



# TOPPING ENGINEERS

CONSULTING CIVIL &  
STRUCTURAL ENGINEERS

## FLOOD RISK ASSESSMENT

**LOCATION:**

Vincam Close, Twickenham, TW2 7AB

**CLIENT:**

NFC HOMES LTD

**DOCUMENT REF:**

21495-FRA-001

**REVISION/DATE:**

Revision A

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Revision	Description	Date	Author	Checked
A	First Issue	Aug 2021	A.Biag	A.Dyson

## 1.0 INTRODUCTION

This Flood Risk Assessment (FRA) is compliant with the requirements set out in the National Planning Policy Framework (NPPF) and the associated Planning Practice Guidance. The FRA has been produced on behalf of NFC Homes, in respect of a planning application for the proposed development at Vincam Close, Twickenham, TW2 7AB.

<b>Site Name</b>	Vincam Close
<b>Location</b>	Vincam Close, Twickenham, TW2 7AB
<b>NGR (approx.)</b>	513440, 173789
<b>Application Site Area (ha)</b>	0.2ha
<b>Development Type</b>	Residential
<b>NPPF Vulnerability</b>	Low
<b>EA Flood Zone</b>	Flood Zone 1
<b>EA Office</b>	Hertfordshire and North London
<b>Local Planning Authority</b>	London Borough of Richmond upon Thames

**Table 1.1** - Site Summary

### 1.1 SOURCES OF DATA

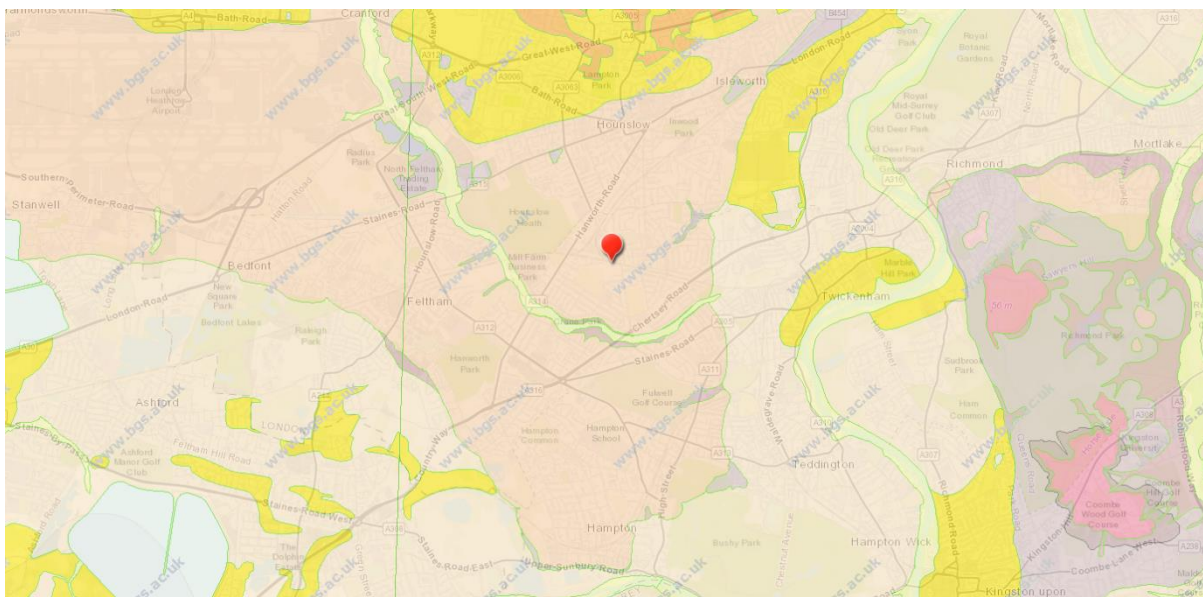
The report is based on the following information:

- i. Environment Agency information
- ii. London Borough Council Strategic Flood Risk Assessment

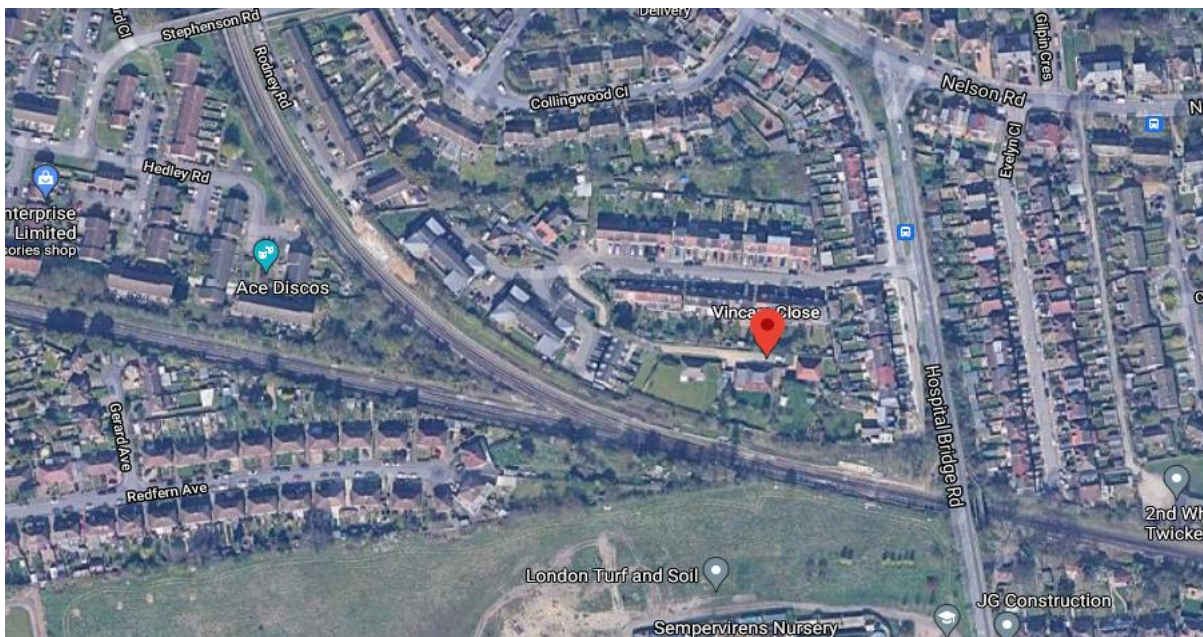
### 1.2 EXISTING SITE

The site in question is located in the south-west London town of Twickenham. The site lies to the North-East of the town of Twickenham. The site is near a series of housing estates and is bounded by Hospital Bridge Road to the West and Vanquish Close to the East. To the south of the site, there are a few landscaping/construction type sites located off Stirling Road. The nearest river is the River Crane, located 1.06km south of Vincam Close. There is a small waterbody nearby (150m south-west from site) located adjacent to the rail line at Whitton train station.

Geologically, the bedrock is described as clay and silt. The site is consistent throughout, and bedrock is similar in all nearby regions. See the Geology of Britain map below.



**Figure 1.1** – Geology of Britain map



**Figure 1.2** - Site Location

## 1.3 PROPOSED DEVELOPMENT

The proposed development is set to consist of 8 no. residential units and associated gardens, parking and external areas.

## 1.4 FLOOD RISK PLANNING POLICY

### National Planning Policy Framework

The NPPF sets out the Government’s national policies on different aspects of land use planning in England in relation to flood risk. Planning Practice Guidance is also available online.

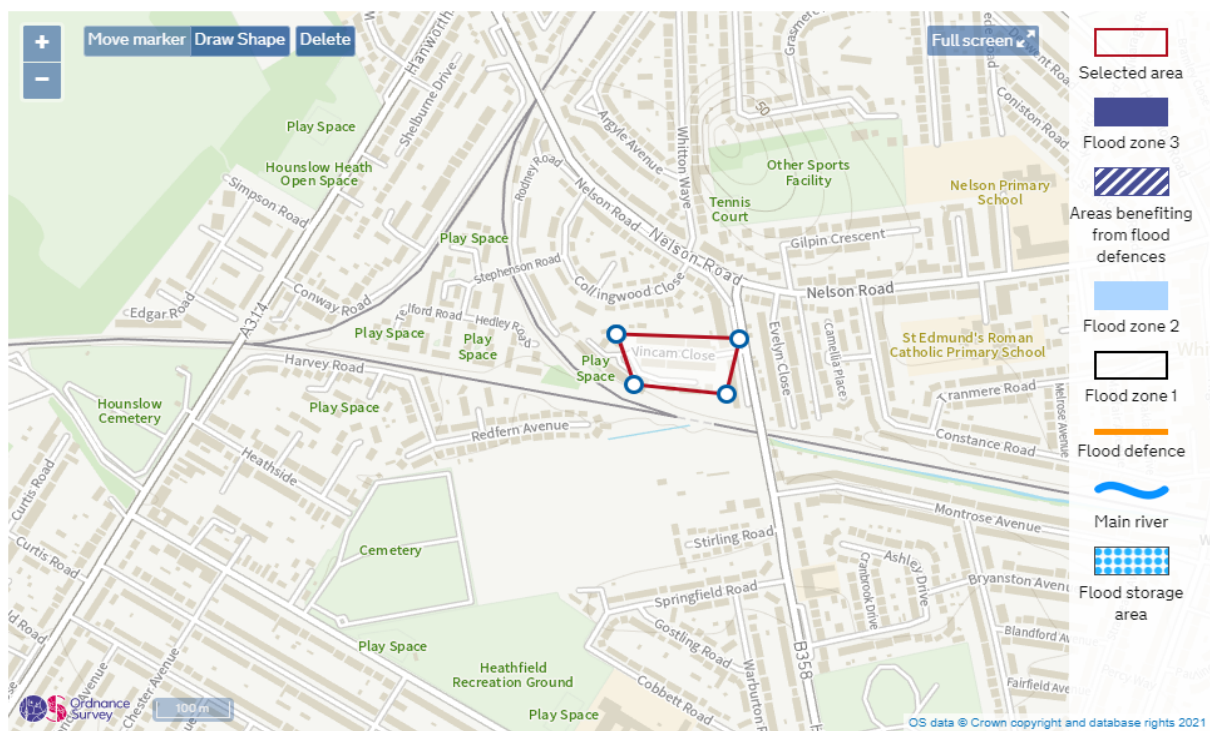
The Planning Practice Guidance sets out the vulnerability to flooding of different land uses. It encourages development to be located in areas of lower flood risk where possible and stresses the importance of preventing increases in flood risk off site to the wider catchment area.

The Planning Practice Guidance also states that alternative sources of flooding, other than fluvial (river flooding), should also be considered when preparing a Flood Risk Assessment.

This Flood Risk Assessment is written in accordance with the NPPF and the Planning Practice Guidance.

## **Flood Zones**

The Flood Zone Map for Planning has been prepared by the Environment Agency. This identifies areas potentially at risk of flooding from fluvial or tidal sources. An extract from the mapping is included as Figure 1.3 below.



**Figure 1.3 - Environment Agency Flood Zone Mapping**

The site is shown to be located entirely within Flood Zone 1 (Low Probability) therefore the site is considered to be low risk of flooding. Flood Zone 1 is defined as land assessed as having less than a 0.1% annual probability of flooding from fluvial and tidal sources.

Table 2 of the Planning Practice Guidance classifies land use. Under these classifications the proposed health care unit is considered to be 'More Vulnerable' to the potential impacts of flooding.

Table 3 of the Planning Practice Guidance identifies that any development is considered appropriate within Flood Zone 1.

Flood Risk Vulnerability Classification	Essential Infrastructure	Water Compatible	Highly Vulnerable	More Vulnerable
Flood Zone 1	✓	✓	✓	✓
Flood Zone 2	✓	✓	Exception test required	✓
Flood Zone 3a	Exception test required	✓	x	Exception test required
Flood Zone 3b	Exception test required	✓	x	x

## 1.5 OTHER RELEVANT POLICY AND GUIDANCE

### Strategic Flood Risk Assessment

The City of York Flood Risk Assessment (SFRA) was prepared to review flood risks on a much wider scale to assess the potential for new development within the study area. The SFRA was used as an evidence base for Local Development Frameworks for each Local Planning Authority.

The SFRA therefore aims to bring together all available flood risk information for a variety of sources to provide a robust assessment. The SFRA therefore is useful for this site-specific FRA by highlighting available data and instances of known flooding in the area. Although written under the guidance of Planning Policy Statement 25, the SFRA is still considered to include relevant information.

**2.0 POTENTIAL SOURCES OF FLOOD RISK**

The table below identifies the potential sources of flood risk to the site, and the impacts which the development could have in the wider catchment prior to mitigation. These are discussed in greater detail in the forthcoming section. The mitigation measures proposed to address flood risk issues and ensure the development is appropriate for its location are discussed within Section 3.0.

Flood Source	Potential Risk				Description
	High	Medium	Low	None	
Fluvial			X		The site is located in flood zone 1.
Tidal				X	There are no tidal influences effecting the site.
Canals				X	None present.
Groundwater			X		Ground conditions are not conducive to fluctuating groundwater levels.
Reservoirs and waterbodies				X	The site is shown to fall outside of the catchment for reservoir and waterbodies flooding.
Sewers			X		The site in question is higher than the surrounding sewers therefore there is a very low risk.
Pluvial runoff		X			An area of the site is within a medium-risk area of surface water flooding.
Effect of Development on Wider Catchment				X	The impermeable area of the site is not being altered.

**Table 2.1** - Pre-Mitigation Sources of Flood Risk

**2.1 FLUVIAL FLOOD RISK**

As previously mentioned, the site is shown to be within Flood Zone 1 and therefore poses a low risk to the proposed development.

The risk of flooding posed to the proposed development is low. This is because there is only one watercourse near the site that can pose a threat. However, the watercourse is 75m away from the site and is it a lower level.

Mitigation measures to address the residual risk posed by the watercourses surrounding the site are discussed within Section 3.0 of this report.

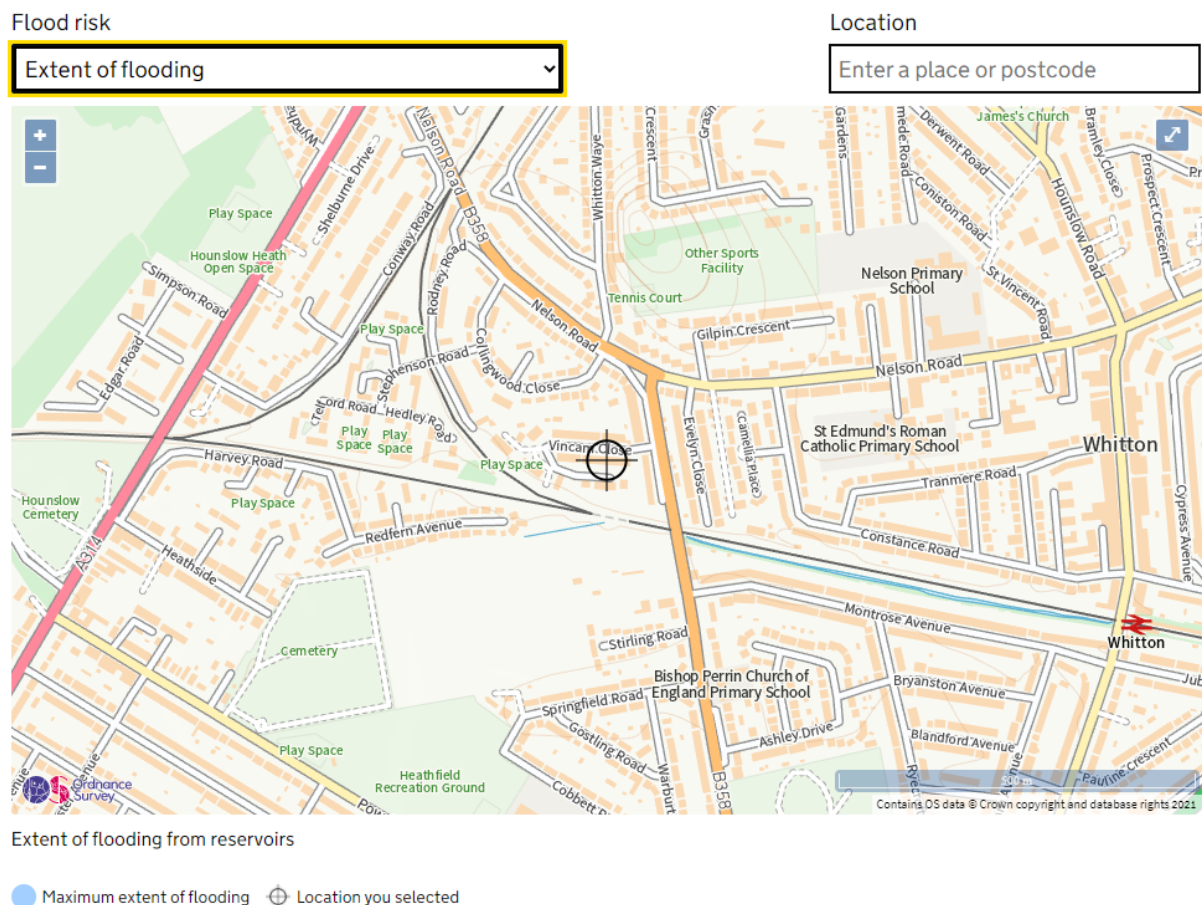
**2.2 GROUNDWATER FLOOD RISK**

Subject to completion of site investigation to confirm we would assume that natural ground water level is located well below the site surface and the nature of the strata means it is unlikely that there will be perched water above this level.

We therefore do not consider there is a risk of groundwater flooding affecting the development subject to final confirmation upon completion of suitable site investigation.

**2.3 FLOOD RISK FROM RESERVOIRS & LARGE WATERBODIES**

Reservoir failure flood risk mapping has been prepared by the Environment Agency, this shows the largest area that might be flooded if a reservoir were to fail and release the water it holds. The map displays a worst-case scenario and is only intended as a guide. An extract from the mapping is included as Figure 2.1.



**Figure 2.1** - Environment Agency Reservoir Failure Flood Risk Map

Mapping demonstrates the site and possible access routes are far removed from the flood extent associated with flooding from large reservoirs. A review of Ordnance Survey mapping shows that no areas or reservoir flooding encroach the site.

As such, there is considered to be no risk from reservoir flooding.

**2.4 FLOOD RISK FROM SEWERS**

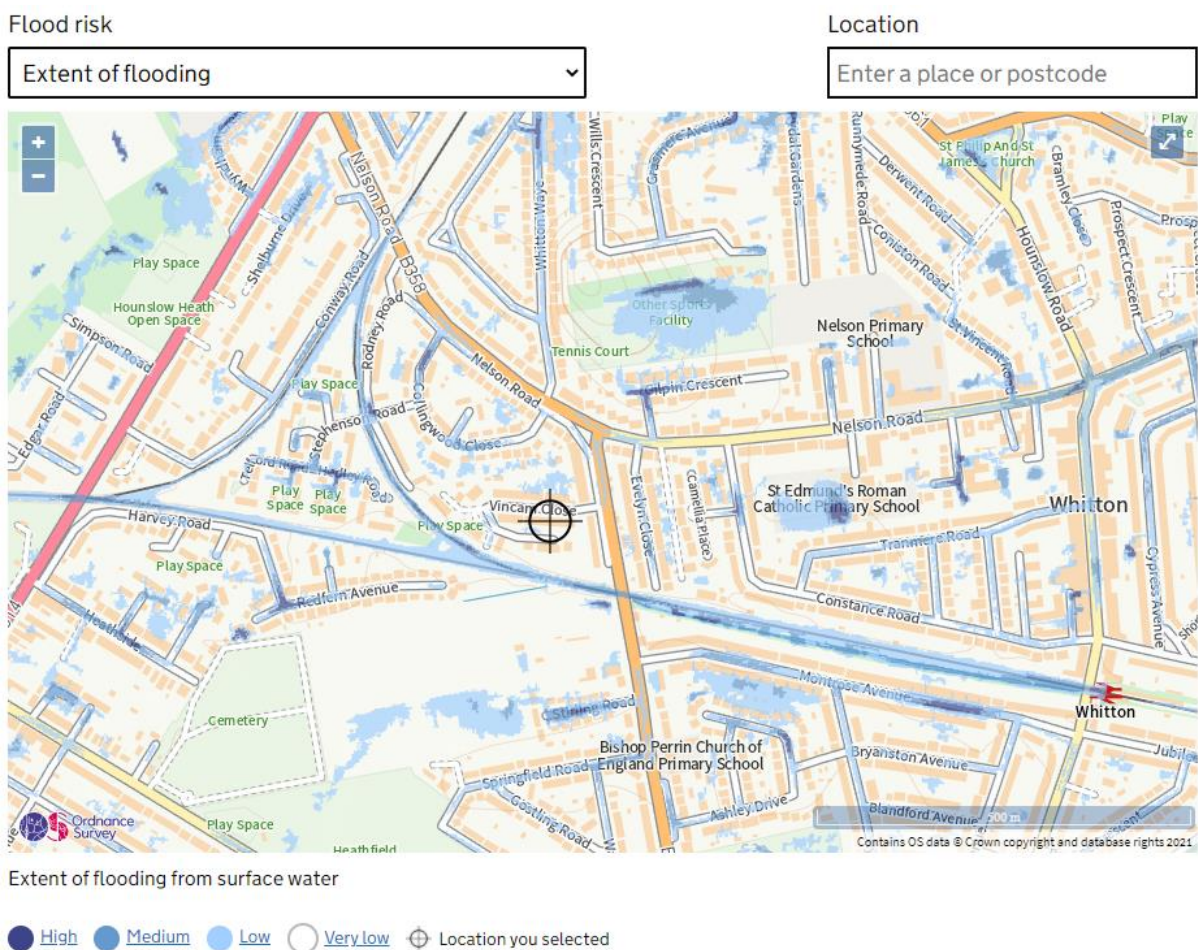


The site in question lies above any main roads which is potentially where any United Utilities sewers will lie.

As such, it is considered that there is no risk of flooding from sewers.

## 2.5 PLUVIAL FLOOD RISK

Risk of flooding from surface water mapping has been prepared by the Environment Agency, this shows the potential flooding which could occur when rainwater does not drain away through the normal drainage systems or soak into the ground but lies on or flows over the ground instead. An extract from the mapping is included as Figure 2.



**Figure 2.2** - Risk of Flooding from Surface Water Mapping

The mapping produced by the Environment Agency shows that there are several small areas of the site that are at risk of surface water flooding. These areas do not encroach the existing building and therefore will not affect the altered building and extension.

Therefore, the risk posed by this threat is considered negligible.

## 2.6 EFFECT OF DEVELOPMENT ON WIDER CATCHMENT

### 2.6.1 Development Drainage

The current site is considered to be brownfield. The amount of impermeable area will not be altered. Therefore, the existing drainage systems will be suitable to discharge the surface

## POTENTIAL SOURCES OF FLOOD RISK



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water from the site. This also means that there will be no additional run-off leaving the site.

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## 3.0 FLOOD RISK MITIGATION

Section 2.0 has identified the sources of flooding which could potentially pose a risk to the site and the proposed development. This section of the FRA sets out the mitigation measures which are to be considered within the proposed development detail design to address and reduce the risk of flooding to within acceptable levels.

### 3.1 SITE ARRANGEMENTS

#### 3.1.1 Sequential Arrangement

The Flood Zone mapping shows the site to be located within flood zone 1.

#### 3.1.2 Finished Levels

Given the site's location within Flood Zone 1, there are no specific requirements for finished floor levels with regard to flood risk. The existing ground level of the building is suitable and will remain.

## 4.0 CONCLUSIONS AND RECOMMENDATIONS

This Flood Risk Assessment (FRA) is compliant with the requirements set out in the National Planning Policy Framework (NPPF) and the associated Planning Practice Guidance. The FRA has been produced on behalf of Tees, Esk & Wear Valley NHS Foundation Trust.

This report demonstrates that the proposed development is not at significant flood risk, and simple mitigation measures have been recommended to address any residual risks that may remain. The identified risks and mitigation measures are summarised within Table 4.1.

Flood Source	Proposed Mitigation Measure
Fluvial	Site is shown to be in Flood Zone 1.
Impact of the Development	Strategic surface water drainage strategy prepared for wider development will ensure a sustainable approach to surface water management.

**Table 4.1** - Summary of Flood Risk Assessment

In compliance with the requirements of National Planning Policy Framework, and subject to the mitigation measures proposed, the development could proceed without being subject to significant flood risk. Moreover, the development will not increase flood risk to the wider catchment area as a result of suitable management of surface water runoff discharging from the site.

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## 5.0 APPENDICES

Appendix A – Proposed Site Layout

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**Appendix A**  
**Site Location Plan**

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**Appendix B**  
**Proposed Site Layout**

173850

173800

513400

VANQUISH CLOSE

21 to 35

42

35





173850

173800

513400

42

21 to 35

VANQUISH CLOSE

35

