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Flood Risk Assessment Rev0

Collins Court,
Cascade Avenue

27 June 2023

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Appendices

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Prepared by	Checked by	Date
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This document has been prepared solely as a Flood Risk Assessment for Firstplan Ltd. Base Energy accepts no responsibility or liability for any use that is made of this document other than by the Client for the purposes for which it was originally commissioned and prepared.

1. Introduction

This Flood Risk Assessment (Rev0) has been prepared to support the planning application for the proposed residential development at Collins Court, Cascade Avenue.

A site location plan is provided in **Appendix A**.

Existing Site

The existing site comprises a former tennis club house and associated asphalt tennis courts. The existing site layout plan is shown on the topographic survey in **Appendix B**.

The topographic survey confirms that site levels range from ~54.96m AOD at the boundary of the site nearest The Chine, sloping down to ~53.60m AOD at the boundary nearest Cascade Avenue.

Development Proposals

Proposals are for two new residential terraces, each comprising 4no. dwellings, with one terrace fronting The Chine and one terrace fronting Cascade Avenue. Additionally, the existing tennis club house, The Pavilion, is to be renovated and converted into a new dwelling.

The proposed site layout plans are shown in **Appendix C**.

2. Planning Policy- Flood Risk

National Planning Policy Framework

The aim of the National Planning Policy Framework (NPPF) (and accompanying Planning Practice Guidance (PPG)) is to direct development away from areas at highest risk of flooding; where development is necessary, it should be made safe without increasing flood risk elsewhere.

The NPPF states that a Flood Risk Assessment (FRA) is required to support a planning application for developments that are:

- located in Flood Zone 2 and/or Flood Zone 3
- located in Flood Zone 1 and comprise 1ha or above
- located in a Critical Drainage Area (CDA)

In order to provide an indication of the flood zone classification of the site, and to ascertain whether an FRA is required, the starting point is the EA flood maps which are available on the EA website.

Environment Agency Flood Map

The EA flood maps show fluvial and tidal flood outlines based on the following:

- Flood Zone 1 - land assessed as having less than 1 in 1000 annual probability of river or sea flooding
- Flood Zone 2 - land assessed as having between a 1 in 100 and 1 in 1000 annual probability of river flooding, or between a 1 in 200 and 1 in 1000 annual probability of flooding from the sea
- Flood Zone 3 - land assessed as having a 1 in 100 or greater annual probability of river flooding, or a 1 in 200 or greater annual probability of flooding from the sea

The flood maps available on the EA website confirm that the site is located in Flood Zone 1.

Critical Drainage Areas

If a site is located in Flood Zone 1 and comprises less than 1ha, an FRA would be required if the site is within an area which has critical drainage problems (i.e., a Critical Drainage Area - CDA), or where the Local Planning Authority specifically requested an FRA.

It is understood that the site is not located within a designated CDA.

Local Planning Authority

As part of the planning application process, a Basement Impact Assessment (BIA) was prepared by Southern Testing. The BIA states:

"no formal flood risk assessment has been undertaken for the site and specialist advice should be sought in relation to potential flooding issues".

Subsequently, Haringey Council has requested that an FRA is provided.

An assessment of all potential sources of flood risk is provided in the following section.

3. Flood Risk Assessment

Fluvial / Tidal Flood Risk

The EA Flood Maps confirm that the site is located in Flood Zone 1 and is therefore considered to be at low risk of fluvial / tidal flooding.

Critical Drainage Area (CDA)

It is understood that the site is not in a CDA.

Groundwater Flooding

Groundwater flooding generally occurs during intense, long-duration rainfall events, when infiltration of rainwater into the ground raises the level of the water table until it exceeds ground levels. It is most common in low-lying areas overlain by permeable soils and permeable geology, or in areas with a naturally high water table.

Reference has been made to the British Geology Survey (BGS) Geology Maps. These show that the site is underlain by London Clay.

Additionally, as part of the BIA for the site, 2 boreholes were taken. The records confirm that the ground conditions comprise a covering (up to 1.2m) of Made Ground over a silty CLAY of the London Clay Formation.

The BIA also states the following:

No groundwater was encountered during drilling (of the boreholes). However, standing groundwater levels were recorded between 0.85-2.8mbgl.

Based on recorded standing water levels, the basement construction will intersect the groundwater surface. Therefore appropriate dewatering and construction requirements will need to be considered during design.

Surface Water Flooding

Surface water flooding results from rainfall generated overland flows, before the runoff reaches a watercourse/ drainage system, or where the watercourse/ drainage system is overwhelmed and unable to accept further runoff. Surface water runoff is usually associated with high intensity rainfall events but may also occur with lower intensity rainfall where the ground is saturated, developed or otherwise has low permeability resulting in overland flows and ponding within depressions in the topography.

The EA provide maps on their website which illustrate the risk of surface water flooding along with potential depths and velocities; these show that The Chine and the site are at very low risk of surface water flooding. Cascade Avenue so shown to be at medium to high risk of surface water flooding.

The site slopes from The Chine to Cascade Avenue and therefore surface water flows arising to the west of the site would naturally flow through the site towards Cascade Avenue.

A cross section of the proposed site is provided overleaf.

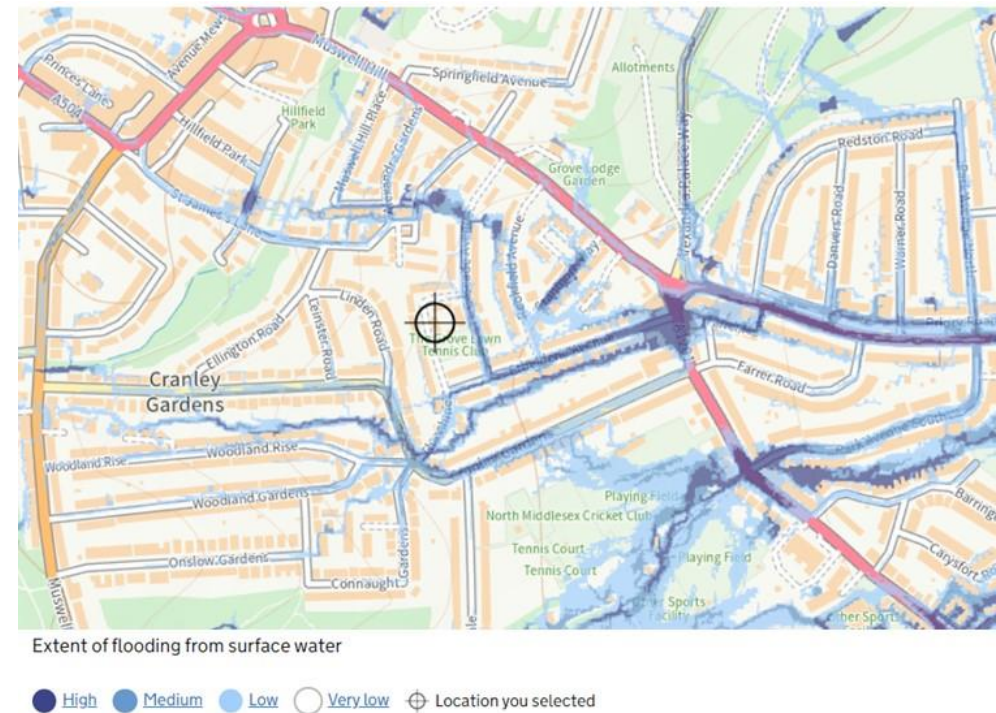


Figure 1 - Environment Agency Surface Water Flooding Maps



A Surface Water and SuDS Report has been prepared by Base Energy in support of the planning application. The report demonstrates how the proposals will result in a significant decrease in hardstanding areas (when compared with the existing situation) and outlines how surface water will be appropriately managed over the lifetime of the development and will ensure that the proposals will not exacerbate surface water flooding at the site or surrounding areas.

4. Flood Mitigation

Based on the previous section of this FRA, the site is generally considered to be at low risk of flooding from all sources. However, given that basement development is proposed, and that standing groundwater was reported in the BIA, mitigation should be considered. Additionally, given the slope of the site, and that surface water arising in the west is likely to flow through the site, the management of surface water will also need to be considered.

Groundwater Flooding - Basement Proposals

The BIA states:

The presence of groundwater should be considered in the design of any temporary and permanent retaining systems and the effects of hydrostatic uplift should be considered in the design of the basement. The basement will need to be fully tanked.

Surface Water Flooding

As previously noted, Base Energy has prepared a Surface Water and SuDS Assessment to support the planning application.

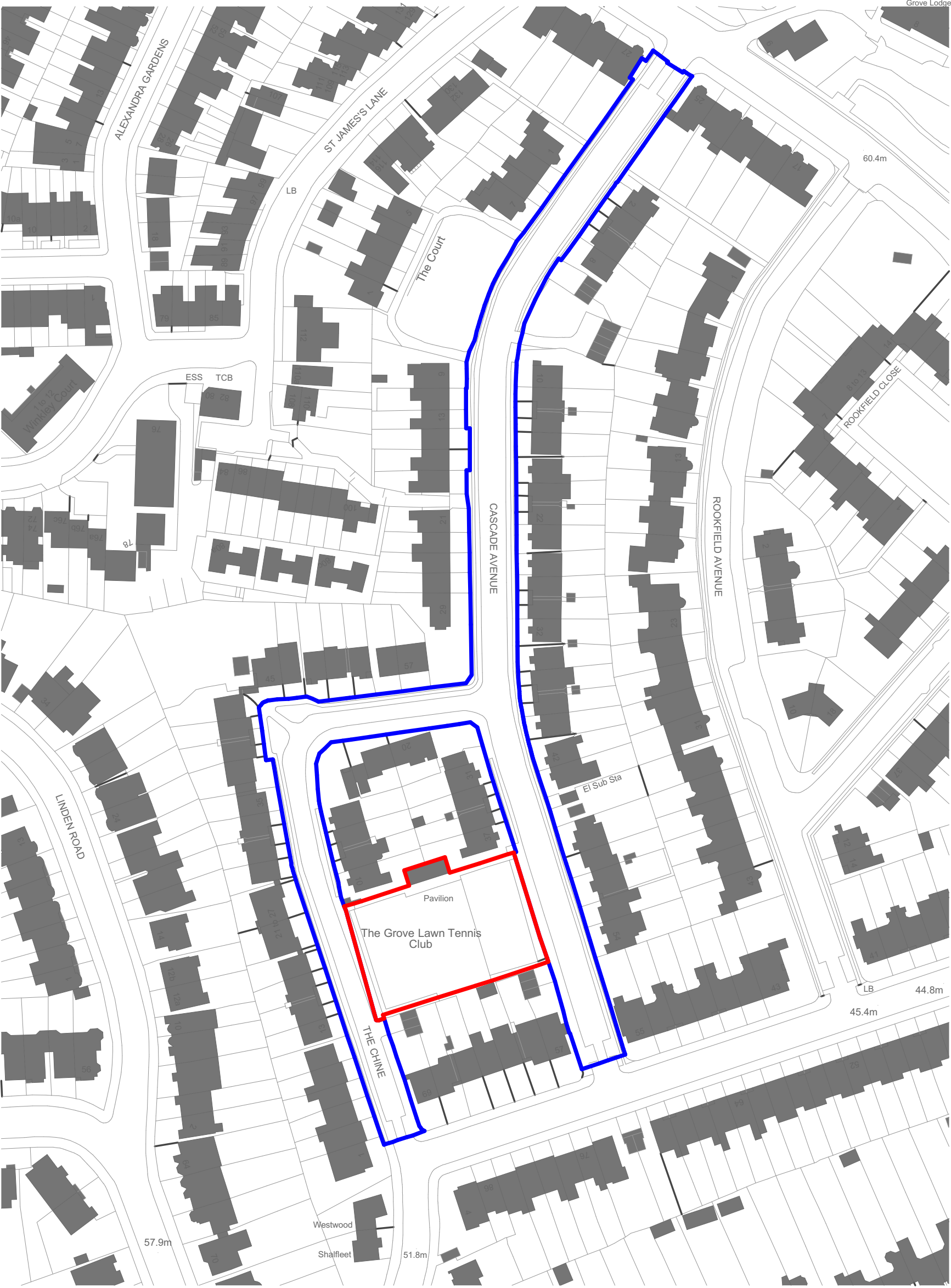
In summary, the report confirms:

- The proposals will result in a decrease in hardstanding areas of ~1ha and will therefore provide significant betterment in terms of surface water management when compared with the existing situation.
- Based on the London Plan Drainage Hierarchy, and a desktop study of underlying ground conditions, the following are considered to be the most feasible ways that surface water runoff from hardstanding areas (~0.1ha) should be managed.
 - Rainwater recycling (water butts)

-
- Landscaping to convey surface water away from the buildings
 - Type C (non-infiltration) permeable paving / attenuation storage with a controlled outlet into the public sewer (controlled outlet set at 2.7ls which is the exiting 1 in 100 year greenfield runoff rate from the site)

Appendices

Appendix A - Site Location Plan



Ordnance Survey, (c) Crown Copyright 2023. All rights reserved. Licence number 100022432

Collins Court

Cascade Avenue

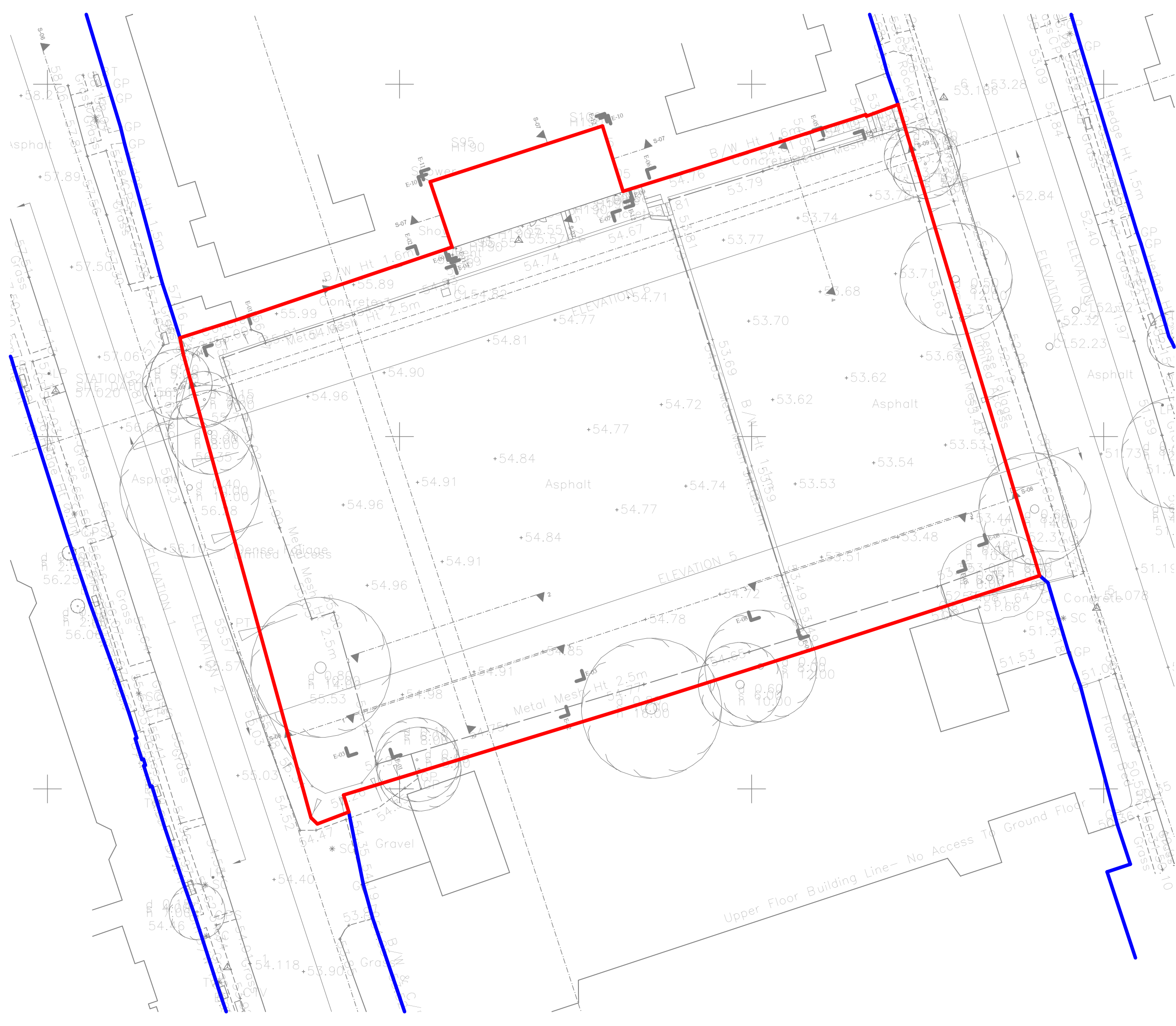
Location Plan 6299 - PL 01

1:1250 0 10 20 30 40 50 60 70 80 90 100

Jan 23

ADAM ARCHITECTURE

Appendix B - Existing Site Layout and Topographic Survey



Adjacent Properties and Boundaries are shown for illustrative purposes only and have not been surveyed unless otherwise stated.

All areas shown are approximate and should be verified before forming the basis of a decision.

Do not scale other than for Planning Application purposes.

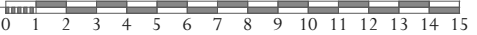
All dimensions must be checked by the contractor before commencing work on site.

No deviation from this drawing will be permitted without the prior written consent of the Architect.

The copyright of this drawing remains with the Architect and may not be reproduced in any form without prior written consent.

Ground Floor Slabs, Foundations, Sub-Structures, etc. All work below ground level is shown provisionally. Inspection of ground condition is essential prior to work commencing.

Reassessment is essential when the ground conditions are apparent, and redesign may be necessary in the light of soil conditions found. The responsibility for establishing the soil and sub-soil conditions rests with the contractor.



Rev	Date	Description	Initials
PROJECT		Collins Court Cascade Avenue	
TITLE:		Existing Site Plan	
SCALE:		1:250 @A3	
DATE:		January 2023	
DRAWING No:		6299 - PL 02	
DRAWN BY:		MB/SDR/CL	

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Appendix C - Proposed Site Layout Plans



Collins Court
Cascade Avenue

Proposed Context Site Plan 6299 - PL 03

1:200 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 Jan 23