www.groundwateruk.org/Groundwater_resources_climate_change.aspx#:~:text=The%20effects%20of%20climate%20change,the%20UK%20therefore%20may%20include%3A&text=increased%20frequency%20and%20severity%20of,to%20seasonally%20high%20water%20tables

Considering the impacts of climate change and the other factors discussed above, the assessed groundwater flood risk over the development lifespan is Very Low.

11 Residual Flood Risk

Residual risks are those remaining after applying the sequential approach to the location of development and taking mitigating actions.

11.1 Sewer Flooding

Consent from the public sewer authority will be required prior to occupation of the Development Proposals. This will require formal written consent and the public sewer authority would be required to undertake appropriate reinforcing work where necessary.

Current climate change predictions are for changes in rainfall profile and water availability, which are likely to alter the demands on the public sewer network. As far as practicable within the Development Proposals, opportunities for water reuse and to restrict surface water discharges have been considered.

The Maidstone Strategic Flood Risk Assessment (2016) states:

Sewer flooding occurs when intense rainfall overloads the sewer system capacity (surface water, foul or combined) and/or when sewers cannot discharge freely into watercourses due to high water levels. Sewer flooding can also be caused when problems such as blockages, collapses or equipment failure occur in the sewerage systems. Infiltration, entry of soil or groundwater into sewer systems via faults within the fabric of the sewer system, is another cause of sewer flooding.

The existing level 1 SFRA identifies that incidents of sewer flooding are more prominent in urban areas where there is a higher density of sewers and more water being discharged into the sewer system, although local incidents have been reported in more rural incidences across the borough. The majority of sewer flooding events are described to have occurred in the areas surrounding Maidstone, Staplehurst, Marden, Headcorn and Lenham.

Historical incidents of flooding are detailed by Southern Water in their DG5 register. This database records incidents of flooding relating to public foul, combined or surface water sewers and displays which properties experienced flooding. For confidentiality reasons, this data has been supplied on a postcode basis from the sewer incident report form (sirr) hydraulic overload database. Data covers all reported incidence as of its export of 28 April 2016.

According to the data provided in the Maidstone Strategic Flood Risk Assessment the postcode ME16 9 has experienced 2 sewer flooding incidents as of April 2016.

Considering the impacts of climate change and the other factors discussed above, the assessed sewer flood risk over the development lifespan is Very Low.

11.2 Flood Defence Breach Analysis

According to data provided by the Environment Agency, the Application Site does benefit from flood defences.

Therefore, the Application Site is at residual risk of a flood defence breach however as the development is for a vertical extension to the existing building to provide greater business use, the development proposal is considered to be at low risk from a flood defence breach.

11.3 Reservoir Failure

The Environment Agency risk of reservoir flooding indicates that the site is at risk as a result of a modelled reservoir failure (Figure 13). However, no specific mitigation measures are necessary for the residual risk of reservoir flooding.

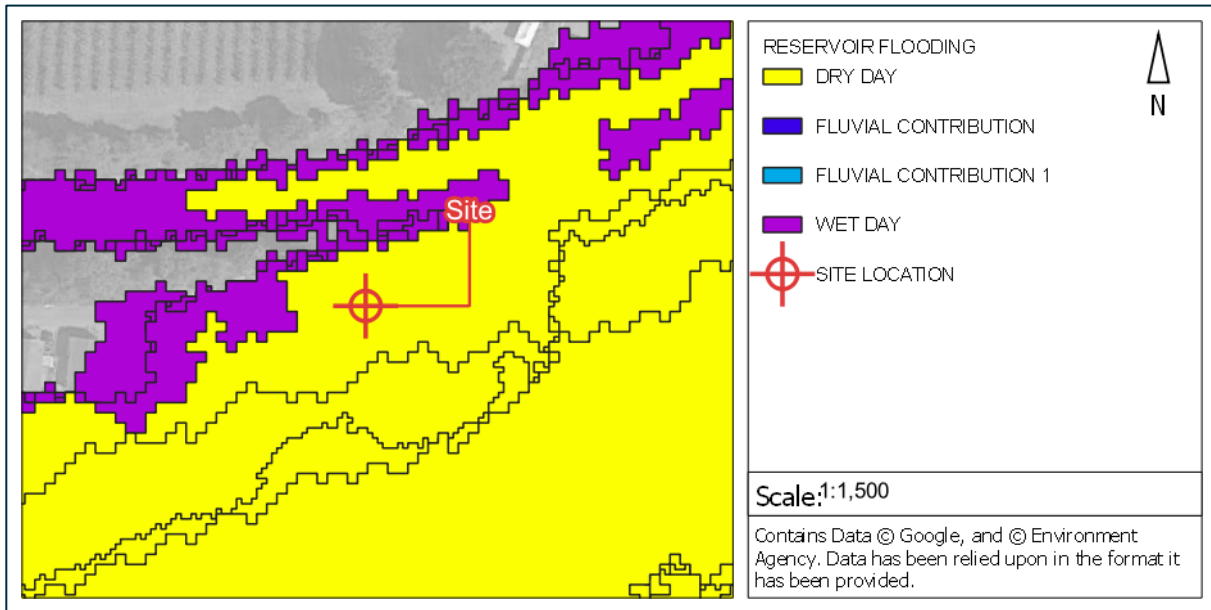


Figure 13: Environment Agency, Risk of Reservoir Flooding

11.4 Canal Failure

Canal Failure could result in flooding if a section of raised canal, either on an embankment or on a viaduct, was to fail.

As the Application Site is not within 1km of a raised canal, it is considered that the residual risk of canal flooding is low.

12 Surface Water Management

The purpose of a surface water management plan is to, wherever possible, limit the peak rate of surface water run-off generated by impervious areas of the site, to a rate similar to that of a greenfield.

As the development proposals are for the vertical extension of the existing use, the building footprint is not increasing, therefore it is proposed to re-use the existing surface water drainage discharge, and to retrofit in appropriate Sustainable Drainage Systems (SuDS).

From review of street level imagery from Google Maps, it appears that the building is equipped with external down-pipes. However, there would appear to be no beneficial use for rainwater harvested in a water butt. Therefore, consideration of the provision of a rain-planter to reduce the overall volume of surface water discharged from the Development Proposals.

13 Mitigation Measures

Based on the findings of this assessment no specific mitigation measures are considered necessary.

Following Planning Consent, several Post Planning Consents may be required, which are likely to be informed by the findings of this document.

13.1.1 Development within 3m of a Public Sewer

Based on the current information, the Development Proposals are not within 3m of a Public Sewer and therefore easements are unlikely to be required. This should be confirmed with the relevant water company.

13.1.2 Sewer Connection

Any new sewer connection to the public sewer should be agreed with the relevant water company, prior to starting work on site.

14 Flood Warning & Emergency Plan

The below process outlines the key steps to take in response to a relevant flood alert or flood warning being issued by the Environment Agency or on receipt of Met Office Rain Warnings.

It is also necessary to identify a flood evacuation route from the Application Site. It is recommended that evacuation is inland, away from the watercourse, canal or coastal frontage and towards designated evacuation points located in Flood Zone 1.

Evacuation points should be publicly accessible and should have shower provisions, and the ability to make hot food. Therefore, the following buildings make useful refuge centres:

- Primary and secondary schools, with sports halls.
- Public leisure centres.
- Community hubs (with sports facilities)

Emergency refuges should not be setup at:

- Hospitals
- First responder bases (fire, ambulance, police)
- Mass transit hubs (airports, train stations)
- Areas within Flood Zone 2 or 3
- Basement areas

This FWEPP has identified a potential refuge area at Bower Grove School, ME16 8NL. The site is situated in Flood Zone 1. However, people should confirm if their usual residence is located outside of Flood Zone 3, and if so should proceed to their normal residence.

It is important to leave the site upon receipt of a severe flood warning. This is to ensure that additional strain is not put on the emergency services.

If site users are unable to leave the building in the event of a flood, it is recommended that safety is sought on the upper floors of the building.

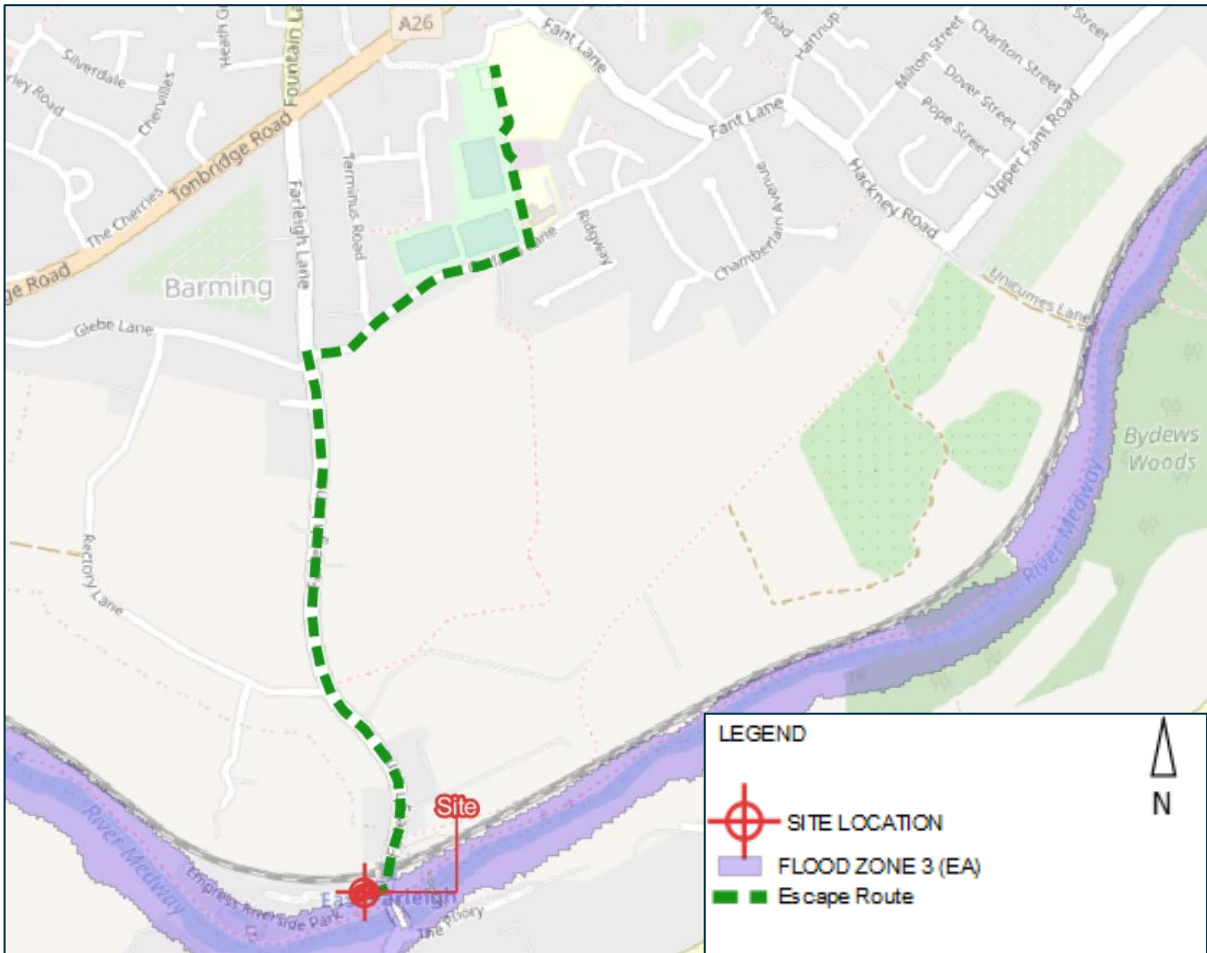


Figure 14: Proposed Evacuation Route

Preparation



PRACTICE FWEP

Check the National Flood Forum or speak to a Floodline adviser to find out how to stay safe during a flood. Telephone: 0345 988 1188.

Prepare a personal flood plan, community or group flood plan, or business flood plan.

If you own property next to a watercourse, for example a river, culvert, brook or mill stream, you must:

- maintain river beds and banks (for advice speak to the Environment Agency or Lead Local Flood Authority for guidance)
- not obstruct the water flow

Environment Agency Flood Alert or Met Office Yellow Rain Warning



PREPARE FOR POSSIBLE FLOODING

Check your flood risk - <https://flood-warning-information.service.gov.uk/long-term-flood-risk>

Sign up for flood warnings - <https://www.gov.uk/sign-up-for-flood-warnings>

Keep up to date with the latest situation - call Floodline on 0345 988 1188 or follow @EnvAgency and #floodaware on Twitter for the latest flood updates

Have a bag ready with vital items like insurance documents and medications in case you need to leave your home

Check you know how to turn off your gas, electricity and water mains supplies plan how you'll move family and pets to safety

Empty water butts to provide surface water attenuation

Environment Agency Flood Warning or Met Office Amber Rain Warning



IMMEDIATE ACTION REQUIRED

Move vehicles to higher ground

Move family and pets to safety

Move important items upstairs or to a safe place in your property, starting with cherished items and valuables, then furniture and furnishings

Turn off gas, electricity and water supplies if it's safe to do so; never touch an electrical switch if you're standing in water

If you have property protection products such as flood barriers, or air brick covers, use them now keep track of the latest situation - <https://flood-warning-information.service.gov.uk/warnings>

Environment Agency Severe Flood Warning or Met Office Red Rain Warning

DANGER TO LIFE, ACT NOW.

Call 999 if you're in immediate danger

Follow advice from the emergency services and evacuate

Make sure you have an emergency kit including a torch, spare batteries, mobile phone and charger, warm clothes, important numbers like your home insurance, water, food, first aid kit and any medicines and baby care items you may need

Alert neighbours and offer help if it's safe to do so

Avoid driving or walking through flood water: just 30cm (1 foot) of fast flowing water could move your car and even shallow moving water can knock you off your feet

Keep your family and pets away from floodwater – it may contain heavy debris, sharp objects, open manhole covers, sewage and chemicals

Wash your hands if you've been in contact with flood water which may contain toxic substances



14.1 Environment Agency Flood Warning and Alert Service

The Environment Agency provides a flood warning service and operates a flood forecasting and warning service for areas at risk of flooding from rivers or the sea. This is a free 24-hour service operating 365 days of the year and relies on direct or live observation of rainfall, river levels, tide levels, bespoke in-house predictive models, rainfall radar data and information from the UK Met Office.

The Environment Agency operate a Flood Information service which identifies whether any flood warnings or alerts have been issued for a specific postcode or place in England or Wales: <https://flood-warning-information.service.gov.uk/>.

The Environment Agency also operate a 5 day county-wide forecast in relation to flood risk. It is recommended that this service is regularly checked to ensure occupants / residents are aware of any possible risks: <https://flood-warning-information.service.gov.uk/5-day-flood-risk>.

The Application Site is located within the Environment Agency's Flood Warning Area / Flood Alert Area for River Medway between Yalding and Maidstone. As a minimum, it is recommended that this warning system / these alerts are subscribed to and acted upon, as appropriate: <https://www.gov.uk/sign-up-for-flood-warnings>.

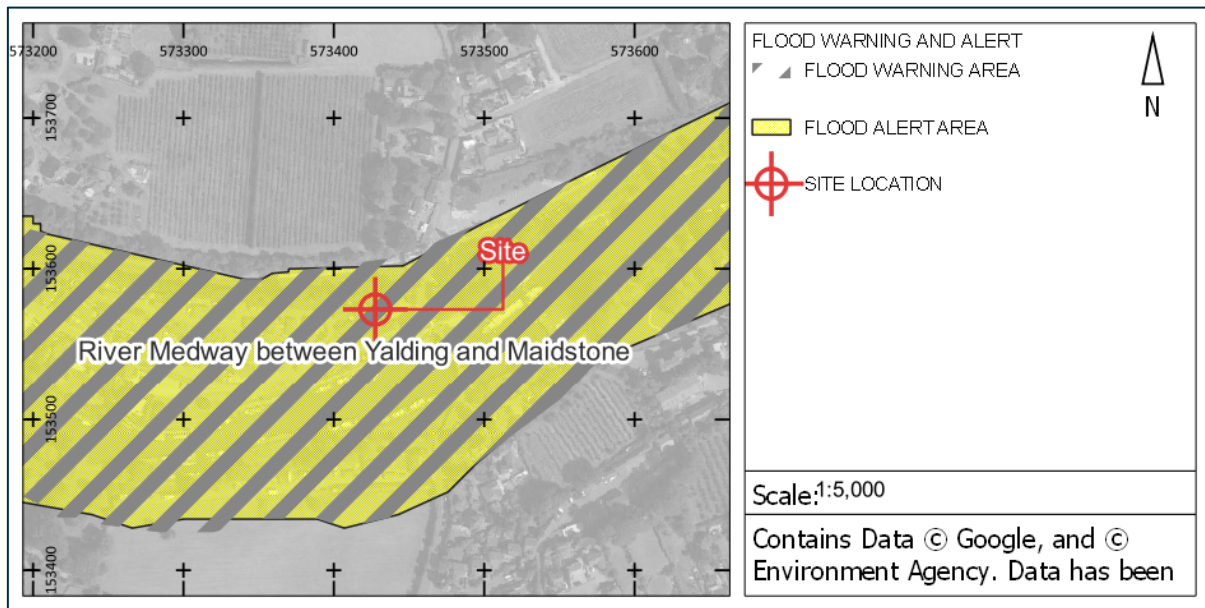


Figure 15: EA Flood Warning / Alert Areas

14.2 Site Specific Flood Evacuation Advice

In the event of receiving a flood alert and in preparation of flooding, site users should:

- Check your flood risk - <https://flood-warning-information.service.gov.uk/long-term-flood-risk>
- Keep up to date with the latest situation - call Floodline on 0345 988 1188
- Follow @EnvAgency and #floodaware on Twitter for the latest flood updates
- Have a bag ready with vital items like insurance documents and medications in case you need to leave the property. The National Flood Forum provides guidance on what should be included in a flood bag⁸

⁸ <https://nationalfloodforum.org.uk/about-flooding/preparing/emergency-flood-kit/>

- Check you know how to turn off your gas, electricity and water mains supplies plan how you'll move family and pets to safety
- Empty water butts to provide surface water attenuation
- Prepare to seek refuge on the upper floors of the dwelling, if necessary.

Walking and driving in the local area is likely to be impeded in the design flood event.

DEFRA guidance 'Flood Risk to People' FD2321/TR1 states that there are, essentially, three reasons why vehicles cannot be used in floodwaters:

- *The presence of water stops the engine functioning;*
- *The vehicle floats; and,*
- *The vehicle becomes difficult to control.*

Cars will stop and/or float in relatively shallow water (as low as 0.5m in depth) while emergency vehicles may survive in slightly deeper waters (up to 1m in depth). However, with suitable modifications (high level air intakes/exhausts), a fire engine remains controllable in depths of 0.5m at up to 5 m/sec water flows.

Based on the above, it is not recommended to evacuate during a flood event by vehicle. If flooding has occurred around the Application Site, the safest course of action is likely to be to stay within a building within the upper floors. Flood waters of 0.25m and greater depth can pose a serious risk of harm to pedestrians.

The design of the proposed residential extension should include continued safe access from the existing ground floor areas to internal stairways, for safe emergency refuge within the building. In the event of flooding, the safest course of action is to remain on site (on the upper floor) and await the co-ordinated blue light response.

The Environment Agency Flood Hazard Ratings (guidance set out in FD2320/TR2 and FD2321/TR1) as well as the HR Wallingford and Environment Agency (May 2008) 'supplementary note on flood hazard ratings and thresholds for development planning and control purpose' outline the requirements for safe access and egress.

The Environment Agency Flood Hazard Rating is categorised as follows:

- Very low hazard: use caution
- Danger for some: includes children, the elderly and the infirm
- Danger for most: includes the general public
- Danger for all: includes emergency services

Accordingly, when assessing safe access and egress routes from the Application Site, it is necessary to review the Environment Agency Flood Hazard Ratings along the proposed route.

14.3 Met Office Weather Warnings

The Met Office issues weather warnings up to 5 days in advance, through the National Severe Weather Warning Service.

During periods of bad weather, site users should monitor local weather reports and sign up for the Met Office UK weather warnings. Warnings can be monitored through an Apple/Android app, Twitter or directly via emails. Further information can be found at <https://www.metoffice.gov.uk/>.

15 Conclusions

Ambiental Environmental Assessment (AEA), a Company of Royal HaskoningDHV has been appointed by Chord Electronics LTD. to undertake a National Planning Policy Framework (NPPF) [1] compliant Flood Risk Assessment (FRA) for the Development Proposals located at Pump House, Farleigh Lane, East Farleigh, Maidstone, Kent, ME16 9NB.

The development proposal is for a vertical extension at roof level to provide additional business use.

According to the Flood Risk and Coastal Change Planning Policy Guidance, the Development Proposal would be classified as a Minor Extension (Standing Advice).

On the basis that the development proposals are for a minor extension in Flood Zone 2 or 3, the Environment Agency's Standing Advice will apply [2].

According to Annex 3 of the NPPF, the Development Proposal's Vulnerability Classification is "Less Vulnerable", which consists of the following uses:

*"Police, ambulance and fire stations which are not required to be operational during flooding. **Buildings used for shops; financial, professional and other services; restaurants, cafes and hot food takeaways; offices; general industry, storage and distribution; non-residential institutions not included in the 'more vulnerable' class; and assembly and leisure. Land and buildings used for agriculture and forestry. Waste treatment (except landfill* and hazardous waste facilities). Minerals working and processing (except for sand and gravel working). Water treatment works which do not need to remain operational during times of flood. Sewage treatment works, if adequate measures to control pollution and manage sewage during flooding events are in place. Car parks.**"*

The key findings of the Flood Risk Assessment are as follows:

- The Application Site is not considered to be at risk from flooding in a 1 in 20 year undefended and defended fluvial flood event.
- The Environment Agency data shows that the Application Site could experience flooding in a 1 in 100 year undefended fluvial event. The Application Site could experience a flood level of approximately 9.998 m AOD with a flood depth of approximately 0.93m.
- Data provided by the Environment Agency demonstrates that the Application Site could experience flooding in a 1 in 100 year defended fluvial event. The Application Site could experience a flood level of approximately 9.706 m AOD with a flood depth of approximately 0.64 m. As the development proposal is for the vertical extension at roof level to provide greater business use space, it is therefore considered to be at **low risk** from fluvial flooding.
- The Application Site is at **low risk** from Surface Water, Groundwater and Sewer flooding.

A summary of the flood risk for the Application Site for each source requiring consideration under the NPPF is presented as Table 1.

The Flood Risk Assessment has been undertaken in accordance with the requirements of the NPPF and it can be demonstrated that the Development Proposals are compatible with the predicted flood risk profile, including climate change allowance over the development lifetime.

It should be noted that the Development Proposals are not predicted to increase the risk of flooding to others over the development lifetime. Consequently, it is concluded that, with regards to the Flood Risk requirements of the NPPF, the Development Proposals are acceptable.

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Appendix

A. Development Proposals

Felix Lewis Architects

348 - Chord: The Pump House

Pre-Application Report



November 2022

Rev - 00

Contents

| | |
|--|------------------------------|
| 1. Design Statement & Rationale | Design Statement & Rationale |
| | Site Context |
| | Site Photos |
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| 2. Outline Proposal | Perspective View 1 |
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1. Design Statement & Rationale

The brief is to look at how to extend the Pump House building with an upwards extension to provide additional work space for the further expansion of Chord Electronics. Our proposals look to build upon themes and ideas that were successfully explored in our work for the Works Building also for Chord Electronics - i.e. To work with the existing structure and fabric of the historic building and to reinterpret the design in a 21st century way.

The Works building is a neo-Egyptian building and the design builds upon the idea of an Egyptian pylon. This is referenced in a contemporary tapered form with central opening using light weight construction and contemporary materials. We would look to utilise the same design approach for the Pump House building, to work with the historic themes of the original building.

The Pump House was built in a neo-Romanesque style which was popular in the 19th Century. Perhaps the most famous example of this revivalist style is the Natural History Museum in South Kensington conceived by Richard Owen as a 'cathedral to nature' and designed by the great Victorian architect Alfred Waterhouse.

In keeping with the grand ambitions of the Victorians, Waterhouse re-imagined the heavy masonry architecture of the 11th & 12th century using cast terracotta and cast iron. We would look to re-imagine the Romanesque (or Norman in an English context) in a 21st century way to create a 'cathedral to technology'.

The Pump House is a tall yellow brick structure with red brick buttressed corners with single arched windows at ground floor and pairs of smaller arched windows at first floor. The design is unusual in that it has a single storey range to the west which was likely to have been the old boiler house. It is relatively unadorned for a revivalist building, though this is in keeping with the simplicity of Romanesque architecture.

In its current configuration, the building appears truncated. The massive masonry walls simply finish with a small corbelled cornice with lead flashings. 12th century Romanesque buildings would have had a pitched roof structure, so this is one of the reasons why the building looks incomplete.

Historic photographs show that the building was originally a full storey taller with a pitched roof with central rose window in the

southern gable end. The roof and approximately 3 meters of brickwork to the eaves (5.5 meters to the top of the gable end) was removed.

Our proposal looks to reinstate the roof volume back to its original height and volume with a new storey constructed in a contemporary design. The proposal looks to work with the symmetrical arrangement of the existing facades with corner columns and central pilaster. In line with Romanesque architecture, the structure gets lighter as it gets taller.

The campanile at Trani cathedral illustrates this perfectly, the heavy stone base gets lighter with more openings as the tower gets taller. Our proposal seeks to do the same thing, culminating in a light weight lantern at the top of the existing structure; building on the rhythm and geometry of the Romanesque style creating a contemporary arcade at top floor level. The design is simple and functional, the structure expresses the manor in which it is constructed. The roof pitch will take advantage of the south west orientation and will integrate photo voltaic panels that will generate sustainable electricity to power both the pump house and the works buildings.

Both buildings were built as industrial structures yet they both have a stylistic ambition that raises them above the functional into the realms of architecture.

The concept and design rationale is the same for the recently consented Works building as it is at this Pump House building. As at the Works building, this proposal is also a 21st century addition referencing the 19th original use, which in turn references an earlier historic style - in this case ecclesiastical architecture from early in the second millennium, in the case of the Works building from temple architecture over 3,000 years ago.

It is our ambition to create a contemporary architecture that Chord Electronics will be use to design, engineer and manufacture an industry for our time - 21st century digital Hi-Fi technology.

Site Context

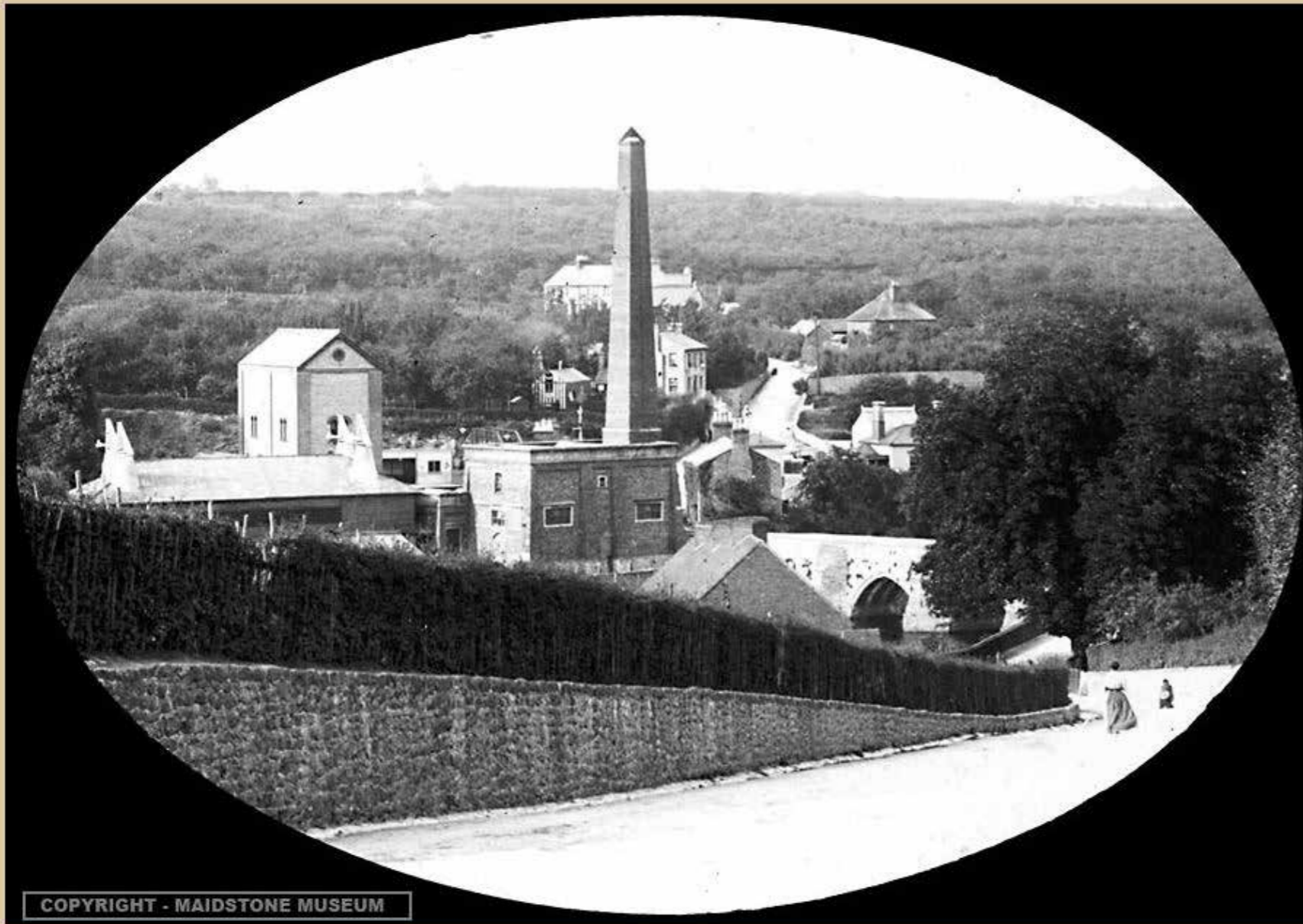
- East Farleigh Train Station
- Site Boundary
- The Pump House Building
- The Works Building
- East Farleigh Bridge



Site Photos



Historic Site Photos



COPYRIGHT - MAIDSTONE MUSEUM

Ref. No: MMPC-Z2-0065

OS Ref: TQ734535

Location: STATION HILL EAST FARLEIGH KENT

Archive date: Unknown *Archive Author:* Unknown *New date:* August 2009 *New Author:* Roy Moore



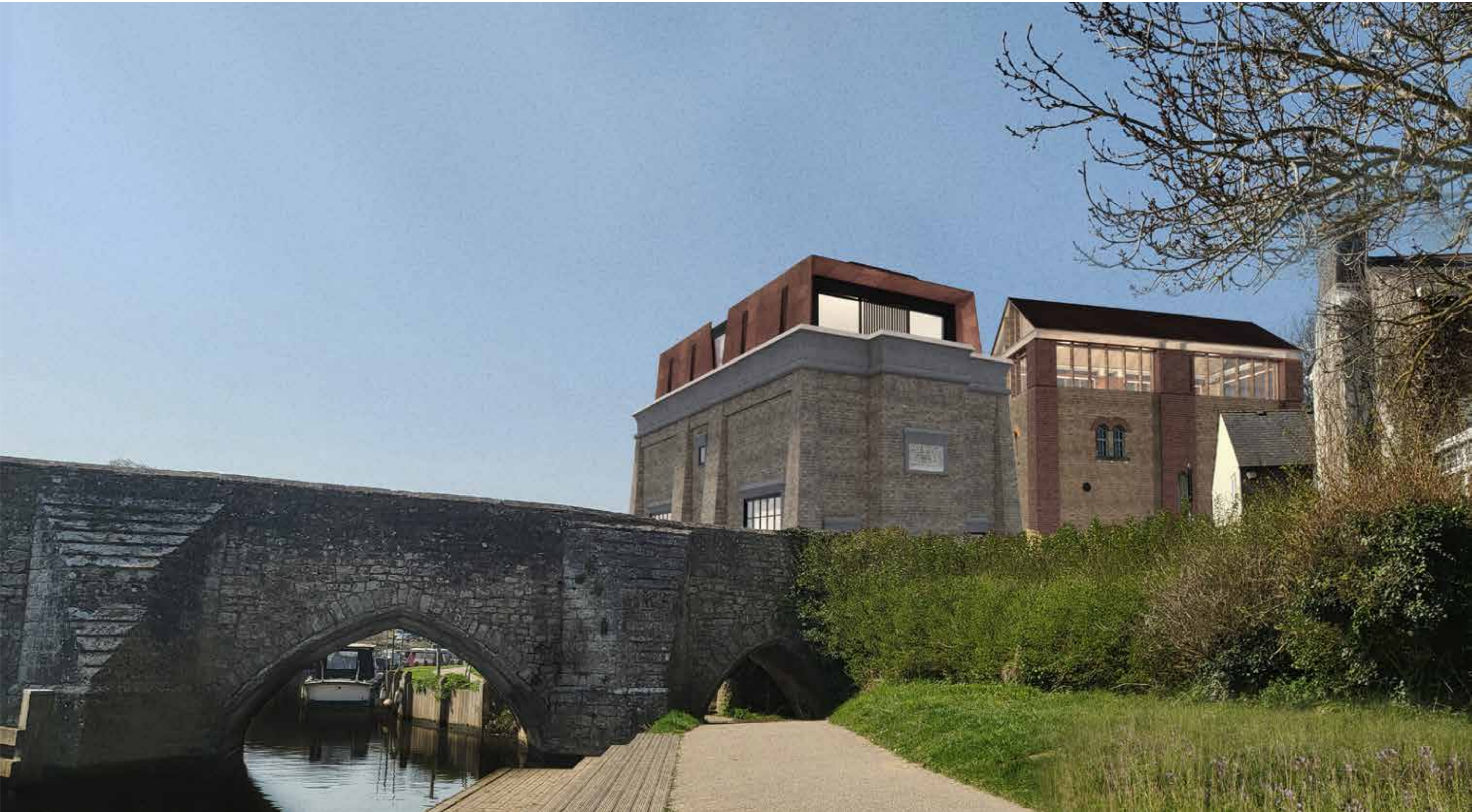
Concept Diagram



2. Outline Proposals
Perspective View 1



2. Outline Proposals
Perspective View 2



2. Outline Proposals
Internal Perspective View



3. Precedent Images



Romanesque campanile



Referencing Romanesque architecture



Contemporary classicism



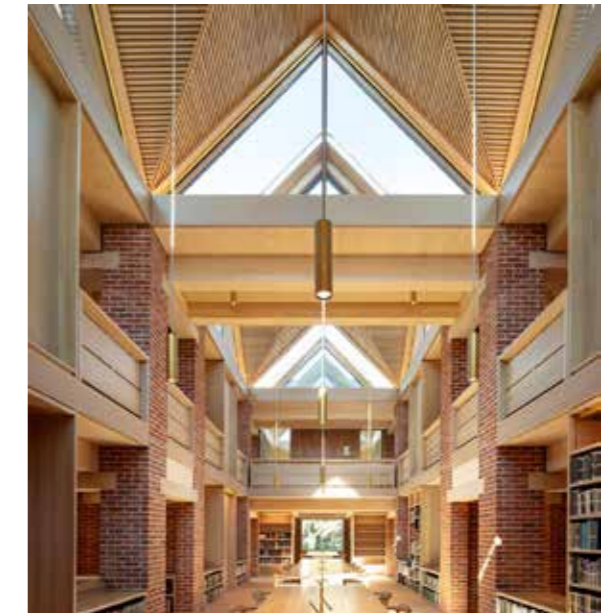
Contemporary extension



Tall building clusters

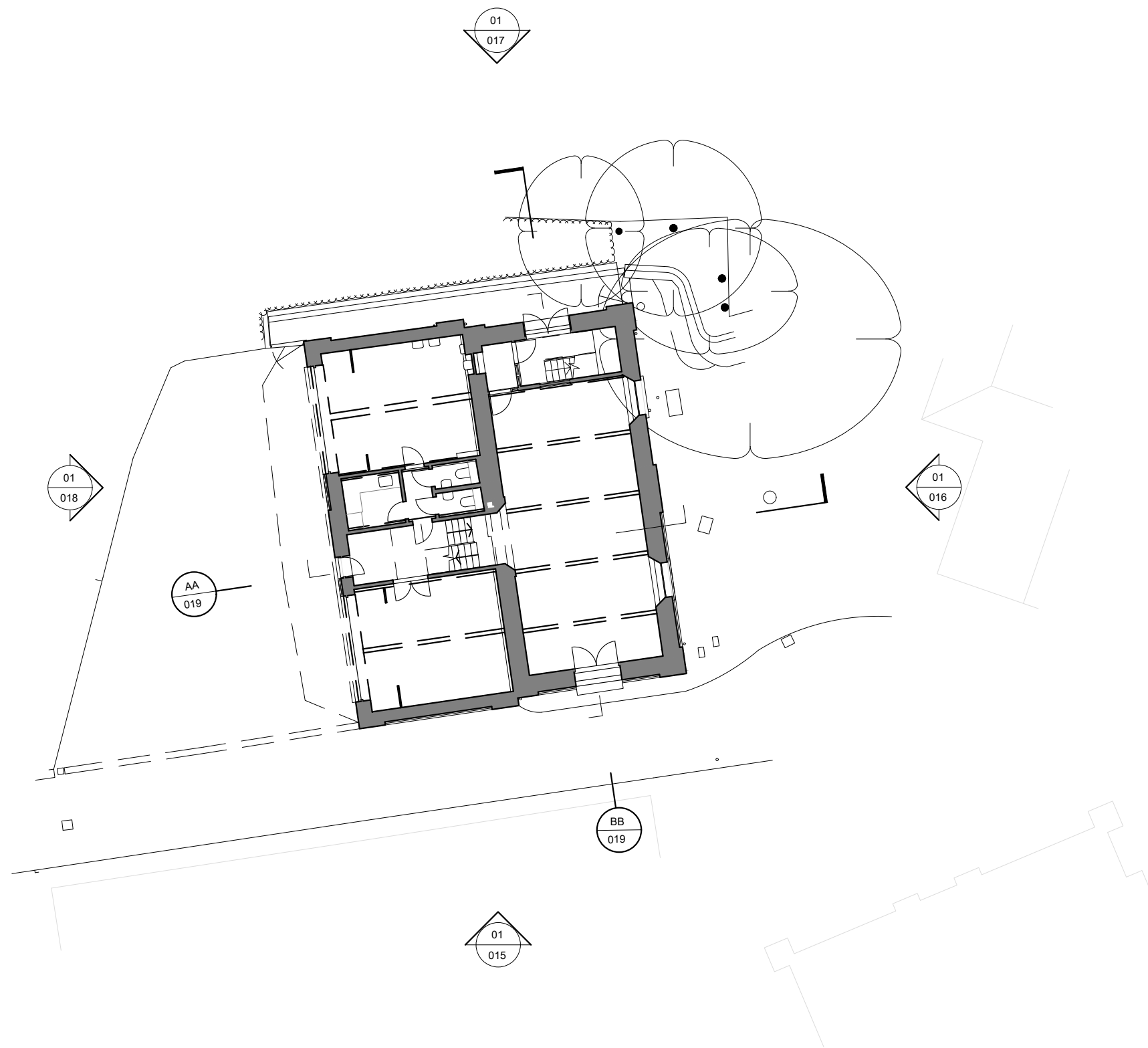


Arcades

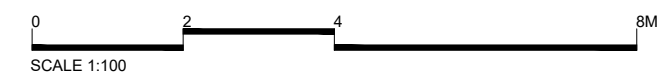


Ecclesiastical' vaulted interior

4. Design Drawings



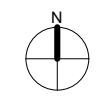
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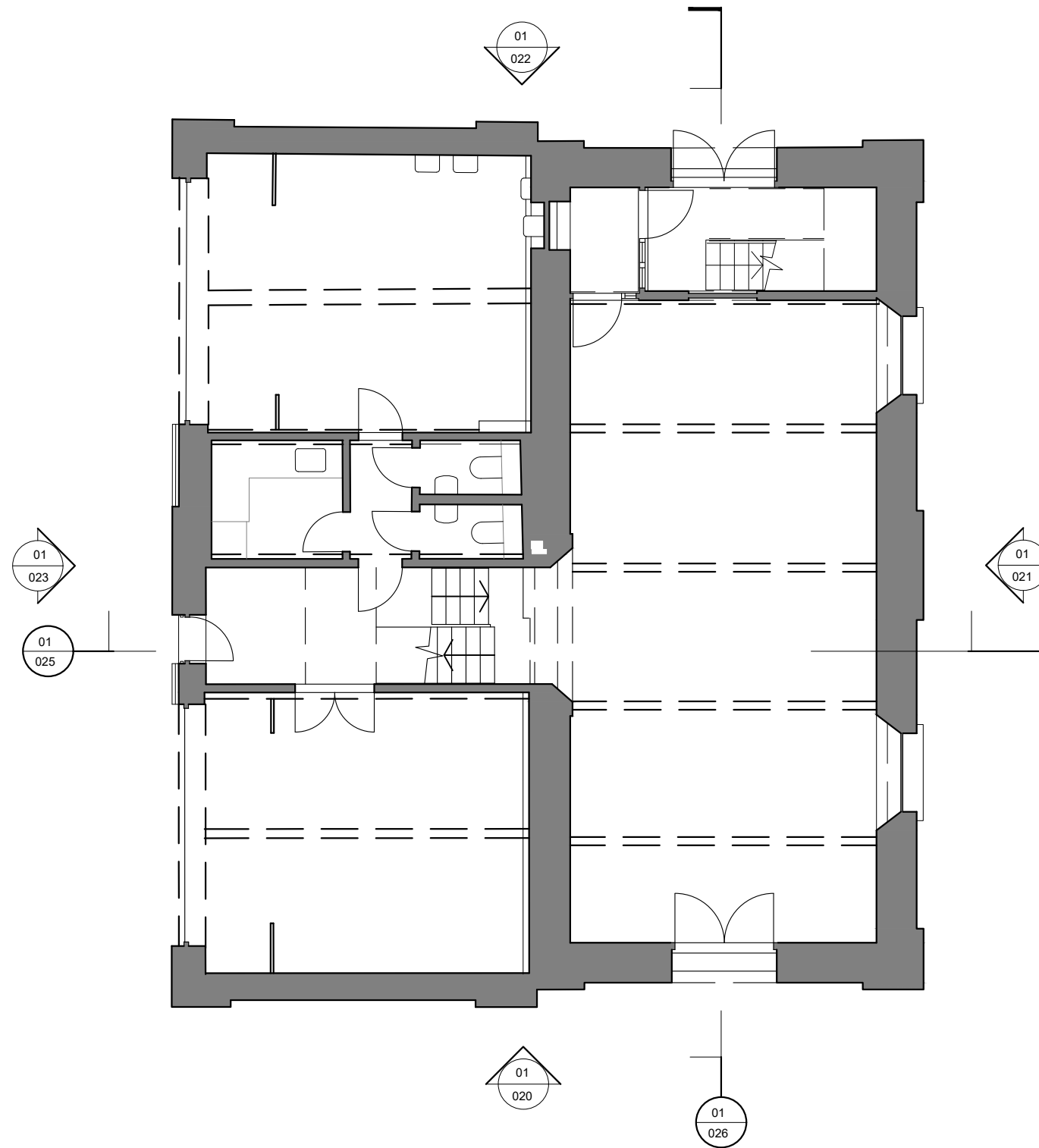
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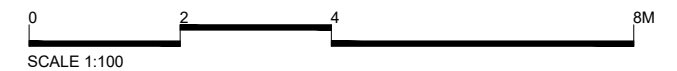
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| Project: | THE PUMP HOUSE |
| Title: | EXISTING SITE PLAN |
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01 EXISTING GROUND FLOOR PLAN
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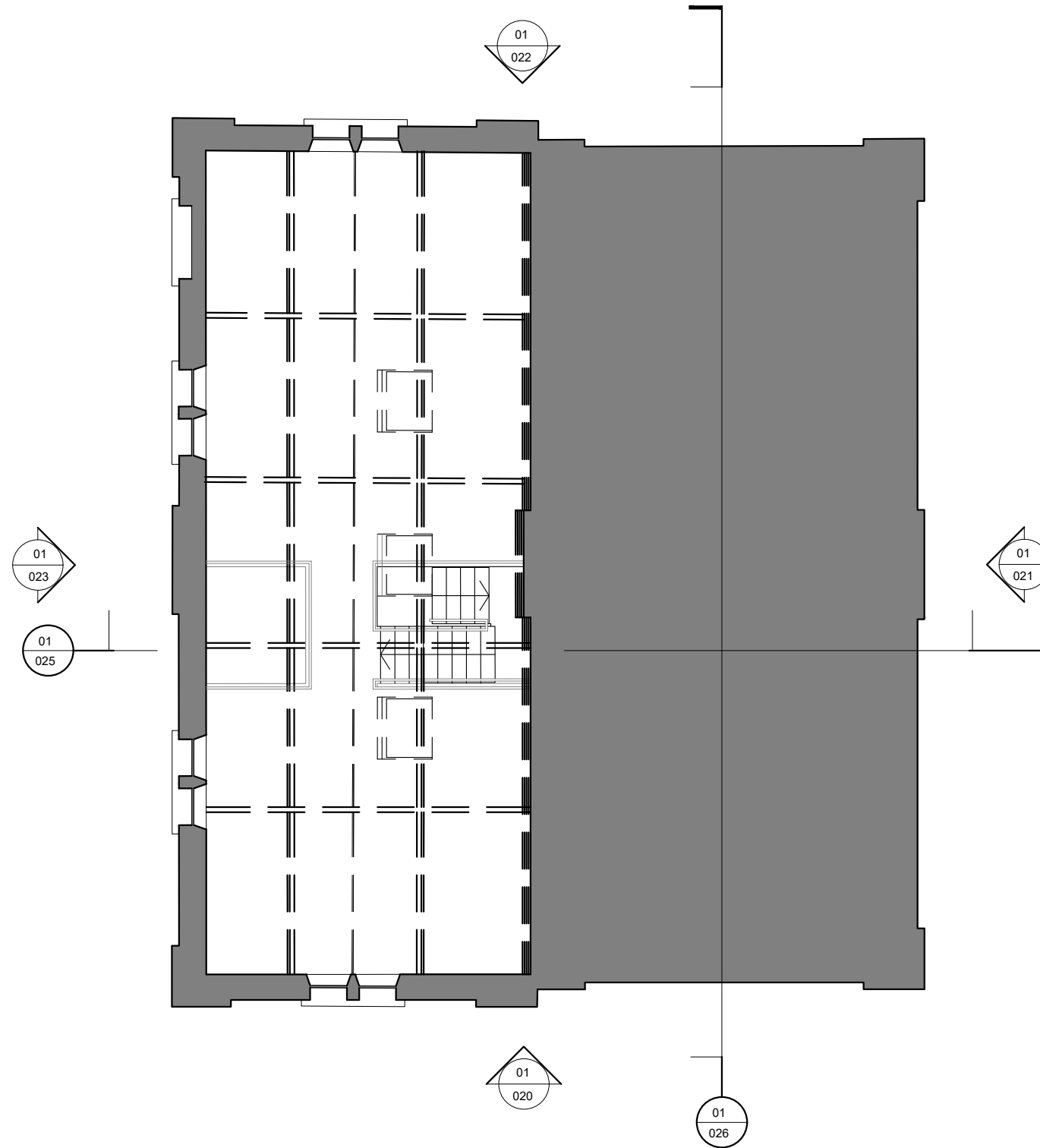


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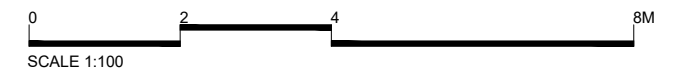
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Project: THE PUMP HOUSE
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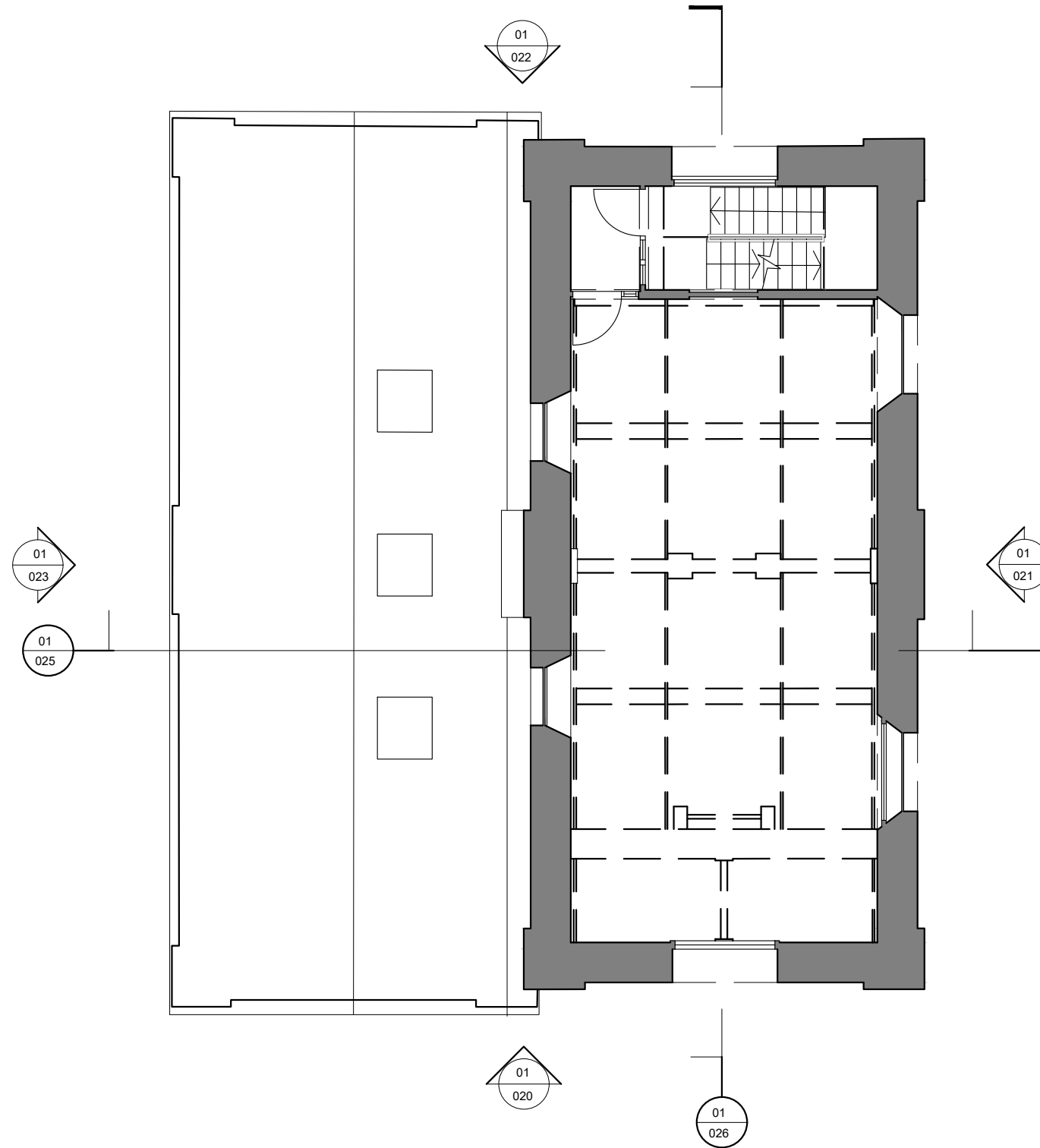
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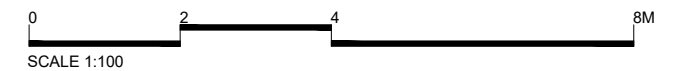
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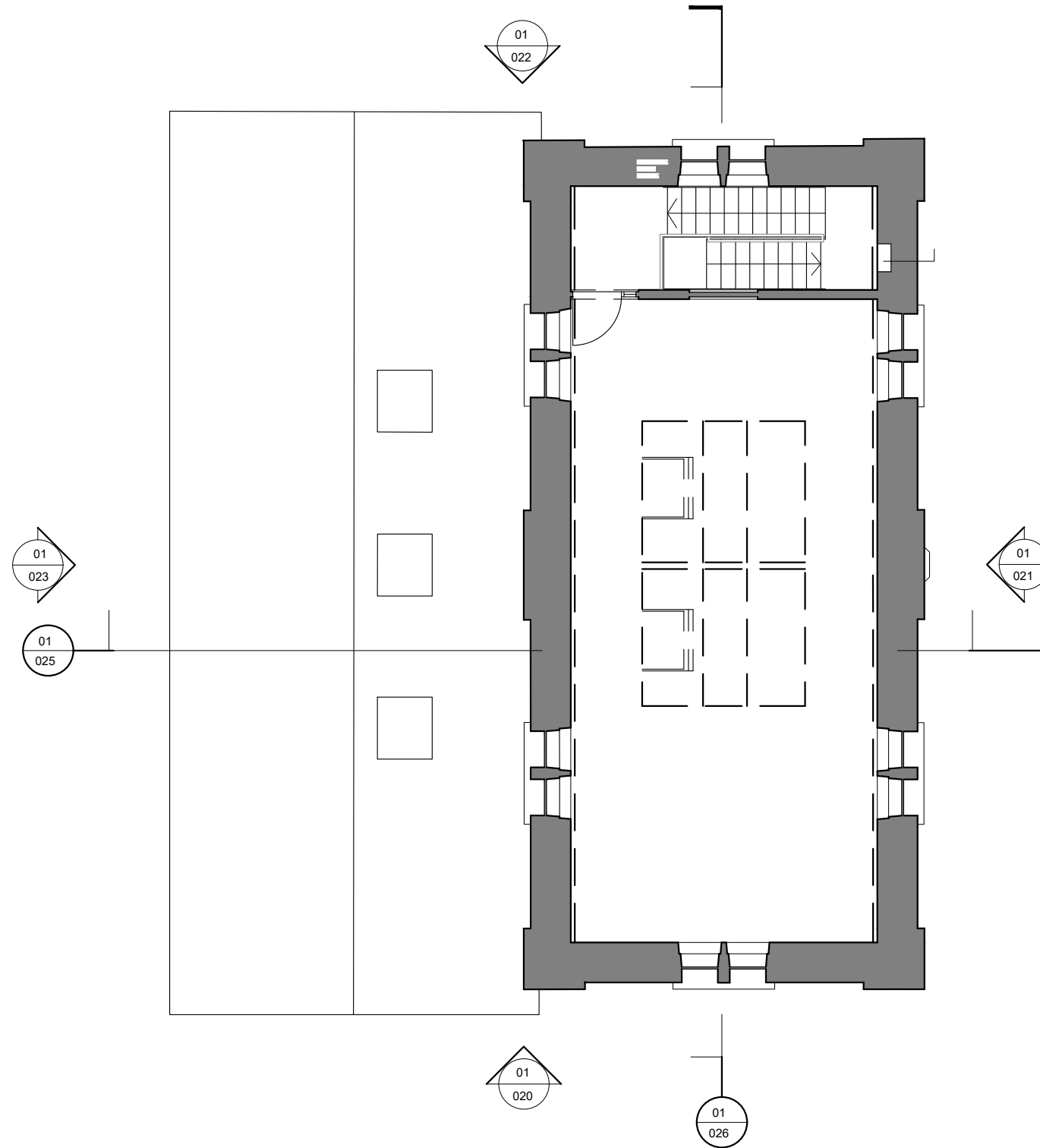
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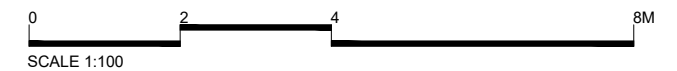
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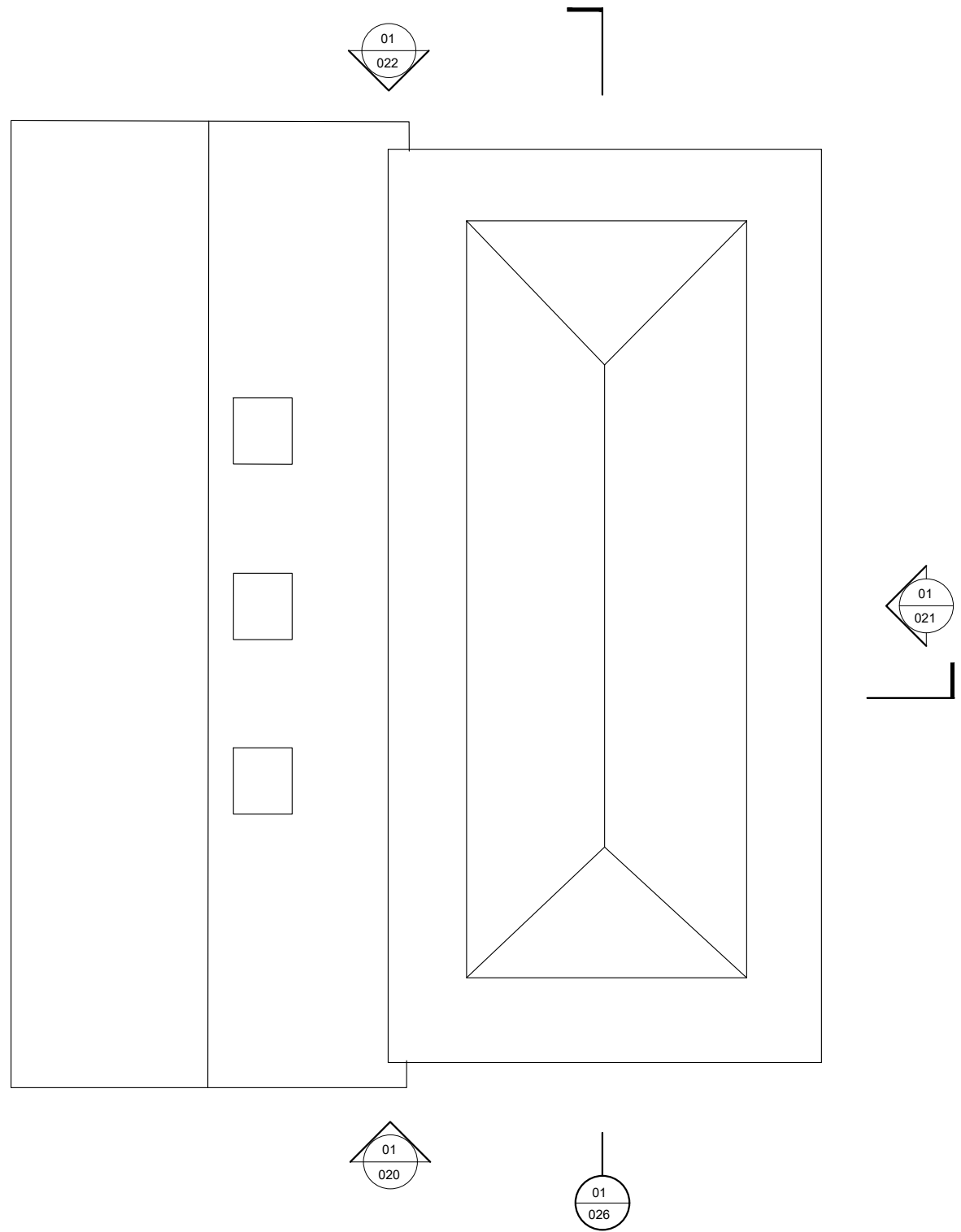
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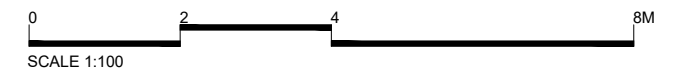
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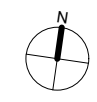
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| Project: | THE PUMP HOUSE |
| Title: | EXISTING ROOF PLAN |
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01 EXISTING SOUTH ELEVATION
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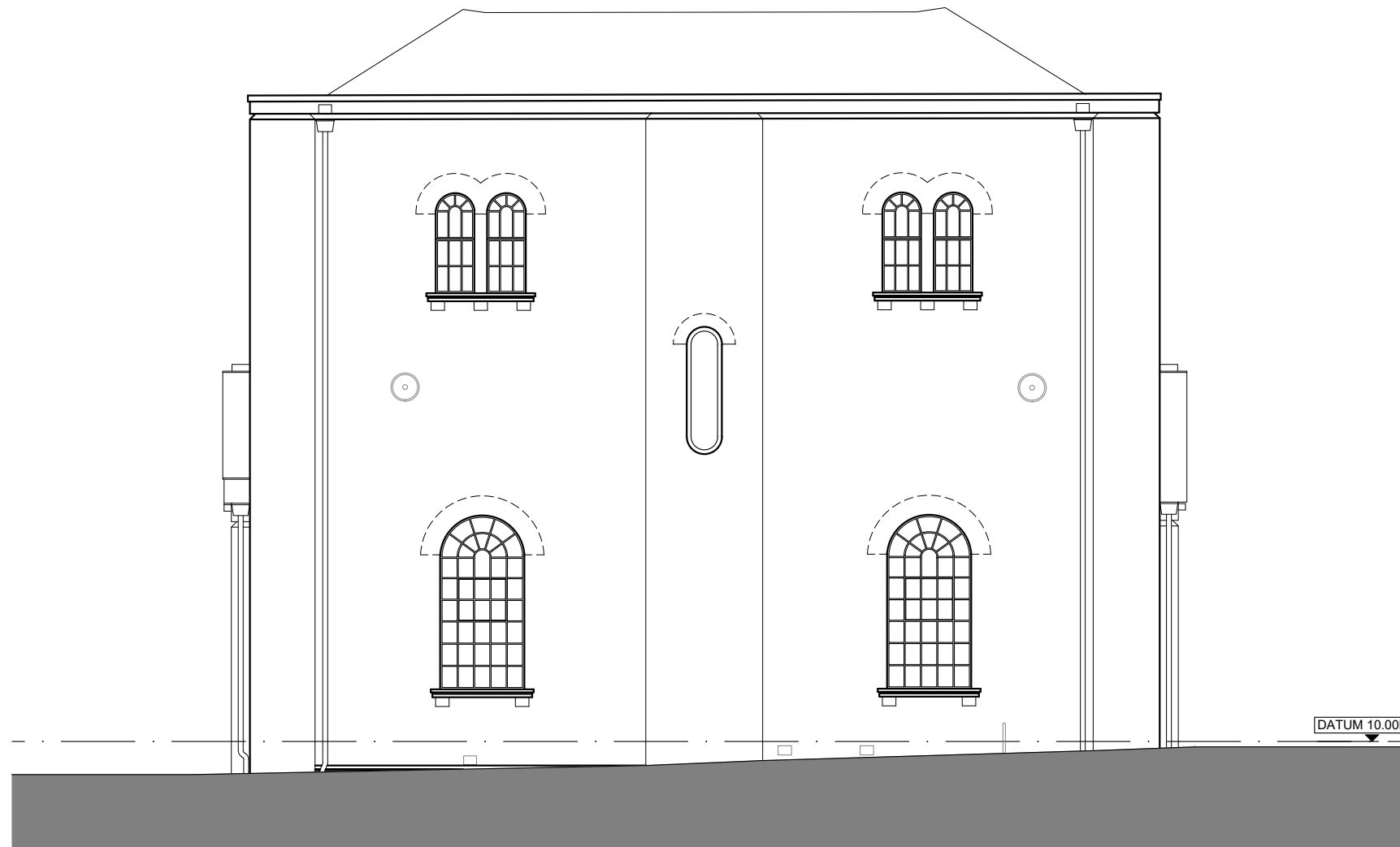
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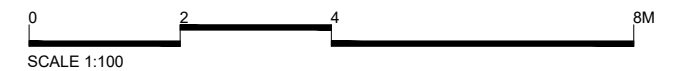
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| Project: | THE PUMP HOUSE |
| Title: | EXISTING SOUTH |
| Scale @A3: | 1:100 |
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01 EXISTING EAST ELEVATION
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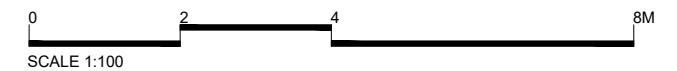
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01 EXISTING NORTH ELEVATION
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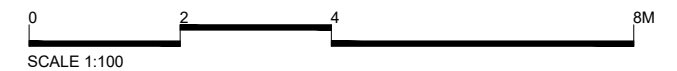
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01 EXISTING WEST ELEVATION
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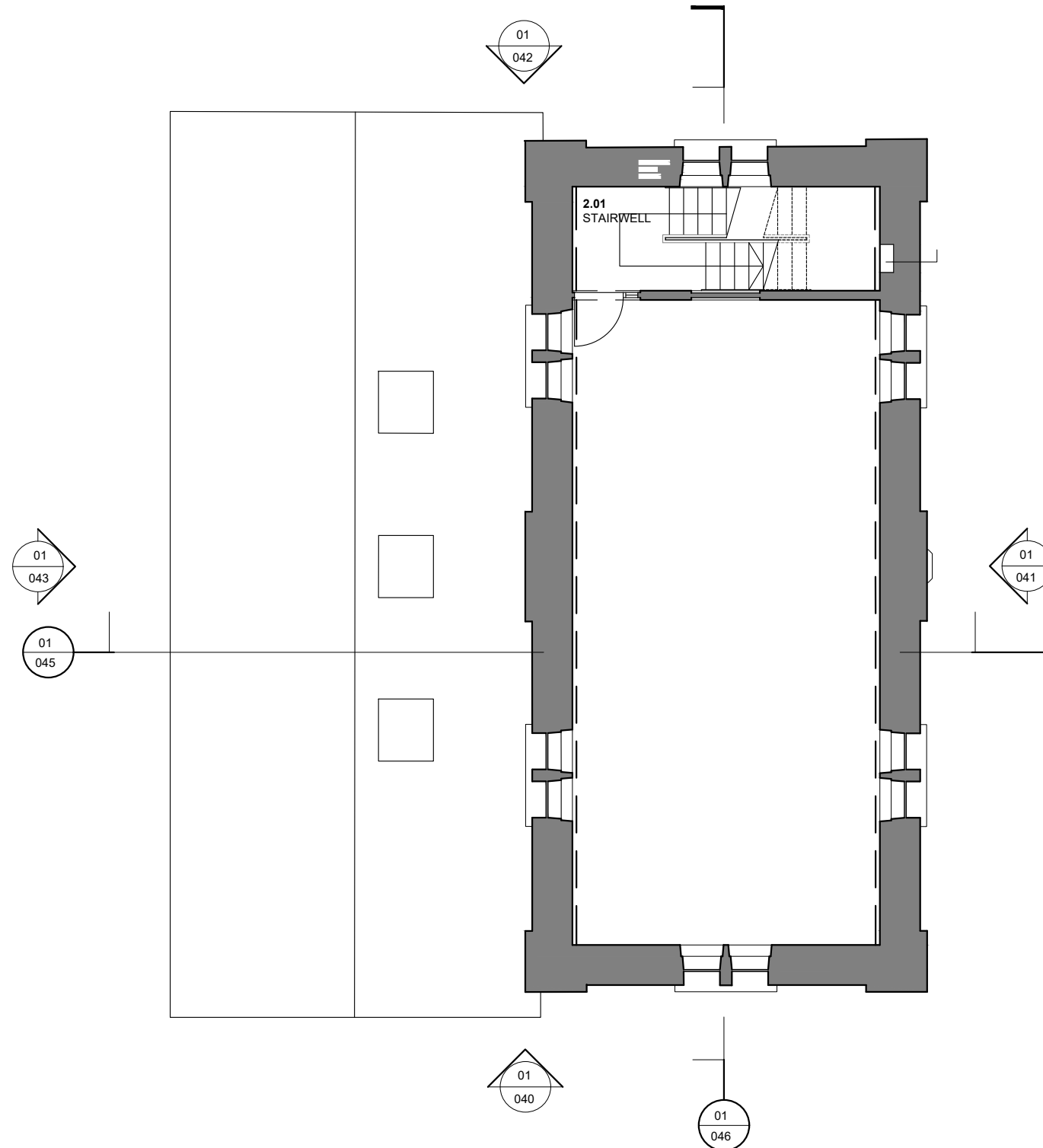
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STAGE 2

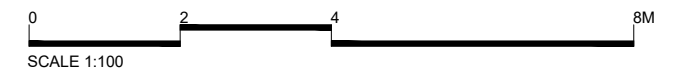
E: info@felixlewisarchitects.com
T: 01622 535 010
T: 01737 457 123
W: www.felixlewisarchitects.com

Felix Lewis Architects

| | |
|------------------------------|-------------------------|
| Project: | THE PUMP HOUSE |
| Title: | EXISTING WEST ELEVATION |
| Scale @A3: | 1:100 |
| Drawing and CAD File Number: | 348(P)023 |
| Rev: | 0 |



01 PROPOSED SECOND FLOOR PLAN
1:100 @A3



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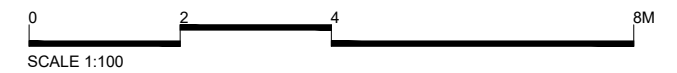
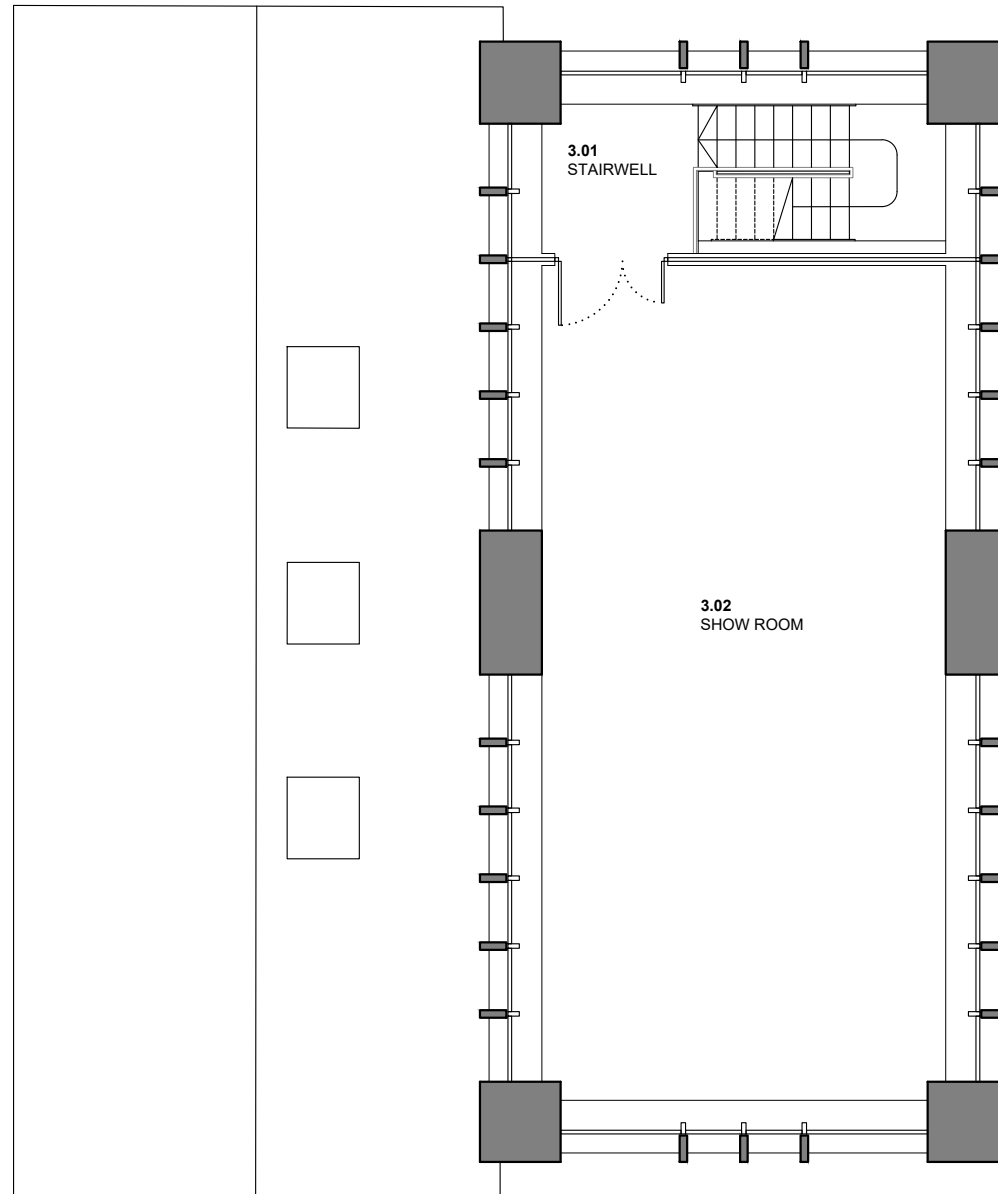


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 T: 01737 457 123
 W: www.felixlewisarchitects.com

Felix Lewis Architects

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|------------------------------|----------------------------|
| Project: | THE PUMP HOUSE |
| Title: | PROPOSED SECOND FLOOR PLAN |
| Scale @A3: | 1:100 |
| Drawing and CAD File Number: | 348(P)033 |
| Rev: | 0 |

01 PROPOSED THIRD FLOOR PLAN
1:100 @A3



| Rev | Date | Description | Drawn | Check |
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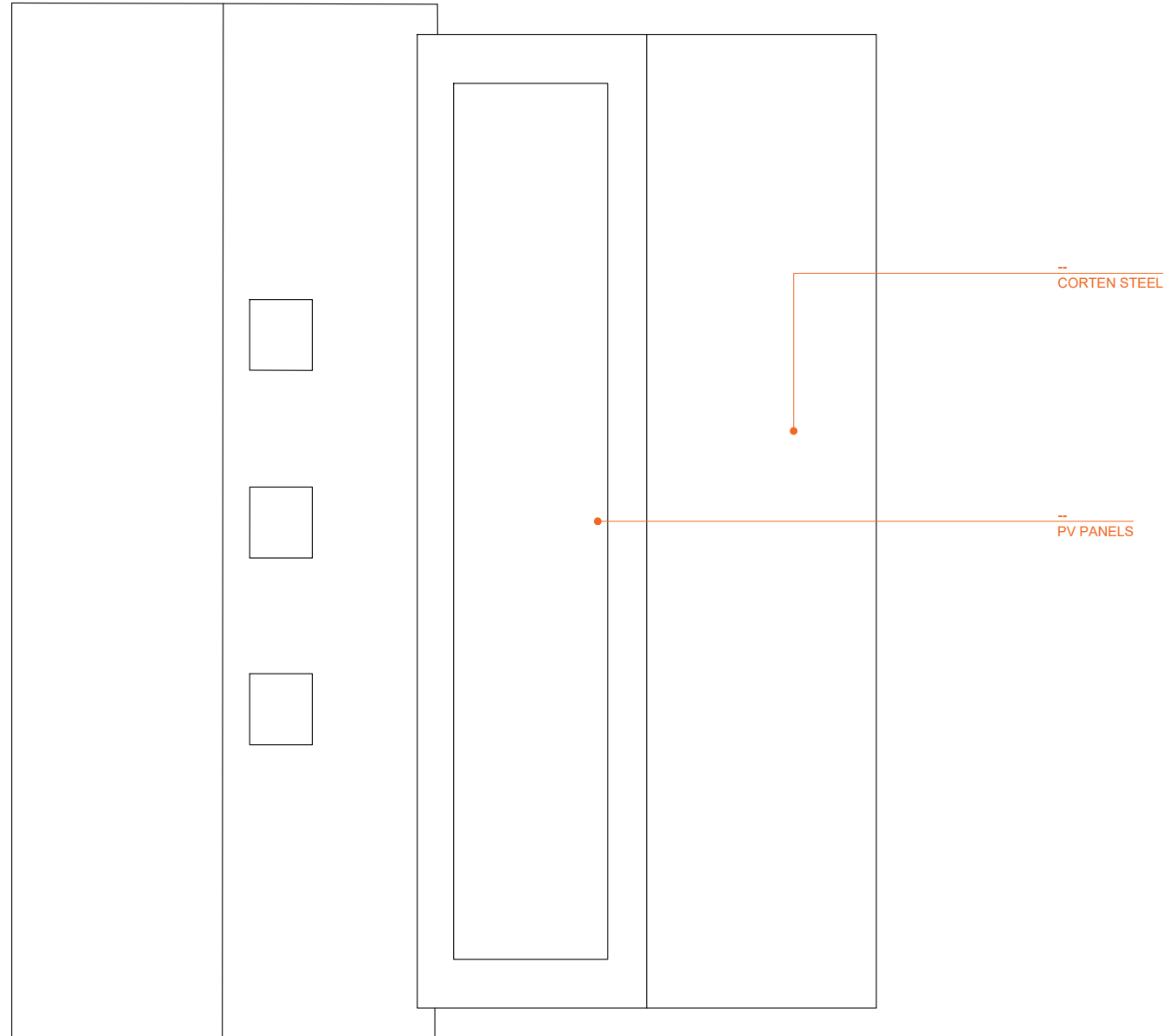
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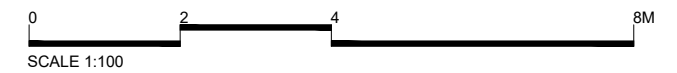
E: info@felixlewisarchitects.com
T: 01622 535 010
F: 01737 457 123
W: www.felixlewisarchitects.com

Felix Lewis Architects

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|------------------------------|---------------------------|
| Project: | THE PUMP HOUSE |
| Title: | PROPOSED THIRD FLOOR PLAN |
| Scale @A3: | 1:100 |
| Drawing and CAD File Number: | 348(P)034 |
| Rev: | 0 |



01 PROPOSED ROOF PLAN
1:100 @A3



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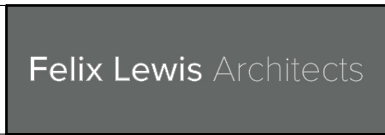
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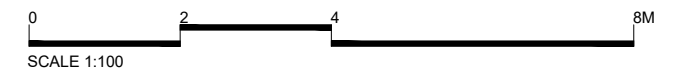
E: info@felixlewisarchitects.com
T: 01622 535 010
F: 01737 457 123
W: www.felixlewisarchitects.com



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|---------------------------|---|
| Project: THE PUMP HOUSE | |
| Title: PROPOSED ROOF PLAN | |
| Scale @A3: 1:100 | Drawing and CAD File Number: 348(P)035 Rev: 0 |



01 PROPOSED SOUTH ELEVATION
1:100 @A3



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STAGE 2

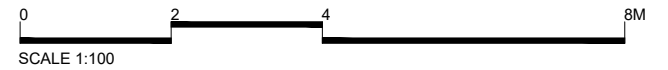
E: info@felixlewisarchitects.com
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F: 01737 457 123
W: www.felixlewisarchitects.com

Felix Lewis Architects

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|------------------------------|--------------------------|
| Project: | THE PUMP HOUSE |
| Title: | PROPOSED SOUTH ELEVATION |
| Scale @A3: | 1:100 |
| Drawing and CAD File Number: | 348(P)040 |
| Rev: | 0 |



01 PROPOSED EAST ELEVATION
1:100 @A3



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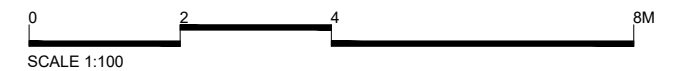
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Felix Lewis Architects

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|------------------------------|-------------------------|
| Project: | THE PUMP HOUSE |
| Title: | PROPOSED EAST ELEVATION |
| Scale @A3: | 1:100 |
| Drawing and CAD File Number: | 348(P)041 |
| Rev: | 0 |



01 PROPOSED NORTH ELEVATION
1:100 @A3



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STAGE 2

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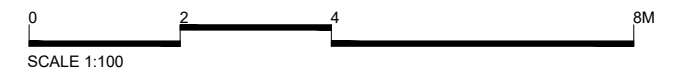
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| Project: | THE PUMP HOUSE |
| Title: | PROPOSED NORTH ELEVATION |
| Scale @A3: | 1:100 |
| Drawing and CAD File Number: | 348(P)042 |
| Rev: | 0 |



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BRICK
GLAZING

DATUM 10.00M

01 PROPOSED WEST ELEVATION
1:100 @A3



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Felix Lewis Architects

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| Project: | THE PUMP HOUSE |
| Title: | PROPOSED WEST ELEVATION |
| Scale @A3: | 1:100 |
| Drawing and CAD File Number: | 348(P)043 |
| Rev: | 0 |



Louise Welsford
Maidstone Borough Council
Maidstone House
King Street
Maidstone
ME15 6JQ

Our ref: DHA/PR/16835

11th May 2020

By E-mail Only

Dear Louise,

**PLANNING PRE-APPLICATION MEETING REQUEST
THE PUMP HOUSE, FARLEIGH BRIDGE, EAST FARLEIGH, ME16 9EB**

We write on behalf of the applicant, Chord Electronics, to seek a pre-application meeting to discuss the proposed extension of The Pump House, East Farleigh. The proposals are for a roof level addition to create additional business space at roof level.

To describe the proposed development we are pleased to include with this submission the following drawings and documents:

- Completed pre-application request form;
- An introduction to the proposals and initial planning assessment (i.e. this letter); and
- A Pre-Application Report prepared by Fleix Lewis Architects, providing information on the proposed development.

The proposals are for 'minor development' (area below 1,000sq m) and we understand that fees are charged on an hourly rate. We have assumed a meeting of no more than one hour to be attended by MBC planning and conservation officers.

We would welcome the opportunity to meet in person if possible and our client would be happy to host this on site should you wish to tie this in with a site-visit.

Site Location

The site is located within the settlement of East Farleigh, on the northern bank of the river.

The site is in very close proximity to East Farleigh Station and just to the north of East Farleigh Bridge.

planning transport design environment infrastructure

t. 01622 776226 e. info@dhaplanning.co.uk w. www.dhaplanning.co.uk
Maidstone Office, Eclipse House, Eclipse Park, Sittingbourne Road, Maidstone, Kent, ME14 3EN

DHA Planning Ltd. Registered in England. Registered number: 2683290



URS is a member of Register of Standards (RHS) Ltd

The Medway footpath runs adjacent to the site.



Proposed Development – The Pump House

Chord Electronics is an established business that designs, engineers and manufactures audio electronic products. The proposals will provide much needed additional business space for the company's expansion and to ensure that it can continue to operate from the site in East Farleigh.

The company is a local success story. Since its founding by John Franks in 1989, the company has manufactured and supplied amplifiers and acoustic equipment to world leading studios including Abbey Road, Sony Music (New York) and the Royal Opera House.

The proposals seek to reintroduce the roof volume of the building back to its original height (see below) to create an additional storey of accommodation for the business.



Existing and Proposed Elevations showing historical outline.

The proposed roof element has been carefully considered as a characterful and historically appropriate addition to the neo-romanesque style popular in the 19th Century.

As described in the accompanying design document:

“The proposal looks to work with the symmetrical arrangement of the existing facades with corner columns and central pilaster. In line with Romanesque architecture, the structure gets lighter as it gets taller.”

A detailed explanation of the architectural and design response is set out in the accompanying design statement prepared by Felix Lewis Architects. This document includes some indicative photographic renders which demonstrate how the resultant building will be appreciated within the surrounding village and landscape.

The current building provides office space for Chord Electronics and the additional storey will provide the high-quality meeting space required by the company.

Precedent Decision – The Works (GII Listed)

As you will be aware, planning permission and listed building consent was secured in August 2021 by DHA and Felix Lewis Architects for the roof level extension of the neighbouring ‘the Works’ building for Chord Electronics (reference 20/505875/FULL).

The Works building is a neo-Egyptian building and the approved design built upon this architectural theme to create a visually appealing and high-quality addition based upon the idea of an Egyptian Pylon.



CGI of Approved Roof Extension to the Work (Centre-Right), note the Pump House to Background and to the Left.

On design and heritage impact, the officers report commented:

“The revised scheme is considered of a proportion which relates to and which is not overwhelming, and the design is such that it is not considered to destroy the utilitarian or industrial character of the building. The building is highly visible and development would be highly visible, but indeed this is a building which clearly expects to dominate in the landscape, due to its strong form and design.”

Planning Designations

The Pump House is an unlisted building outside of any conservation area.

The building was likely erected in the late 19th Century and, in conjunction with the neighbouring former waterworks building (“the Works”) would have formed part of the complex of buildings making up the former Maidstone waterworks and pumping station.



East Elevation of the Pump House

The neighbouring former East Farleigh Waterworks building was constructed in 1860 to the designs of James Pilbrow in an Egyptian Revival style. The building is Grade II listed.

The adjacent Farleigh Bridge is a Grade I listed building and Scheduled Ancient Monument, likely dating from the 14th Century.

East Farleigh itself does not have defined settlement boundaries (the site is within the 'countryside' for the planning purposes). The surrounding area is identified as an area of local landscape importance.

The existing site is located within Flood Zone 3 (according to the Environment Agency mapping). The proposals do not however increase the risk of flooding elsewhere and no change of use is proposed to the building. No changes are proposed to the lower levels.

Development Principles

These proposals seek to retain the existing building in its current lawful Class E(g) (office / light industrial) use, providing additional required space for Chord Electronics, an established local employer and contributor to the local economy.

Paragraph 83(a) of the National Planning Policy Framework requires that planning policies and decisions should, inter alia, enable the sustainable growth of all types of business in rural areas.

In considering the principle of development of the Works building, the officers report recommending approval of that application stated:

“Policy SS1 of the local plan supports appropriate small scale employment opportunities in rural areas, as well as the preservation of the character and appearance of the countryside. Policy SP 21 allows for the expansion of the existing economic development premises in the countryside, providing that the scale and impact of the development is appropriate for its countryside location, in accordance with policy DM 37. That policy supports sustainable growth and expansion in rural areas, providing that a number of criteria are met.

These include the impact on highways, the impact on amenity, both visual and residential. Therefore, it is considered that the principle is acceptable, since the local plan supports the principle of the expansion of business uses within rural locations. “

In terms of the overall planning balance and any consideration to be made in respect of heritage impacts (i.e. paragraph 196 of the NPPF if any less than substantial harm is said to occur), the contribution that the proposals make in terms of the Borough’s economy and the opportunity to create additional employment in a relatively sustainable location through the appropriate re-use of the building would weigh significantly in favour as a public benefit.

Heritage Impacts

The Pump House is an unlisted building outside of a Conservation Area.

The site is not identified as a locally listed building.

An addition at roof level has the potential to have indirect impacts upon the setting of:

- The Works (Grade II) listed building;
- East Farleigh Bridge (Grade I) listed building and Scheduled Ancient Monument;
- Church of St Mary (Grade II*) listed building;
- The East Farleigh (Lower Road) Conservation Area.

The roof level addition would be visible in views from the higher ground on the southern bank of the Medway and from local view from the bridge and the immediately surrounding area.

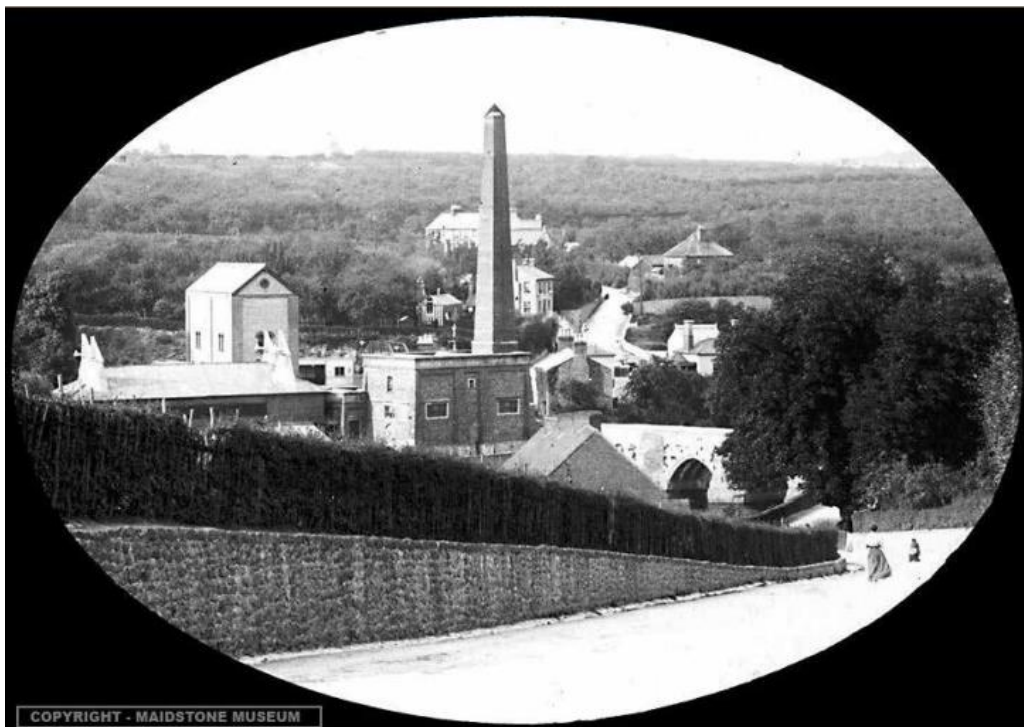
It would be appreciated as part of the complex of buildings between the river and the railway on this part of the Medway, including the Works, the neighbouring apartment building (part of the historic complex of buildings), neighbouring dwellings and the station.

The proposed development follows the principles accepted for the vertical extension of the Works; that is as explained in the accompanying design document:

“The concept and design rationale is the same for the recently consented Works building as it is at this Pump House building. As at the Works building, this proposal is also a 21st century

addition referencing the 19th original use, which in turn references an earlier historic style - in this case ecclesiastical architecture from early in the second millennium, in the case of the Works building from temple architecture over 3,000 years ago”

Evidence of the building’s original form is evident in historic mapping. The building (likely as originally constructed) was overall taller with a higher eaves line and it possessed a simple gabled roof with round window in the south elevation:



Historically, the building and its neighbouring former waterworks building with its distinctively large chimney would have been much more prominent in the landscape, both buildings having some architectural quality in their original form (particularly the Works, built by Pillbrow).

The proposed addition provides an appropriate contemporary response in terms of its ‘light-weight’ appearance, through the use of appropriate materials and by referencing the historical form of the building itself before the removal of its gabled roof (see above).

Overall, as a result of the high-quality architectural response and as a result of the reinstatement of the building’s original form, the development would represent an enhancement to the setting of the nearest heritage assets, including the Works building.



Local Landscape Considerations

In considering the roof level extension to the Works building in 2021 in landscape and visual terms, the officers report states:

“With regards to the impact upon the countryside and landscape of local value, this is a highly visible site, occupying a prominent location adjacent to the River Medway. However, whilst visible from a number of locations, it is not an isolated location and indeed the existing building is already seen as part of an existing group of buildings, clustered around the river and railway line. Also, the site is set low in the Medway Valley, with the land rising fairly steeply on both sides of the bridge. In consequence, although highly visible, since it would be at roof level, the prominence is considered somewhat reduced by the low setting of the site in the Valley and its context, where it is to a certain degree seen as part of the existing mixed character group of buildings. There is no strong pattern to the development here and a mixture of designs, scale is and materials and therefore, in consequence, it is considered that the development could be absorbed as part of the existing group.”

The visual effects in isolation and in combination with the approved roof level addition on the Works in longer views is shown in the accompanying design report.

Overall the addition to the building would be read as a high quality and contextually appropriate addition which sits comfortably amongst the surrounding industrial, former industrial and urban development.

For the reasons previously concluded by the Council (see above), it can be concluded that the development can be well ‘absorbed as part of the existing group’.

Neighbours’ Amenity

The addition would not create overlooking or overshadowing of neighbouring residential properties (such as those to the south and east) as a result of orientation and the spacing between buildings. As necessary, this could be verified by way of a daylight and sunlight assessment submitted with an application.

The neighbouring residential buildings are primarily two storeys in height and already site well below the parapet line of the existing building. The roof level addition is unlikely to create additional impacts in terms of overlooking therefore (an impact also limited by the commercial use of the site and proposal). We note the cottages to the east on Farleigh Lane have no rear gardens.



Accessibility

The vehicular access to the site is established and the business benefits from a number of dedicated parking spaces. Unlike typical rural business sites, The Works has good accessibility by public transport (bus and railway) and is positioned adjacent to East Farleigh Medway Valley Line station.

Advice Sought

Officers' advice is sought in respect of:

- The acceptability of the proposed roof level addition in terms of the architectural and historic significance of The Works building (see accompanying design statement commentary);
- The contribution that the proposals can make to local character and the landscape of the Medway Valley, including the settlement of East Farleigh;
- The acceptability of the proposed development in land use terms and having specific consideration to Policies DM21 and DM37;
- Any other development control considerations relevant to the proposals.

Proposed Planning Application Documents

We welcome the opportunity to agree the likely scope of required application documents in advance so as to avoid any unnecessary delay should an application be made.

It is anticipated that the planning application is to be made in full detail and supported with the following plans and information:

- Site location plan, existing and proposed site plans ;
- Existing and proposed plans, elevations and sections etc;
- Design and Access Statement;
- Planning Statement;
- Heritage Statement;
- Flood Risk Assessment (the site is within Flood Zone 3);
- Daylight and Sunlight Assessment;
- The requisite statutory application fee;
- CIL form etc.



Conclusion

I trust this letter and accompanying drawings and information provides a useful introduction to the proposals and we look forward to meeting with you to discuss the proposals in further detail. We would be most grateful if you could provide us with some suggested dates as soon as possible.

If you require any further information or have any queries prior to responding please do not hesitate to contact me.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'P. Reedman'.

Patrick Reedman MRTPI

Associate Director

DHA Planning Ltd

Direct email: Patrick.Reedman@dhaplanning.co.uk

Appendix

B. Third Party Data

Thank you for your enquiry.

We respond to requests under the Freedom of Information Act 2000 and Environmental Information Regulations 2004. The information is attached.

| | |
|-------------|---|
| Name | Product 5, 6 and 7 |
| Description | <p><i>Report Name: Medway Model 2015 – Medway Catchment Study (v3 Oct 2015) including Appendix A, B, C and D</i></p> <p><i>Model Output Data for Medway Model 2015</i></p> <p><i>Calibrated and Verified Model Input Data for Medway Model 2015</i></p> |
| Licence | Environment Agency Conditional Licence |
| Conditions | <p>1.0 You may use the Information for your internal or personal purposes and may only sublicense others to use it if you do so under a written licence which includes the terms of these conditions and the agreement and in particular may not allow any period of use longer than the period licensed to you.</p> <p>2.0 Notwithstanding the fact that the standard wording of the Environment Agency Conditional Licence indicates that it is perpetual, this Licence has a limited duration of 5 years at the end of which it will terminate automatically without notice.</p> <p>3.0 We have restricted use of the Information as a result of legal restrictions placed upon us to protect the rights or confidentialities of others. In this instance it is because of third party data. If you contact us in writing (this includes email) we will, as far as confidentiality rules allow, provide you with details including, if available, how you might seek permission from a third party to extend your use rights.</p> <p>4.1 The Information may contain some data that we believe is within the definition of “personal data” under the Data Protection Act 2019 but we consider that we will not be in breach of the Act if we disclose it to you with conditions set out in this condition and the conditions above. This personal data comprises names of individuals or commentary relating to property that may be owned by an individual or commentary relating to the activities of an individual.</p> |

| | |
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| | <p>4.2 Under the Act a person who holds and uses or passes to others personal data is responsible for any compliance with the Act and so we have no option but to warn you that this means you have responsibility to check that you are compliant with the Act in respect of this personal data.</p> <p>5.0 The location of public water supply abstraction sources must not be published to a resolution more detailed than 1km2. Information about the operation of flood assets should not be published.</p> <p>6.1 Where we have supplied model data which may include model inputs or outputs you agree to supply to the Environment Agency copies of any assessments/studies and related outputs, modifications or derivatives created pursuant to the supply to you of the Information, all of which are hereinafter referred to as “the Data”.</p> <p>6.2 You agree, in the public interest to grant to the Environment Agency a perpetual royalty free non-exclusive licence to use the Data or any part thereof for its internal purposes or to use it in any way as part of Environment Agency derivative products which it supplies free of charge to others such as incorporation into the Environment Agency's Open Data mapping products.</p> |
| Information Warnings | Please be aware that model data is not raw, factual or measured but comprises of estimations or modelled results based on the data available to us. |
| Attribution | <p>Contains Environment Agency information © Environment Agency and/or database rights.</p> <p>May contain Ordnance Survey data © Crown copyright 2019 Ordnance Survey 100024198.</p> |

Data Available Online

Many of our flood datasets are available online:

- Flood Map For Planning ([Flood Zone 2](#), [Flood Zone 3](#), [Flood Storage Areas](#), [Flood Defences](#), [Areas Benefiting from Defences](#), ,)
- [Risk of Flooding from Rivers and Sea](#)
- [Historic Flood Map](#)
- [Current Flood Warnings](#)