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INTRODUCTION

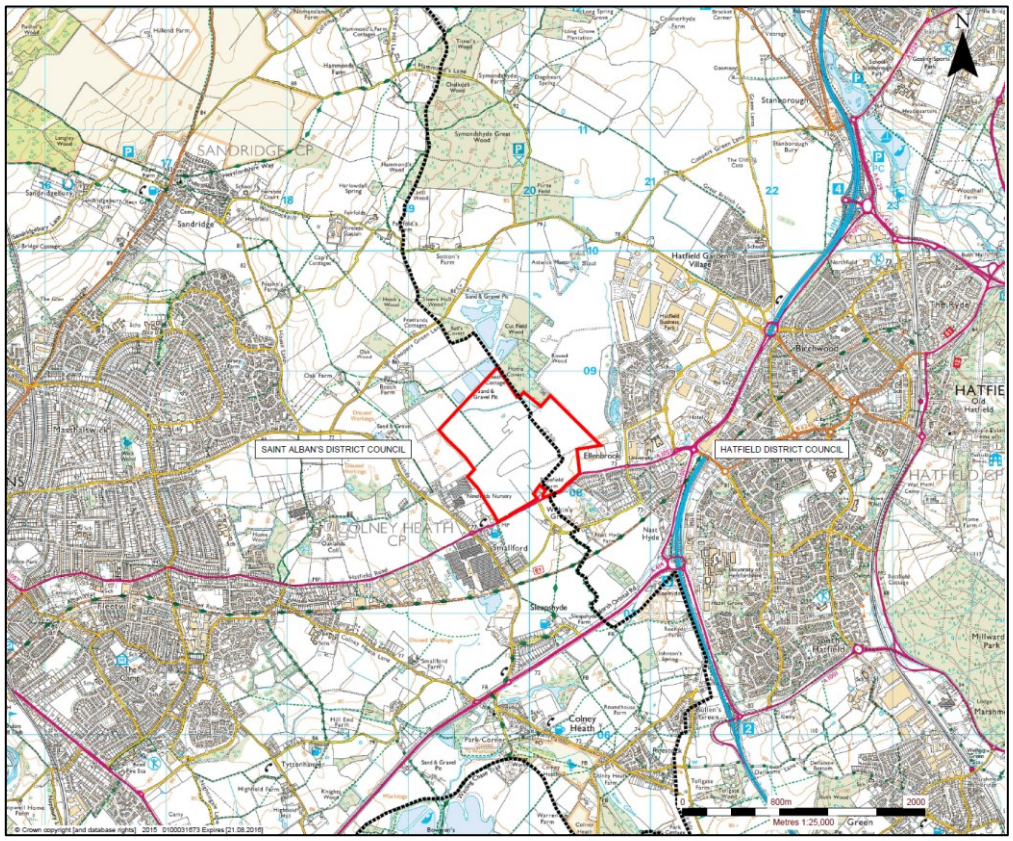
2.1 This chapter describes the existing physical and environmental characteristics of the application site and its surrounding environs. Allied to this, a number of the chapters within this volume provide descriptions of the application site in relation to particular environmental topics, providing *inter alia* 'baseline' surveys.

2.2 In this respect, Chapter 6 considers the water environment whilst Chapter 7 describes the local highway network. Chapter 8 describes the landscape character and topography of both the application site and its surroundings and Chapter 9 describes local air quality. The noise environment is described in Chapter 10, with ecological features within the application site described in Chapter 11. Finally features of cultural heritage interest are described in Chapter 12.

LOCATION

2.3 The application site is located on the north-western edge of Hatfield and to the east of St Albans on land associated with the former Hatfield Aerodrome. Figure 2-1 illustrates the location of the applications site, being an extract from Drawing HQ 2/1.

Figure 2-1
Site Location



2.4 It lies within an area enclosed by the A1057 (Hatfield Road/St Albans Road) to the south, Oaklands Lane to the west, Coopers Green Lane to the north and the western fringe of Hatfield to the east. For identification purposes the application site is centred on National Grid Reference (NGR) TL 199084.

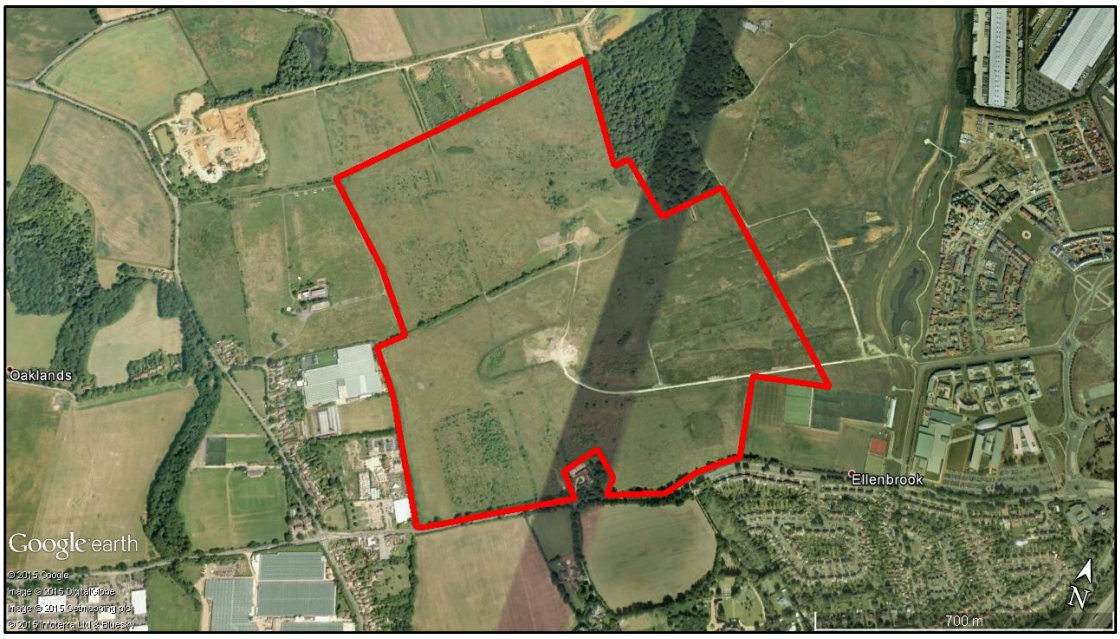
2.5 In terms of local governance, the application site is located in the county of Hertfordshire and straddles the boundary between the districts of St Albans and Welwyn Hatfield (the boundary between the two districts being shown by a solid black line on Figure 2-1 with St Albans lying to the west of the line).

SITE DESCRIPTION

Context

2.6 The application site covers an area of approximately 87.1ha and comprises the southern part of the former aerodrome. The application site comprises a broadly rectangular area of unoccupied land that is partly used as an informal public open space and partly for grazing. As such, the application site does not have any dominant land use at the current time following the closure of the aerodrome.

Figure 2-2
Site Context – Aerial Photograph



2.7 The application site is bounded by the A1057 (Hatfield Road) to the south, the boundary of which is characterised by a mature hedgerow. To the north lie CEMEX's Hatfield Quarry, and more specifically a set of silt lagoons. To the west the boundary is predominantly formed by a mature hedgerow, particularly in the vicinity of the garden centre and nursery (see below), with the northern section being more open in aspect. At the north eastern corner is Home Covert, a small area of broadleaf woodland. The eastern boundary

cuts across the former aerodrome to join up with the sports pitches located at the south eastern corner of the application site. The approximate extent of the application site is shown edged in red on Figure 2-2 and in more detail on Drawing HQ 2/2.

2.8 Within the application site a concrete roadway extends west into the centre of the application site from Albatross Way to the east (see Figure 2-3); a number of other tracks also cross the application site.

Figure 2-3
Photo of Site and Concrete Roadway

2.9 A number of earth bunds and banks are present on site from the earlier aerodrome as illustrated in Figure 2-4 overleaf. There are some remnant hedgerows that cross the site although the current field pattern is less defined than shown on more historic maps (such as 1888).

Figure 2-4
Panoramic Views of the application site

Topography

2.10 The ground surface falls gently from northwest to southeast across the application site as illustrated on Drawing HQ 2/3 and described below:

- ground elevations are at their lowest between 74mAOD and 76mAOD adjacent to the A1057 at the southern edge of the application site.
- levels rise to between 77mAOD and 78mAOD) in the northwest and northeast corners of the application site.
- ground elevations are approximately 75mAOD to 76mAOD adjacent to the southwest side of Home Covert.

Land Use

2.11 Following closure of the aerodrome, in common with the adjoining land to the north, the application site does not have any formal land use. A small part of the application site (on the eastern edge) is used for conservation cattle grazing (thus having an agricultural connotation), with areas within the western part of the application site forming hay meadow. The majority of the application site enjoys informal recreational uses through a network of linking permissive footpaths through the areas of open grassland and cattle grazing, suitable for walkers and cyclists, created by the landowner. Details of these paths and land uses use are provided on the owner's website[1].

2.12 A formal public footpath is routed in the vicinity of the western boundary of the application site.

Access

2.13 Access into the site can currently be gained off Albatross Way at NGR TL 207085. The southern boundary of the application site is formed by the A1057. As set out in Section 3 below, it is proposed that a new access would be constructed onto this road, to the west of Popefield Farm. The A1057 provides a link with the A1(M) at junction 3, together with the A414 and A1001.

Habitats

2.14 Based on the ecological assessment (Chapter 11 of this volume) the application site contains the following main habitat types:

- Unmanaged neutral grassland;
- Species-poor semi-improved mown grassland;
- Grazed neutral grassland;
- Neutral to acidic grassland;
- Early succession communities with calcareous element;
- Tall ruderal;
- Hedgerows;

[1] http://hatfieldbusinesspark.co.uk/things-do/ellenbrook-fields

- Scattered / dense scrub;
- Recent plantation;
- Waterbodies;
- Watercourse / wet ditches;
- Recently disturbed/bare ground; and
- Hard surfaces

Unmanaged Neutral Grassland

2.15 This is the dominant habitat type across large areas of the application site, presenting itself as a more or less homogenous expanse of tall graminoid dominated vegetation punctuated by scattered saplings and small bushes, which locally become closer-spaced and mark a transition to scrub. The community owes much of its outward homogeneity to the dominance of a few bulky grass species, of which false oat-grass *Arrehantherum elatius* is the most typical, although in some areas it is subordinate to cocksfoot *Dactylis glomerata* in cover. A broad range of other grass species make up the rest of the bulk in these outgrown swards, typically including timothy *Phleum pratense*, Yorkshire fog *Holcus lanatus,* couch *Elytrigia repens*, meadow foxtail *Alopecurus pratensis*, and occasionally, tall fescue *Festuca arundinacea*.

Species-poor semi-improved mown grassland

2.16 This habitat occurs in the western part of the application site, occupying one large irregularly shaped area that is maintained by periodic mowing.

Grazed neutral grassland

2.17 The eastern part of the application site encompasses part of a fenced-in enclosure that is subject to grazing by longhorn cattle. The sward here is close-cropped, although punctuated by scattered taller individuals of less palatable species (such as ragwort *Senecio jacobaea* and knapweed), and with scattered topiaried survivals of pre-existing scrub, indicating that these areas were much like any other neglected area on the airfield prior to the comparatively recent introduction of grazing.

Neutral to acidic grassland

2.18 This habitat occurs mainly in an area of rabbit-grazed short sward in the northern part of the site, with outlying representations occurring to the north and east of here at the boundaries of Home Covert. It is distinguished by the presence of certain species collectively indicative of a change in soil chemistry, and by the differing proportions of more broad-tolerance species such as common bent and sweet vernal grass, which become more prominent.

Neutral-calcareous grassland

2.19 In a very few areas of the site, recent episodes of disturbance appear to have exposed lenses of quite calcareous boulder clay, or disturbed soils have otherwise been admixed with crushed concrete or other calcium-rich artificial substrates.

Early succession communities

2.20 Grass-poor and herb-rich communities with a high proportion of bare ground occur in certain areas of the site that have been subject to disturbance in the relatively recent past.

Tall ruderal

2.21 This habitat is found on raised banks of loosely consolidated material, associated with two main areas of the site.

Hedgerows

2.22 The hedgerow resource on the site is relatively sparse given the extent of land area, reflecting rationalisation of Enclosure-age field boundaries and later 20th century removals to create the open area of the airfield.

Scattered / dense scrub

2.23 Scattered self-sown scrub is an ever-present feature over the majority of the grasslands on the site, the main exception being the regularly mown areas in the south-west. Generally it comprises shrubs and small trees up to around 3-4m in height occurring as isolated individuals, small groups or more concentrated patches which are beginning to occlude the remaining areas of grassland and influence their composition through light competition.

Recent Plantation

2.24 Several discrete areas of recent tree and shrub planting are present in the south-western part of the application site, at the edges of the open area of mown grassland.

Waterbodies

2.25 Contained within the application site are a restricted number of long-established ponds, and a similar number of more recently created waterbodies.

Watercourse / wet ditches

2.26 Crossing the northern part of the application site is a narrow ditch carrying a minor watercourse known as the Nast. South of Home Covert this watercourse enters a culvert which takes it beneath the main area of the

former airfield, to re-emerge at a point adjacent to the A1057 Hatfield Road. The remaining sections of open channel are for much of the year dry or only damp, although locally holding ponded lengths of static water in the spring.

Recently disturbed / bare ground

2.27 This habitat occurs in two distinct areas of the site – a patch of ground in the northern part of the site which appears to have been recently stripped and laid to hardcore, and a fenced-off mounded area, and adjacent spoil heaps, in the central part of the site comprised of crushed concrete and other materials.

Geology

Regional Geology – London Basin

2.28 The application site is located on the northern limb of the London Basin which forms an asymmetrical syncline with its axis trending southwest-northeast and plunging east. The boundary of the synclinal basin is formed by the Chilterns to the north and the North Downs to the south where the Chalk forms the predominant hard geology.

2.29 The Chalk is subdivided into Lower, Middle and Upper and is overlain in the centre of the London Basin by Paleogene rocks (Thanet Sands, Reading Beds), and the Eocene London Clay. The solid geology beneath the application site comprises the Lewes Nodular Chalk being the lowermost part of the Upper Chalk, with a characteristic hard band close to the Chalk sub crop. The solid geology is overlain by Quaternary superficial deposits comprising glacial gravels infilling valleys cut into the Lewes Nodular Chalk, with boulder clay and clay with flints across higher ground.

Local Geology – Vale of St Albans

2.30 The application site lies within the Vale of St Albans; a broad northeast to southwest orientated plain between higher land to the northwest and southeast. The higher land to the west comprises Upper Chalk solid geology at outcrop locally with a cover of superficial drift (Clay with Flints). In contrast the higher land to southeast comprises Upper Chalk overlain by the feathering margins of the Lower London Tertiaries and some superficial drift.

2.31 The Vale of St Albans corresponds with the route of a pre-glacial water course (Proto-Thames) that is understood to have flowed northeast into East Anglia[2]. Tertiary period strata are absent beneath the application site and the Vale of St Albans and the chalk solid geology is shown sub cropping[3] beneath a sequence of glacial deposits comprising boulder clay and gravels.

2.32 Within the Vale of St Albans a number of previous studies[4,5,6] have identified three broad superficial drift units comprising an upper and lower granular

[2] Catt J. Hertfordshire Geology and Landscape. 2010.
[3] British Geological Survey Sheet 239 Drift. Hertford. 1978.
[4] Symes D K, 1998: Sand & Gravel Assessment, Hatfield Aerodrome. On behalf of Hertfordshire County Council

formations (sands, gravels) separated by thin boulder clay. The following geological sequence is indicated to be present beneath the application site area.

Figure 2-5
Geological sequence within application site

Drift/Solid	Geological Unit
Superficial Drift	Upper Mineral Horizon (UMH)
	Boulder Clay (BC)
	Lower Mineral Horizon (LMH)
Solid Geology	Upper Chalk (Lewes Nodular Chalk)

2.33 The chalk surface contours illustrates that the application site sits within a trough or paleo-valley with the chalk surface rising up to the northwest and southeast and falling towards the northeast and the south. This feature also coincides with the watershed between the River Colne and the River Lea surface water catchments.

Hydrogeology

2.34 Groundwater in the Chalk and the LMH is regionally extensive, hydraulically connected vertically, with an east southeast flow direction beneath the application site.

2.35 The LMH and Chalk aquifer is both confined and unconfined by the overlying interburden in certain areas of the application site and during different times of the year. This is due to:

- seasonal fluctuation of piezometric water levels;
- non uniform interburden base (confining unit); and
- inconsistent pumping of the Chalk groundwater plus distance from the Hatfield boreholes.

2.36 Analysis indicates that, although the LMH/Chalk aquifer becomes confined during high water level periods beneath the southern application site, there are periods (between approximately July to December) when the water level drops and the aquifer becomes unconfined in places.

2.37 The application site is located within the outer source protection zone (SPZ2) of two public water supply ('PWS') wells (Hatfield and Colney Heath) located 1,500m southeast and 2,200m south southeast from the application site, respectively. The Hatfield boreholes are not used for public supply. The Colney Heath boreholes are utilised for potable water supply.

[5] Cook S J. The Hydrogeology of Bromate Contamination in the Hertfordshire Chalk: Incorporating Karst in Predictive Models. EngD Thesis UCL. April 2011.
[6] Little J A & Atkinson J H. Some Engineering Properties of Anglian Tills in the Vale of St Albans. QJEG. 21. Pp183-199. 1988.

2.38 The UMH aquifer is perched on the interburden, has been identified by SLR to be beneath the southern half of the application site and flows in a north to northeast direction. This flow direction coincides with the direction of dip of the interburden surface. The aquifer is seasonally confined and unconfined and its saturated thickness varies across the southern half of the application site between 3.0m and 0.3m.

Hydrology

2.39 The application site lies on or near what is considered to be the watershed between the River Colne catchment to the south-southwest and the River Lea to the northeast.

2.40 Two surface water streams are present on and in the vicinity of the application site:

1) Ellenbrook - which rises to the east northeast of the application site (within the remaining land associated with the former aerodrome) and flows south along the eastern perimeter of the former aerodrome site.
2) Nast - which flows onto site from the west-northwest and then flows southeast across the application site in a shallow open channel and then though a culvert beneath the former runway. It outfalls on the northern side of the A1057 before entering a culvert that passes beneath the road. Its route from the A1057 is not known but it is thought to either pass south beneath the adjacent housing estate or run east beneath the A1057 to the top of Ellenbrook Lane where a culvert outfalls into an open channel that flows south down the eastern side of Ellenbrook Lane and joins Ellenbrook as it outfalls from a culvert midway down the road.

2.41 To the west of the application site is the Butterwick Brook, which flows roughly north – south parallel with the Site's western boundary. This brook joins the Ellenbrook at Colney Heath which then joins the River Colne a further 400m downstream.

THE SURROUNDING AREA

Landscape

2.42 The broader area around the application site is typically flat. "Area 31 De Havilland Plain" within the Welwyn Hatfield Landscape Character Assessment (Hertfordshire Landscape Strategy) describes how it "*represents a subtle watershed between the Colne and the Lea. Levels vary by as little as 2-3m over 6km. The land rises locally to the west and south*". The altitude range is describes as "*Typically around the 80m contour but falling to 70m at Ellenbrook and rising to 100m within the undulating grounds of Oakland College on the edge of St Albans*."

2.43 The Ellen Brook runs in a north to south direction approximately 300m east of the proposed mineral extraction area. As noted above, the River Nast currently runs in a culvert across the application site.

2.44 There are blocks of woodland to the north of the application site, including Home Covert, Cut Field Wood and Ball's Covert and areas of ancient woodland within 5km of the application site (Symondshyde Great Wood, Home Wood, Oak Wood, Hazel Grove and Hooks Wood).

2.45 "*Area 31 De Havilland Plain*", describes how there is very limited woodland cover, few hedgerows (except to some of the roads) and few isolated trees. The vast majority of the land has been disturbed over the last century. Some of the former mineral workings support a mix of flooded gravel pits, scrub and marshland habitats.

Land Use

2.46 To the south of the application site the area is rural, interspersed with small settlements, areas of woodland and the highway network; clusters of housing can be found fronting the highway network, often being developed around road junctions. An area of industrial development lies to the south of the A1057, west of Station Road (in the vicinity of Smallford). To the southwest of the application site are a garden centre (operated by Notcutts), a public house, a petrol station, some large glass houses (nurseries) and a small residential area.

2.47 To the north, the area is similarly rural. Immediately to the north are a series of lagoons associated with an existing mineral working (Hatfield Quarry, CEMEX); the processing plant lies to the northwest of the application site, having its access off Oaklands Lane. Also immediately to the north is an area of woodland (Home Covert).

2.48 To the east of the application site is the urban area of Hatfield, with an industrial/distribution estate, residential development and the University of Hertfordshire campus present. Between the application site and Hatfield lie the remainder of the former aerodrome, surface water drainage infrastructure (an open drain and series of lagoons, known as Ellenbrook Linear Park) and some sports pitches and associated pavilion.

2.49 Finally, to the east the rural aspect gives way to the urban area of St Albans.

Sensitive Receptors

Land Use Designations

2.50 Based on the MAGIC website, within 2000m of the site boundary there are:

- Five areas of ancient woodland:
  - Symondshyde Great Wood
  - Home Wood
  - Oak Wood
  - Hazel Grove
  - Hooks Wood
- One Local Nature Reserve
  - Colney Heath

2.51 More significantly, there are no:

- Areas of Outstanding Natural Beauty
- National Nature Reserves
- Sites of Special Scientific Interest
- Special Protection Areas
- Special Areas of Conservation
- Ramsar Sites
- Scheduled Monuments
- Registered Battlefields
- Registered Parks and Gardens

2.52 There are several listed buildings in the vicinity of the application site. The closest (being a cluster of three) are located at Popefield Farm on the southern boundary:

- Popefield Farmhouse;
- Granary and adjoining outbuilding;
- Barn range.

2.53 Two more are located close to the southwestern corner of the application site:

- Milepost approximately 70 metres east north east of the Three Horseshoes Public House;
- Three Horseshoes Public House

2.54 Seven more listed buildings are located along Wilkins Green Lane.

2.55 Based on information provided by Herts Environmental Records Centre (refer to Chapter 11 below) there are 23 Local Wildlife sites within 2km of the boundary of the application site. The closest is Home Covert, which lies adjacent to the application site; twelve of the sites are over 1km from the site boundary with the remainder located between 510m and 900m from the site boundary.

Residential/Human Receptors

2.56 The nearest property to the application site is Popefield Farm, which fronts the northern side of the A1057. Further to the south is Wilkinsgreen Farm, beyond which is a small cluster of properties.

2.57 To the southwest are a number of properties on the south side of Hatfield Road and east of Station Road, with a further small row of properties located off Oaklands Lane to the west of the application site. A recent housing development has been established off Oaklands Lane (Pasture View) to the west of the application site, and planning permission has been granted on appeal for a small residential development on land to the north of the garden centre.

2.58 A small residential area lies to the southeast of the application site centred on Poplars Close, Poplar Avenue and Bramble Road (known as Ellenbrook). Other residential properties front the northern side of Wilkins Green Lane to the south of this area. A larger residential area can be found on the western edge of Hatfield, with the nearest properties being on Nimrod Drive, Flamingo Close and Walker Grove (all off Cunningham Avenue). Chapters 9 and 10 of this volume provide further details of the properties used in the assessment of dust and noise respectively.

SITE HISTORY

2.59 Based on a review of historical maps from the period 1937 to 2011 the salient features are mentioned in Table 2-1 below.

Table 2-1
Historical Map Features Summary

Year	Site	Wider Area
1937	• The application site comprises fields and pasture. • Home Covert is as today with a small cottage, a pond and paths crossing through the woodland. • The Nast follows its current open water and culverted route. • The Ellenbrook is not recorded. • A Race Track occupies an area northwest of Popefield Farm	• East: Fields and pasture. • West: Fields and pasture. • North: Astwick Manor, fields and woodland. • South: Some housing, nursery/greenhouses and fields.
1960	• The application site is completely within the former Hatfield Airfield with the runway extending northeast to southwest across the centre of the application site, with part of the taxiway skirting the southern side of the development area. • Home Covert is an area of woodland on the northwestern boundary that appears to occupy the same area as today. • Remaining areas appear to be open and undeveloped. • The Nast is shown flowing onto site at the northwestern boundary before ending on the northern side of the runway where it enters a culvert (as today) • The Ellenbrook is not recorded.	• East: Airfield and aircraft works to the northeast • West: Woodland and fields • North: Astwick Manor, fields and woodland. • South: Housing, nursery/greenhouses and fields
1975	• As 1960	• As 1960
1990	• As 1975	• As 1975
1999	• As 1960 • The outline of a small rectangular industrial area north of Home Covert is suspected to be related to aerodrome operations in the 1990s. Further	• The aerodrome works buildings have been removed and new commercial buildings are cover about 30% of the former aerodrome works.

Year	Site	Wider Area
	examinations of historical aerial photographs of this feature are intriguing but not entirely clear. • A small area southwest of Home Covert is an aircraft parking stand with a fire training area. Further detail is shown on the historical aerial photographs • The Ellenbrook is not present	
2006	• The runway has been removed. • The taxiway remains. • The rectangular area northeast of Home Covert remains. • Ellenbrook is present in its current form.	• The runway has been removed and has been largely replaced with commercial warehouse-like buildings and some residential properties. • Aircraft works buildings southeast of the aerodrome taxi-way have been demolished and are in the process of being replaced with new commercial buildings. • Hatfield University buildings/campus is in place. • Ellenbrook balancing lagoons are in place adjacent to the application site.
2011	• The runway has been removed. • The taxiway remains. • The rectangular area northeast of Home Covert remains. • The Nast remains culverted across the application site. • The Ellenbrook is in place.	• Northeast: The aerodrome buildings have been redeveloped with additional commercial buildings. • Residential property has been built east of Ellenbrook. • Hatfield University is built to the south of the residential buildings. • Northwest: Mineral extraction and lagoons are present along the northwestern site boundary.