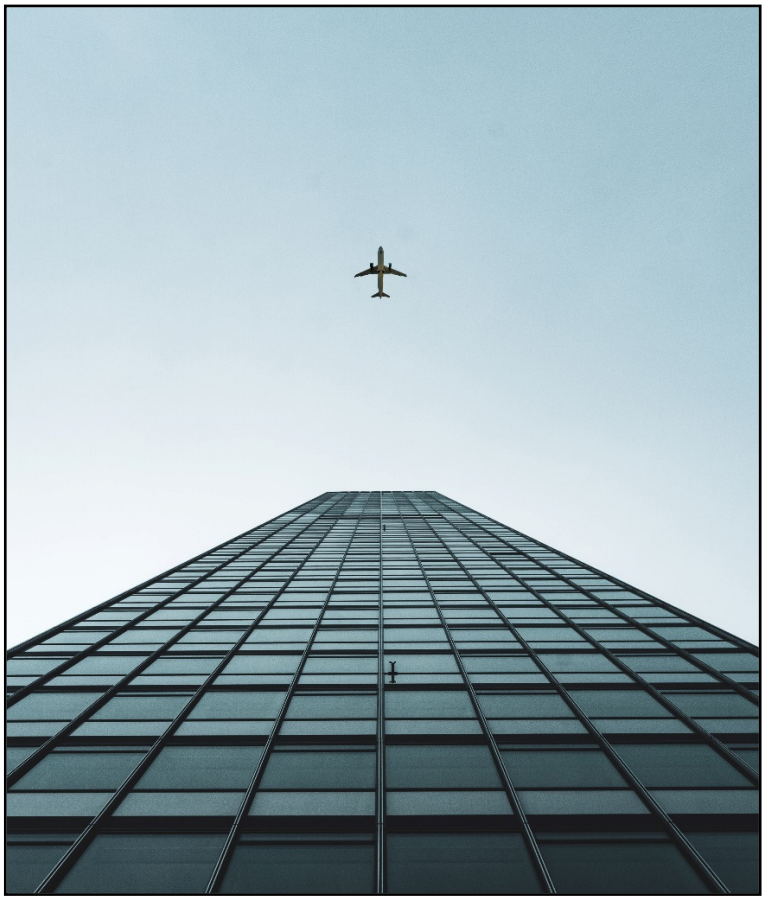
DNA (Uxbridge) Ltd

Proposed mixed-use development at High Street Uxbridge

Aviation safeguarding assessment



Consultant's Report

April 2024

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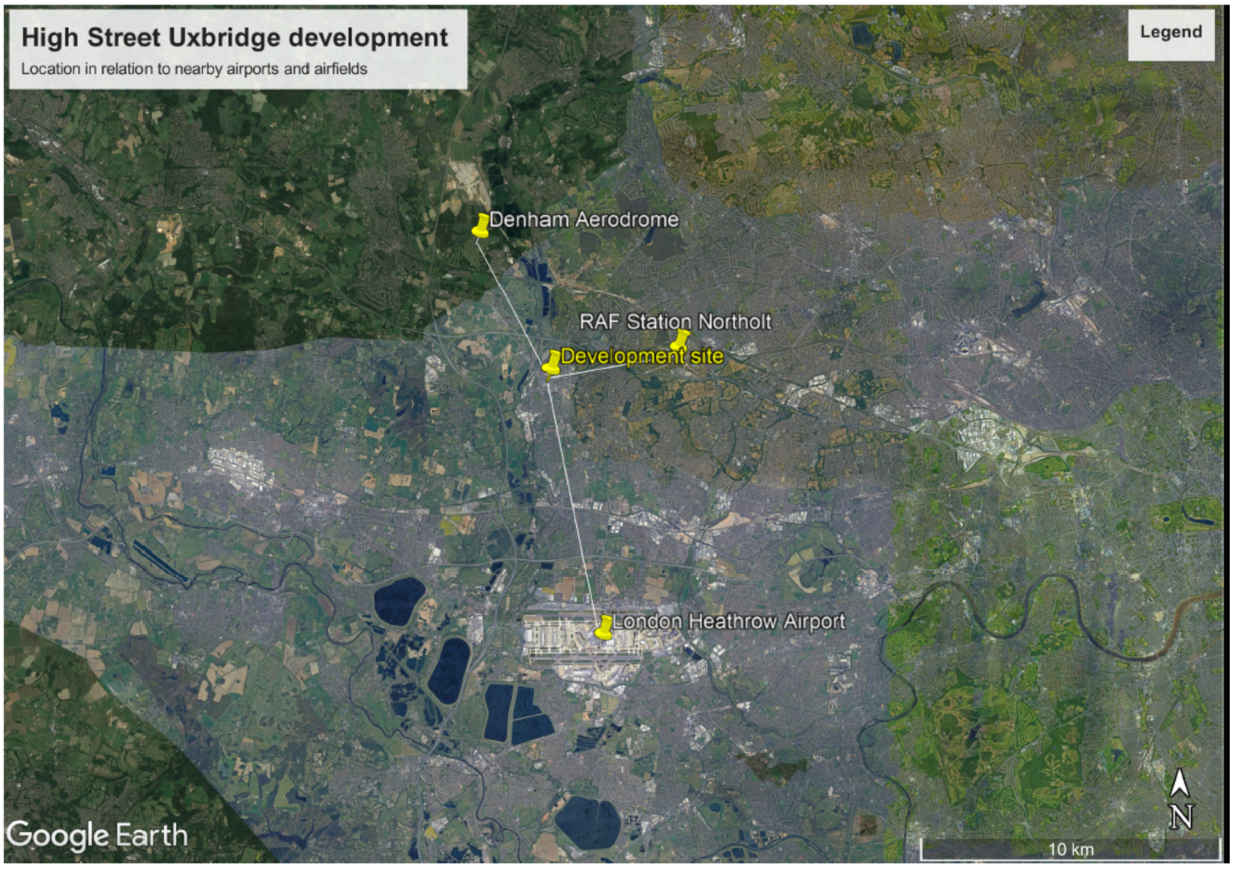
1. Introduction

1.1 Background to the study

This report has been prepared by Alan Stratford and Associates Ltd on behalf of DNA (Uxbridge) Ltd, in relation to a planning application for a proposed mixed-use development at a site bordering High Street, Belmont Road and Bakers Road in Uxbridge in the London Borough of Hillingdon. It provides a top-level review of any possible operational safety implications for aircraft that might be flying over or in close proximity to the development.

The development comprises a multi-level building with a maximum of 10 storeys and a maximum height of 80.150m AOD. There are other multi-storey buildings (eg Harmen House and Colham House) of a greater or similar height in High Street and Bakers Road in Uxbridge. The development site is situated some 8.6 km to the north of London Heathrow Airport, 4.4 km to the west of RAF Northolt and 5.1 km to the SSE of Denham Aerodrome in Buckinghamshire.

Figure 1.1 Proposed development site – High Street Uxbridge
Location in relation to nearby airports and airfields



1.2 Layout of the report

Following this introduction, the second section of this report provides an overview of the aviation safeguarding issues and consultation procedures that need to be taken into account in a planning application for a development near an airport or airfield. Section 3 examines the specific safeguarding constraints at London Heathrow Airport, RAF Northolt and Denham Aerodrome and how these might be affected by the proposed development or during its construction, whilst Section 4 provides our conclusions on any possible adverse aviation impacts. It is likely that, as statutory consultees, the airfield operators, the Civil Aviation Authority (CAA), National Air Traffic Services (NATS) and possibly the Ministry of Defence (MoD) in relation to RAF Northolt will be formally consulted by the local planning authority (London Borough of Hillingdon) regarding these possible impacts as part of the planning process. This process can be initiated by or on behalf of a developer to minimise any delays during the planning application.

2. Aviation safeguarding policy

Formal consideration within the planning process must be given to any detrimental impacts to aviation which might arise as a result of a proposed new development. All major commercial airports are officially safeguarded under DfT Circular 01/2003. This requires local planning authorities to consult with airport operators in relation to certain possible operational impacts that might arise within certain distances of the airport, as defined by an official safeguarding map. Other airports and airfields may wish to lodge an 'unofficial' safeguarding map with local authorities on a similar basis although ultimately any planning consent must take account of any adverse impacts on aviation irrespective of whether a safeguarding map has been produced or not.

Aerodrome safeguarding covers several aspects. Its purpose is to protect:

a) the airspace around an aerodrome to ensure no buildings or structures may cause danger to aircraft either in the air or on the ground. This is achieved through both the 'Obstacle Clearance Surfaces' (OCS) and the 'Instrument Flight Procedures' (IFPs).

b) the integrity of radar and other electronic aids to navigation by preventing reflections and diffractions of the radio signals.

c) aeronautical lighting, such as approach and runway lighting, by ensuring that they are not obscured by any proposed development and that any proposed lighting, either temporary or permanent, could not be confused for aeronautical ground lighting.

d) the aerodrome from any increased wildlife strike risk. In particular bird strikes, which pose a serious threat to flight safety.

e) aerodrome operations from interference by any construction processes through the production of dust/smoke, temporary lighting or construction equipment impacting on radar and other navigational aids.

f) aircraft from the risk of collision with obstacles through appropriate lighting.

g) aircraft from the risk of building induced turbulence.

h) aircraft from the risk from glint and glare, e.g. solar panels.

The protection of the Obstacle Clearance Surfaces (OCS) is a specific requirement of CAA licensed airfields and similar broadly similar criteria would normally also be applied to military airfields including RAF Northolt although the details of these are not published. The dimensions of the OCS are set out in CAP 168 *'Licensing of Aerodromes'* in accordance with ICAO Annex 14 (Aerodromes) to the Convention on International Civil Aviation. The obstacle clearance requirements for the guidance path provided for specified Instrument Flight Procedures are determined by NATS (or other qualified airspace design specialist) but are not published.

Whilst there are no statutory requirements, unlicensed airports and airfields are expected to follow guidance issued by the CAA under CAP 793 '*Safe Operating Practices at Unlicensed Aerodromes'.* In assessing any current or future potential obstacles or other obstructions close to an airport and airfield, the pilot needs to consider the clearance height over the obstacle based on the performance data available for the type of aircraft to be used. This includes the climb and approach gradient taking account of possible variations in the meteorological conditions and allowing for an appropriate safety margin.

The protection of the Obstacle Clearance Surfaces also applies in relation to any cranes used on a temporary basis during construction of a development. In certain cases, a dispensation for a minor or temporary breach of the OCS may be acceptable to the airport operator, provided this is approved by the Civil Aviation Authority. In addition, prior notification must be given to the CAA for the use of all cranes over 10m AGL during the construction phase.

Further planning consideration should be given to any possible adverse impacts to en-route air traffic and to any possible distortions to radar or other navaid signals from the proposed building development. NATS should be consulted by the relevant planning authority in relation to these possible impacts.

3. Key operational considerations

3.1 Obstacle Clearance Surfaces (OCS)

3.1.1 London Heathrow Airport

As an officially safeguarded airport, London Heathrow must comply with the regulations set out in CAP 168 '*Licensing of Aerodromes*'. This includes protection of its Obstacle Clearance Surfaces as defined in the regulations, which should not be breached by any building or other obstruction.

The relevant surfaces for each runway are:

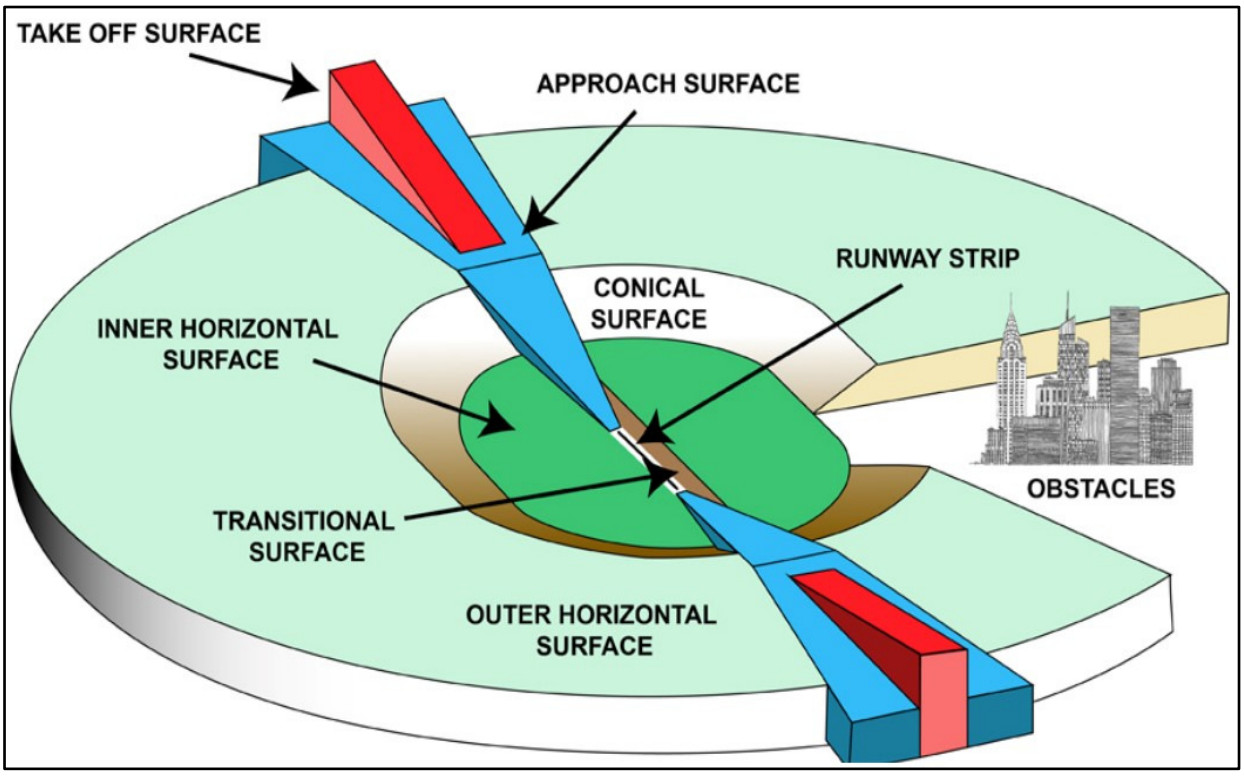
- The take-off climb surface

- The approach surface
- The transitional surface
- The inner horizontal surface
- The conical surface
- The outer horizontal surface

The dimensions of these surfaces are dependent on the code number of the runway (which is defined by its length and width) and as to whether the runway is used only for visual operations or additionally for precision approaches.

These surfaces, which are defined in ICAO and CAP 168 regulations are shown diagrammatically in Figure 3.1.

Figure 3.1: ICAO Aerodrome Obstacle Clearance Surfaces



Given the location of London Heathrow in relation to the development, the only relevant surface that might be breached is the Inner Horizontal Surface (IHS) which is contained in a horizontal plane located 45 m above the AOD elevation of the lowest runway threshold existing or proposed for the aerodrome At London Heathrow, where the runways are 1,800m or more in length, the limits of the Inner Horizontal Surface are established circles of a radius 4,000m centred on the strip ends of the runway. These circles are joined by common tangents parallel to the runway centreline to form a racetrack pattern. The boundary of this pattern is the boundary of the inner horizontal surface. The Outer Horizontal Surface (OHS) is established on a similar basis with circles of a radius of 15,000m but at a higher level of 150m AOD.

The centrepoint of London Heathrow Airport is approx 8,600m from the proposed development so this will be within the boundary of the OHS. However, with a maximum elevation of some 80.150m AOD, the building would be within the maximum permitted height of 150m above the AOD elevation of the lowest runway threshold We would expect Heathrow Airport Limited (HAL) to confirm this during the statutory consultation phase.

We note that there are no standard Instrument Departures or Arrivals routings into London Heathrow flying over the proposed development site location. If aircraft are vectored on approach over the development site location within the ATC Surveillance Minimum Altitude Area, this would be at a minimum altitude of 1,800 ft (549m) which provides a substantial safety margin over the proposed multi-storey building.

3.1.2 RAF Northolt

Although Northolt Airport handles both military and civilian flights, it is managed and operated by the Royal Air Force. The safeguarding requirements at military airfields are set out in MoD Circular RA 3500 – *Aerodrome Design and Safeguarding.* These generally follow those of ICAO Annex 14 and CAP 168 although there may be specific operational requirements eg whether there is any low level flying. Where a significant development is proposed near an RAF airfield, it is the responsibility of the developer and/or the local planning authority to contact the Ministry of Defence (MoD) Safeguarding Unit[1] to ensure that there are no operational adverse impacts.

RAF Northolt is some 4,400m from the proposed development and would be outside its obstacle clearance limits under these regulations and any further obstacle clearances requirements for any instrument flight procedures for military or civil aircraft using the airport and we would expect this to be confirmed by the MoD.

3.1.3 Denham Aerodrome and other general aviation activities

A CAA licensed general aviation airfield, Denham Aerodrome, is located 5,100m from the proposed development site. We confirm that the proposed building would be within the airfield's obstacle clearance limits as defined under CAP 168. We note that there is a defined helicopter routing (H10) which passes close to the development site although all pilots are expected to maintain a distance of 500 feet from any building or structure. Other general aviation aircraft not using Denham or Northolt airfields would not normally be expected be within the vicinity of the development site as this is regarded as a congested area but, in any event, a 500 feet separation from all buildings and structures must be maintained.

3.2 Integrity of radar and other navaids

In certain circumstances, buildings can distort the radar signals of both primary and secondary (SSR) radar systems or those of the Instrument Landing System (ILS) localizer and glide slope or other navaids. The development site is outside the sensitive area for ILS signal distortion at both Heathrow Airport and RAF Northolt.

[1] Email address – www.air-11GpBM-SafeguardingSO2@mod.gov.uk

Any distortion to en-route or airport radar and to other navaids is highly unlikely particularly in view of other similar tall buildings in the Uxbridge area, although this should be confirmed with Heathrow Airport, the MoD and NATS.

3.3 Other flight safety and operational issues

As indicated in Section 2 above, airports need to be safeguarded against the risk of wildlife strikes to aircraft, particularly from birds. This risk may be increased if a development attracts wildlife eg through a water feature. Our general view is that the development would be significantly distant from the aircraft flight paths for this to be a significant risk. We note that the proposed building does have a flat roof which can attract roosting or nesting birds and we would recommend that the architectural design considers how this might be minimised eg by the removal of ledges and other nesting positions, the use of special materials and, if necessary, the installation of bid deterrent devices. Other possible adverse impacts to aviation involve wind turbulence around the buildings or glare to pilots eg from solar panels or glazing. However, given that aircraft are unlikely to be flying near the proposed development or would only do so at a significant height, these adverse impacts would not apply. There would be no requirement for the proposed building to be lit at night as a warning to aviation as this is only legally mandatory for structures exceeding a height of 150 metres AOD.

3.4 Crane usage

Dependent on their height and location, aerodromes and the Civil Aviation Authority need to give consent for the use of cranes during building construction. The relevant guidance and procedures for this are set out in Civil Aviation Paper (CAP) 1096 - *'Guidance to crane users on the crane notification process and obstacle lighting and marking'* and CAP 168 *'Licensing of Aerodromes'*.

Under this guidance, the CAA has to be notified of the use of all cranes above a height of 10m AGL. The CAA will in turn process and share these notifications with relevant parties (eg nearby airports) which require this information. Assuming that consent is given for their use, the cranes would require appropriate marking and lighting.

The CAA should to be notified at least eight weeks in advance of the use of cranes during the construction of the proposed development. Whilst the crane height will exceed that of the proposed building, it is unlikely to breach any obstacle clearance limits (eg the Outer Horizontal Surface) at either Heathrow or Northolt Airports so we envisage that there would be no objection to their use.

4. Conclusions

Our key conclusions from this assessment can be summarized as follows:

- Three airports and airfields are within 10 km of the proposed Court Lane development – London Heathrow, Northolt and Denham Airports.

- We confirm that the proposed building, which has a maximum elevation of 80.150m would not breach the obstacle clearance surfaces (OCS) specified under the CAA licences for these airports
- Given the expected height of aircraft using any instrument flight procedures near the development, we would not anticipate that the building would represent an obstacle within the flight path signal guidance provided.
- Given the presence of similar tall buildings in the Uxbridge area, it is unlikely that the proposed development would give rise to any signal distortion to radar and other navaids.
- There would be no adverse impacts from building turbulence or glare from the use of solar panels or glazing given the nature of flight paths and the likely height of any aircraft that might be in the vicinity of the proposed development.
- The CAA would need to be notified about the use of cranes during building construction and these would need suitable marking and lighting. London Heathrow Airport and the CAA would need to give consent for a temporary breach of the OCS as the crane(s) are likely to exceed the lower level of the IHS, although we see no reason why this consent should not be given.

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