

2. SITE LOCATION AND DESCRIPTION

2.1 Site Location

The site is located within the Whiteknights Campus of the University of Reading, RG6 6BZ, roughly 4km to the northwest of junction 11 on the M4 motorway. The approximate National Grid Reference for the centre point of the site is 474015E, 171850N. The proposed site will be positioned between the School of Psychology and Wilderness Road.

A site location plan is presented in Plate 1 below.

Plate 1. Site Location Plan



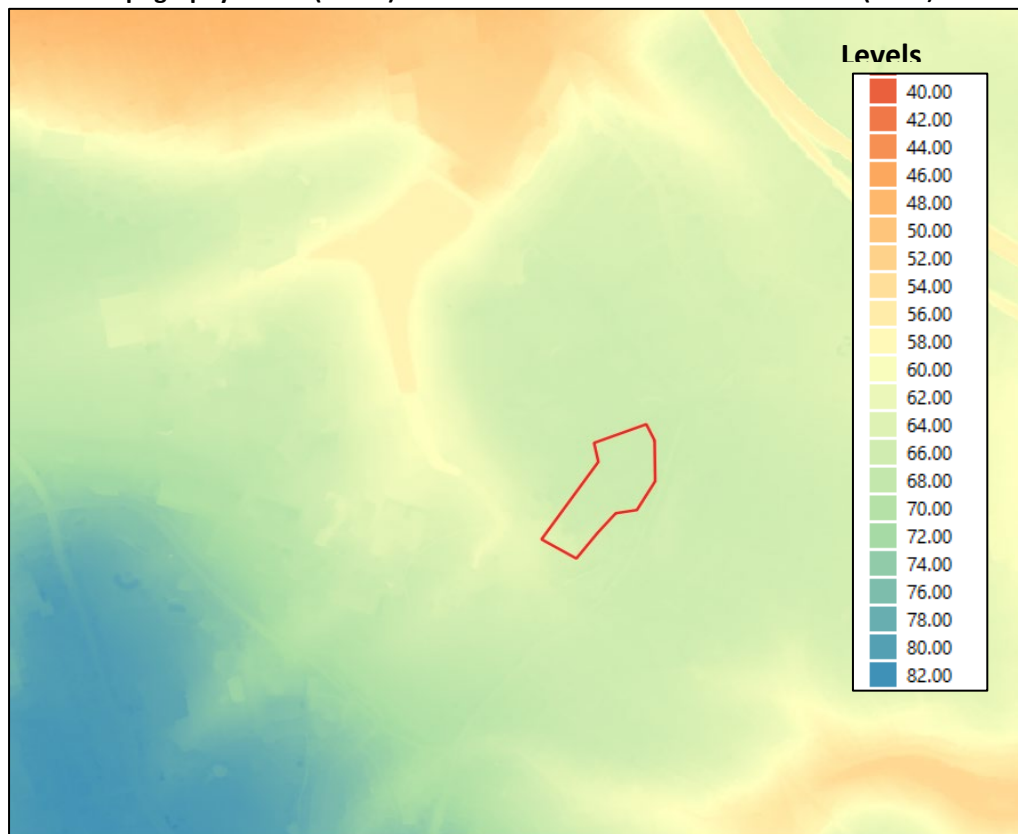
2.2 Site Description

The site is of irregular shape and occupies an estimated area of 1.8 hectares. The site currently comprises a collection of temporary prefabricated and masonry structures which are presently utilized as facilities for Reading University.

Directly to the east of the proposed site lies an area of woodland and ponds known as 'The Wilderness'. This natural area serves both recreational purposes and as a physical separation between the University property and nearby residential dwellings. The rest of the University Campus extends to the north and west of the proposed site. The surrounding land to the south and east primarily consists of suburban

residential properties, occasionally interspersed with schools and small businesses. The site is generally flat, although it has a gradual slope from the northeast (approximately +66.6mOD) to the south and southwest (approximately +66mOD). The topography of the site and the surrounding area is shown on Plate 2. This slope descends towards a lower-lying area which surrounds Whiteknights Lake and its associated streams. The closest of these streams is located roughly 170m southwest of the southern boundary of the site.

Plate 2. Topography of Site (LiDAR)⁵ levels in metres above Ordnance Datum (mOD)



2.3 Proposed Development

The new facility for ECMWF is designed to house a larger workforce ranging from 240 up to a maximum of 380 employees. According to preliminary assessments, around 1200m² of space will be needed to accommodate offices and conference rooms. Additionally, a parking area with approximately 290 spaces will be necessary to serve the office complex, conference centre, and data centre. The data centre itself will have the capacity for four data halls along with supporting facilities and equipment.

⁵ <https://environment.data.gov.uk/DefraDataDownload/?Mode=survey> (Accessed in March 2024)

3. DESK STUDY REVIEW

3.1 Site History

Historical maps obtained for the CGL desk study⁴ indicate that the office which dominates the site is mapped from 1948 onwards. The development of the wider campus is mapped from the 1970s onwards. It is also noted that a farm was present until 1948, prior to the existing build. A tank and depot in the southwest of the site is mapped in the 1980s.

3.2 Anticipated Ground Conditions

3.2.1 Anticipated Geology

With reference to the British Geological Survey (BGS) website⁶ and the 1:50,000 BGS bedrock and superficial map of Reading (sheet 268)⁷ obtained for the site, the site is shown to be directly underlain by superficial River Terrace Deposits of the Boyn Hill Gravel Member, underlain by the London Clay Formation, Lambeth Group, and Chalk Group in succession. A limited thickness of Made Ground is expected on site given the historical development of the area.

With reference to the BGS website⁶, these strata are typically described as:

- The Boyn Hill Gravel Member – poorly sorted sand and flint gravels, with possible lenses of silt, clay or peat. Anticipated to be approximately 4m in thickness in the Reading area.
- The London Clay Formation- mainly comprises bioturbated or poorly laminated, blue-grey or grey-brown, slightly calcareous, silty to very silty clay, clayey silt and sometimes silt, with some layers of sandy clay. It commonly contains thin courses of carbonate concretions ('cementstone nodules') and disseminated pyrite. Anticipated to be 20-25m in thickness.
- Lambeth Group - Vertically and laterally variable sequences mainly of clay, some silty or sandy, with some sands and gravels, minor limestones and lignites and occasional sandstone and conglomerate. Anticipated to be 20-25m in thickness.
- Chalk Group - Chalk, with or without flint and discrete limestone, marl (calcareous mudstone), sponge, calcarenite, phosphatic, hardground and fossil-rich beds. Anticipated to be encountered at approximately 45-50m below ground level.

⁶ British Geological Survey (BGS), www.bgs.ac.uk [Accessed March 2024]

⁷ [British Geological Survey \(BGS\) | large image viewer | IIPMooViewer 2.0](#) [Accessed March 2024]

3.2.2 Hydrogeology

The Environment Agency (EA)⁸ has produced an aquifer designation system consistent with the requirements of the Water Framework Directive. The designations have been set out for superficial and bedrock geologies and are based on the importance of aquifers for potable water supply and their role in supporting surface water bodies and wetland ecosystems.

The Boyn Hill Gravel Member and the Lambeth Group deposits are classified as *Secondary 'A' Aquifers*. According to the EA these can be described as: 'permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers.' The London Clay Formation is Unproductive Strata and the underlying Chalk Formation is a *Principal Aquifer*.

The site is not situated within a groundwater Source Protection Zone (SPZ), although a Zone 3 'total catchment' area is situated approximately 1km to the east of the site. There are no licensed groundwater/surface water abstractions or discharge consents to groundwater/surface water within 500m of the site.

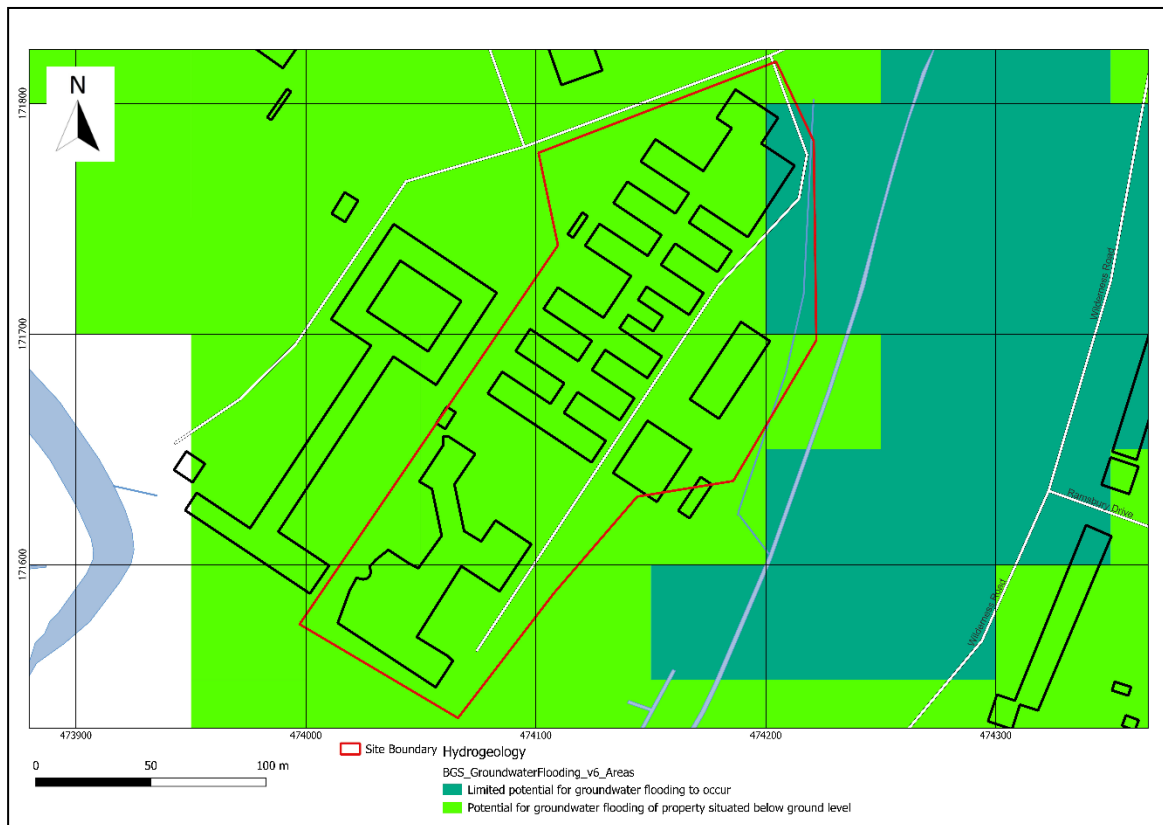
The nearest surface water bodies are the Whiteknights Lake and associated streams approximately 170m west of the site and an unnamed surface drain which runs through 'The Wilderness' area of woodland approximately 60m east of the site. The River Kennet is around 2.3km west and north of the site and the River Lodden is around 2.4km southeast of the site. Both join the River Thames to the north of the site.

The site is understood to be vulnerable to surface water flooding, and as such some surface water drainage manholes on site are used as soakaways. The site is considered to be at low risk from flooding relating to rivers or the sea⁹. A groundwater flood risk potential plan has been produced for the site, which indicates that the majority of the site is considered to be at medium risk from groundwater flooding (Plate 3). This risk will need to be considered during the design of the proposed development.

⁸ [Magic Map Application \(defra.gov.uk\)](https://magic.defra.gov.uk/) [Accessed March 2024].

⁹ [Your long term flood risk assessment - Check your long term flood risk - GOV.UK](https://gov.uk/guidance/your-long-term-flood-risk-assessment-check-your-long-term-flood-risk) [Accessed March 2024].

Plate 3. Groundwater Flood Risk Potential



3.2.3 Environmental Setting

The following designations and features have been identified for the site and surrounding area¹:

- Ecologically sensitive or ecologically important sites are not located within 500m of the site,
- Several listed buildings are located within 500m of the site:
 - The Grade II listed 'The Citadel', Reading/Region 6 War Room is located adjacent to the southeast boundary of the site, which is understood to contain asbestos within the building fabric³.
 - The Grade II listed South Lodge.
 - The Grade II listed North Lodge.
 - A Grade II listed landscape garden feature.
- There is one recorded pollution incident to controlled waters located 370m west of the site classified as Category 3 (Minor Incident).
- Historical or current licensed landfill sites are not located within 500m of the site.
- There is one current fuel station located 240m northeast of the site located off Wilderness Road/Wokingham Road.

- There are records of a single historical tank mapped in the 1980s located in the southeast of the site.
- The site is categorised as being at *Low Risk from all UXO (unexploded ordnance) types*.
- The site is in a low radon probability area (where <1% of homes are expected to be at or above the action level).
- There are several services and significant site facilities on site associated with the existing development:
 - HV and LV power cables associated with facility feeds and street lighting.
 - A substation in the northeast corner of the site.
 - A telecommunications cable associated with inter-university communications.
 - Surface water and foul water drainage systems with surface water soakaways as deep manholes.
 - CCTV.
 - Earthing infrastructure.
 - Some suspected 'unidentified' service routes.
 - Below ground fuel supply pipework is suspected adjacent to the War Room.
- The University of Reading Harry Pitt Building adjacent to the west of the site contains an MRI scanner with significant re-calibration tasks and costs associated with it being taken off-line/becoming operational. Its 'delicate' status makes it vulnerable to physical vibrations and electrical continuity throughout all stages of site development (demolition, preparation and clearance, and redevelopment).