



South
Cambridgeshire
District Council



Planning Committee Date	22 June 2022
Report to	Joint Development Control Committee
Lead Officer	Joint Director of Planning and Economic Development
Reference	21/03224/FUL
Site	Cambridge Airport, Newmarket Road, Cambridge
Ward / Parish	Abbey
Proposal	Dismantling and removal of two existing radars and construction of a new radar and other associated works.
Applicant	Marshall Group Properties Ltd.
Presenting Officer	Philippa Kelly, Strategic Sites Delivery Manager
Reason Reported to Committee	This is an application for major development within the JDCC administrative area.
Member Site Visit Date	13 June 2022
Key Issues	<ul style="list-style-type: none">• Principle of development.• Design and layout.• Impact on site and surroundings, (including landscape and visual impact assessment and impact on landscape character).• Other environmental considerations (including noise and shadow flicker).• Impact on residential amenity.
Recommendation	APPROVE full planning permission subject to conditions.

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1.0 **Executive Summary**

- 1.1 The proposal is for a new primary surveillance radar on land at Cambridge Airport (the H17 Radar). It includes the removal of two existing radar structures - the AR15 Radar (located on land to the south of the existing main runway) and the H16 Radar (located to the west of Hangar 16 within the northern part of the Airport).
- 1.2 The new radar is required because the existing AR15 Radar is reaching the end of its operational life. The Applicant is also obligated to provide and bring into use an alternative radar solution to the AR15 Radar for safety and operational reasons, under the terms of the Section 106 Agreement for the Land North of Cherry Hinton (LNCH) outline planning permissions.
- 1.3 The existing H16 Radar was constructed under the Airport's permitted development rights and began to operate in the autumn of 2020. It was intended that this radar would replace the historic AR15 Radar. Since this time, complaints have been received from residents living in the vicinity of the H16 Radar. The complaints relate primarily to operational noise and shadow flicker. Noise mitigation measures undertaken by the Applicant resulted in measured noise improvements, although noise complaints have continued. The Applicant subsequently committed to re-locating the H16 Radar to an alternative, less intrusive location which will continue to provide an acceptable level of operational and safety performance. In the interim, the AR15 Radar continues to serve the Airport.
- 1.4 The risk to the Airport of being without an operational radar facility due to failure is high. This would have potentially serious implications and risks for the safety of aircraft operations and would severely constrain flying in certain weather conditions.
- 1.5 The application proposals are supported by an Environmental Statement (ES) under the Environmental Impact Assessment (EIA) Regulations 2017. Officers are satisfied that that the ES (including the Alternative Site Assessment (ASA)) and other additional information provided complies with the 2017 EIA Regulations, and that sufficient detailed environmental information has been provided by the Applicant enabling officers to assess the environmental impacts of the development proposals, in accordance with relevant legislative requirements and best practice guidelines.
- 1.6 This is a finely balanced decision. The proposed H17 Radar would generate significant adverse landscape and visual effects, including on the recreational users of Coldham's Common and the Common's landscape character. However, officers recognise that the development would also bring about substantial safety benefits, enabling the existing business operations at the Airport to continue until the planned closure of the Airport. It would also facilitate wider economic and social benefits by enabling the development of the Land North of Cherry Hinton (LNCH)

development site. On this basis, the benefits of the proposals are considered to weigh in favour of supporting the scheme.

1.7 A glossary of terms is provided as **Appendix A** to this report.

1.8 Officers recommend that the JDCC **Grant Planning Permission for the Application 21/03224/FUL**, subject to the conditions and informatives set out in **Appendix C** to this report, with authority delegated to officers to carry through minor amendments to those conditions and informatives (and include others considered appropriate and necessary) prior to the issuing of the planning permission.

2.0 **Site Description and Context**

2.1 The planning application relates to three locations within Cambridge Airport - the new site of the proposed radar (H17) and the sites where existing radar installations/structures (AR15 and H16) will be removed.

2.2 Cambridge City Airport ('the Airport') is located on the eastern fringe of the City of Cambridge, accessed off Newmarket Road (A1303) which connects to the A14 about 2km to the east of the Airport. To the north, west and south-west of the Airport are the outer fringes of Cambridge City, to the south is Chery Hinton and to the east is the village of Teversham.

2.3 The Airport occupies an area of approximately 174 hectares, and comprises the existing airfield, with associated offices, hangars and car parking. The main tenant is Marshall Aerospace and Defence Group (MADG), which specialises in the conversion, modification, maintenance and support of aircraft and defence solutions. The aircraft maintenance, repair and overhaul (MRO) work includes the planned and unplanned maintenance of the Royal Air Force's UK fleet of Hercules aircraft, as well as military aircraft of other nation states.

2.4 The Airport also supports various types of aircraft operations including general aviation, business aviation and the East Anglian Air Ambulance, as well as occasional commercial, and charter passenger flights. It is also home to a number of flying clubs and flying schools.

2.5 The existing AR15 Radar is located to the south of the runway, on existing grassland which is within the Airport's operational boundary.

2.6 On the northern side of the Airport are buildings associated with the aerospace operations, including hangar buildings and administrative offices and the Grade II listed control and office building which fronts Newmarket Road.

2.7 The H16 Radar is located to the west of Hangar 16 within the northern part of the Airport. This radar was constructed in Autumn 2020 under permitted development rights. This part of the application site comprises

an area of apron/hardstanding, which is surrounded by a security fence. Immediately north of the H16 Radar are residential properties on Sunnyside, The Westering and Mansfield Way.

- 2.8 On the north-west side of the Airport and to the west of Hangar 17, and north of the Ground Run Enclosure (GRE) aircraft testing facility, is an area of hard standing. This is the proposed location of the new H17 radar. This part of the application site forms part of a larger area of apron used for aircraft parking.
- 2.9 Immediately to the north of the site of the proposed H17 Radar is Barnwell Drive, beyond which is an industrial and commercial area including a Mercedes car dealership, Barnwell Business Park and The Quorum office complex. The majority of the Airport's hangars and buildings lie to the north-east of the proposed H17 Radar. To the east and south lies the expansive open grassland of the airfield including its main runway.
- 2.10 Beyond the commercial areas to the north of Barnwell Drive are residential areas, the nearest being Barnes Close, Sunnyside, Mansfield Way and The Westering and Peverel Road.
- 2.11 The distances to the closest building facades of properties near to the site of the proposed H17 Radar are as follows (Note - distances taken from Google Earth and have a margin of error of 5m).
- Barnes Close - 205 metres
 - Sunnyside - 230 metres
 - Mansfield Way - 250 metres
 - The Westering - 285 metres
 - Peverel Road - 240 metres
- 2.12 To the southeast of the Airport is the site known as Land North of Cherry Hinton (LNCH). This is a cross boundary site (the City Council and South Cambridgeshire District Council) which has outline planning permission for up to 1,200 dwellings and other facilities. The consented development of Marleigh (Land North of Newmarket Road/Wing) is located to the north, beyond the A1303, which has permission for 1,300 homes.
- 2.13 The Cambridge Green Belt wraps around the eastern edge of the Airport and extends across the airfield to create a green corridor encompassing Coldhams Common. The Common is situated approximately 170m west of the site of the proposed H17 Radar. It is registered Common Land, open access land, protected open space and Green Belt. Several linked Public Rights of Way (PROW) cross the Common, including two which form part of the Chisholm Trail shared cycling and walking route to/from Cambridge North station.
- 2.14 The application site is wholly within the administrative area of Cambridge City Council.

3.0 The Proposal

3.1 The application seeks full planning permission for three component parts:

- (i) Demolition and removal of the existing radar (the AR15 Radar) to the south of the runway. The AR15 Radar is 14m in height.
- (ii) Removal of the existing radar adjacent to Hangar 16, to the north of Hangar 17 (the H16 Radar). The H16 Radar is 38m in height (30m tower and 8m antennae). It will be dismantled and re-used in the construction of the H17 Radar.
- (iii) The construction of a new radar (the H17 Radar) and associated infrastructure on the north-west side of the airport, immediately to the west of Hangar 17, on an area of hard standing comprising unused apron space, east of Hangar 21 and north of the GRE. The H17 Radar would be just over 43.3m in height (35m tower, 8m antenna, 0.3m plinth).

	Location	Height Above Adjacent Ground Level	Height Above Ordnance Datum
Existing AR15 Radar	South of existing runway	14.2m in height	24.7m AOD
Existing H16 Radar	Adjacent existing Hangar 16	38m high (30m tower, 8m antennae)	53.5 AOD
Proposed H17 Radar	Immediately west of Hangar 17	43.3m high (35m tower, 8m antenna, 0.3m plinth)	54.1 AOD

Table 1: Comparison of heights of radars

The Proposed H17 Radar

3.2 The purpose of the proposed H17 Radar is to ensure the safe control of aircraft movements in the wider airspace above and around the Airport. This is achieved by the radar detecting the presence and position of aircraft in the airspace. This enables controllers to manage the safe co-ordination of landing and departing aircraft in the uncontrolled airspace.

- 3.3 The proposed H17 and existing H16 Radars include both primary and secondary radars, which is required to meet current Civil Aviation Authority (CAA) operational requirements. Primary surveillance radar illuminates a target with a transmitted microwave signal, which is then reflected and picked up by a receiving device. This type of radar is referred to as 'non-cooperative' because the 'target' it detects does not need to have its own radar transponder.
- 3.4 A secondary surveillance radar sends an interrogation signal, asking for aircraft identify, but relies on targets being equipped with a radar transponder. These aircraft targets respond to each interrogation signal by transmitting encoded data such as an identify code and the aircraft's altitude. This type of radar is referred to as 'co-operative' because it requires the target being detected to respond with the information requested.
- 3.5 Officers note that the AR15 Radar does not have secondary radar surveillance. The Airport instead uses a feed from a National Air Traffic Services (NATS) Radar elsewhere.

- Physical Structure

- 3.6 The proposed H17 Radar will comprise a lattice steel mast structure (re-using the tower from the existing H16 Radar), upon which is attached the radar. The square open lattice tower has an internal access stairwell, above which rests the radar mount, square access platform and motor housing cabin. The tower would be splayed for the first 10m above ground level, above which it would be straight. The total combined height of the structure will be 43.3m, comprising a 0.3m concrete plinth, 35m mast and 8m radar head.
- 3.7 The required height of the radar is dependent upon the relative ground level and the height of adjacent structures to ensure that the 'sterile zone' of the radar beam being formed is not adversely impacted by interference with the roofs of the adjacent hangars.
- 3.8 At 43m, the proposed height of the H17 structure is necessary in order for Airport operational requirements to be met and ensure acceptable performance. This is the minimum height required for the radar beam to form without being impeded by the adjacent hangar building, which is 27.6m high. It would be 5.3m taller than the existing H16 Radar, due primarily to the site ground level being lower than that of the H16 site.
- 3.9 The radar itself would comprise two dishes secured to the radar mount – an upper dish with an 8.5m rotating diameter and a second dish of just over 5m in diameter. They are to be coloured orange and white and will rotate at approximately 15 revolutions per minute.
- 3.10 The upper corners of the radar tower would be illuminated with two red obstacle warning lights for aircraft safety reasons. LED pedestrian lighting

would be installed on the stair of the radar tower but would be used only in emergencies.

- 3.11 The proposals also include a services cabin, diesel fuelled emergency generator and other ancillary equipment at ground level. The services cabin would measure approximately 9m long, 5m wide and 3.5m high. The radar mast, ground level cabin and generator will also be installed on a 0.3m concrete plinth.
- 3.12 A 2.4m high palisade security fencing would enclose the radar site. Minor re-configurations would be made to existing ground level drainage, whilst services such as telecoms and power would connect into Hangar 17.
- 3.13 In terms of access arrangements, no alterations to public roads outside the perimeter of the Airport are proposed, as the H17 Radar will be located airside. Only aircraft and other authorised vehicles operating at the Airport will be allowed to enter the facility. The proposed H17 Radar will reuse most of the parts of the recently constructed H16 Radar following its dismantling.
- 3.14 The proposed H17 Radar would be located approximately 200m from the nearest residential property in Barnes Close.

	Existing H16 Radar	Proposed H17 Radar
Distance to closest building façade of nearest residential property.	45m (22 Sunnyside)	205m (5 Barnes Close)
Distance to closest edge of garden of nearest residential property.	45m (22 Sunnyside) (this property has a single storey side extension extending to the boundary edge)	195m (5 Barnes Close)

Table 2: Distances to nearest residential properties.

- 3.15 The application supporting documentation advises that the specification of the radar has been led by latest standards in radar technology, and by MADG’s obligation with suppliers to manage the risk to life at a level deemed to be As Low as Reasonably Practicable (ALARP). The detailed design is driven by the site-specific location: the height of a radar is based on the relative ground level and height of structures in the vicinity.

- Proposed Operation of H17 Radar

3.16 The supporting documentation which accompanies the application advises that the proposed radar would be in continuous operation 24 hours per day, 7 days a week.

- Programme and Construction

3.17 The programme of works is estimated at approximately 13 months in total. Dismantling the H16 Radar and construction of the H17 Radar will take 6-7 months. The H17 Radar will then be commissioned and optimised to gain CAA approval, which will take 5 to 6 months. Demolition of the AR15 Radar will take approximately 1 month and will commence after the H17 radar has been approved by the CAA.

3.18 The supporting documentation advises that construction workforce and vehicles will access the Airport using the existing access from Barnwell Drive in the north-west of the Airport (Gate 13). A Construction Environmental Management Plan (CEMP) has been prepared and is submitted as an Appendix to the ES. It covers the controls on construction activities at all three sites to control construction impacts.

3.19 It is proposed that construction works would take place during normal daytime working hours.

Application Documents

3.20 In addition to the application forms, covering letter and drawings, the application is accompanied by the following supporting information:

- Planning Design and Access Statement, July 2021
- Statement of Community Involvement, July 2021
- Environmental Statement: Cambridge City Airport, Radar Replacement Project, July 2021
- Environmental Statement Appendices, including Alternative site assessment/report
- Environmental Statement Non-Technical Summary, July 2021
- Radar Safety Certification

3.21 The proposals have been discussed with Council officers as part of detailed pre-application dialogue. A developer presentation was also made to the JDCC at pre-application stage, on 23 June 2021.

3.22 Public consultation on the proposals was undertaken during May 2021. This was a virtual consultation due to COVID-19. It was advertised in the local press, and by letter to community leaders and stakeholder organisations. Nearly 600 local residents were also informed of the consultation by letter and accompanying leaflet. Details of the consultation activities and consideration of responses by the Applicant are contained in the submitted Statement of Community Involvement (SCI).

- 3.23 An update on the planning application proposals was provided to JDCC members at an officer-led briefing on 06 April 2022.
- 3.24 On 13 June 2022, a JDCC committee site visit took place. The purpose of the site visit was:
- To see the existing H16 Radar site.
 - To see the proposed H17 Radar site.
 - To observe the existing H16 Radar in operation.
 - To listen to the existing H16 Radar close up and at a distance.

Amended Plans and Additional Information

- 3.25 Following a request for further information under the EIA Regulations 2017 in relation to the ES, the following additional information was formally submitted under a covering letter from the Agent dated **20 October 2021**:
- Addendum to the Alternative Sites Assessment (ASA) (Appendix A3.1 of the ES):
 - Further constraints plan showing key constraints within the Airport boundary (such as the main and grass runways, and the clear and graded areas either side of these runways).
 - Letter from the Accountable Manager for the Aerodrome and Aviation Security Accountable at Cambridge City Airport, explaining the reasons for locating the radar within the Airport.
 - Further information supporting the choice of the H17 location of the radar in the area of land available in the north-west part of the Airport.
- 3.26 Following the statutory consultation period and initial officer assessment of the application, additional information was formally submitted to the Council by letter from the Agent dated **29 November 2021**. The additional information provided relates to the following:
- The location and design of the development proposals, including the effects of a radome radar design.
 - The choice of site, and decision to rule out an off-Airport radar location.
 - Health and Electromagnetic radiation.
 - Response to noise matters raised in the initial planning consultation response made by the City Council's Environmental Quality and Growth Service (report No J20- 12041B/1/F1 by Noise Consultants Ltd).
- 3.27 Further limited re-consultation was undertaken with regard to the amendments received in November 2021.

3.28 Further correspondence was formally submitted to the Council by letter from the Agent dated **10 March 2022**. The correspondence relates to the following:

- Confirmation of agreement to the Applicant seeking a temporary planning permission for a period of ten years, in view of the fact that the Applicant is progressing relocation plans away from Cambridge Airport.

3.29 Minor changes to the proposed H17 Radar ground works were submitted to the Council by letter from the Agent dated **25 April 2022**. The correspondence relates to the following:

- The position within the H17 compound of the standby back-up diesel generator (relocating it 6m to the east).
- Changes to the alignment of the compound fence line (to tie the northern and southern fence lines into Hangar 17).
- Changes to the routing of underground fibre optic and power cable feeds from Hangar 17 to the compound.

3.30 These changes were formalised following discussion with the planning case officer, who is satisfied that the proposed changes are modest and have no material effect on the findings of the EIA. No additional consultation was carried out.

4.0 **Relevant Site History**

4.1 The relevant site history is as follows:

Reference	Description	Outcome
16/2212/FUL	Aircraft Engine Ground Running Enclosure and Supporting infrastructure works, including a new taxiway link and other associated works.	Approved December 2018.
S/1231/18/OL and 18/0481/OUT	Outline planning application (all matters reserved except for means of access in respect of junction arrangements onto Coldhams Lane, Cherry Hinton Road and Airport Way) for a maximum of 1200 residential dwellings (including retirement living facility (within Use Class C2/C3)), a local centre	Approved December 2020.

	comprising uses within Use Class A1/A2/A3/A4/A5/B1a/D1/D2, primary and secondary schools, community facilities, open spaces, allotments, landscaping and associated infrastructure.	
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5.0 Relevant Legislation

5.1 European EIA Directives and Regulations

European Union legislation with regard to environmental assessment and the planning regime remains unchanged having legislative application despite the UK leaving the European Union on 31 January 2020. The government passed secondary legislation in October 2018 to ensure the continued operation of the EIA regime.

An EIA is required by the 2017 EIA Regulations. The ES must identify and report the likely significant effects of the project on the environment, which should cover the direct effects and any indirect, secondary, cumulative, short-term, medium-term and long term, permanent and temporary, positive and negative effects of the project. It must also report the mitigation measures that are proposed to avoid, reduce or remedy the likely significant effects. In cases where mitigation measures are not proposed or entirely effective, the EIA will identify any residual impacts and determine their significance.

5.2 The Conservation of Habitats and Species Regulations 2017

Consideration has been given to the application of the Conservation of Habitats and Species Regulations 2017 ('the Habitats Regulations'). Regulation 63 of the Habitats Regulations requires that the decision-making authority before deciding to...give permission...for a plan or project which is likely to have a significant effect on a European site and is not directly connected with or necessary to the management of that site, must make an 'appropriate assessment' of the implications of the plan or project for that site in view of the site's conservation objectives.

The Site is not in the vicinity of designated (European) sites of nature conservation importance and is not within such a designation. The Council is satisfied that the Application is unlikely to have a significant effect on a European designated site, either on its own or in combination with other projects and would not result in likely significant effects on European designated sites.

5.3 Planning and Compulsory Purchase Act 2004 (as amended)

Section 38(6) of the Planning and Compulsory Purchase Act 2004 requires that applications are determined in accordance with the development plan unless material considerations indicate otherwise. The development plan for Cambridge City Council, as the Local Planning Authority (LPA), is the Cambridge Local Plan 2018.

5.4 Equalities Act 2010

The Application has been assessed against the relevant sections of the Equalities Act 2010. It is not considered that the Applications discriminate against people with protected characteristics (age, gender reassignment, being married or in a civil partnership, being pregnant or on maternity leave, disability, race including colour, nationality, ethnic or national origin, religion or belief, sex, sexual orientation) specified in this Act.

5.5 National Guidance

National Planning Policy Framework (NPPF) July 2021
National Planning Practice Guidance (NPPG)
National Design Guide (NDG)

5.6 Cambridge Local Plan (CLP) 2018

Policy 1: The Presumption in Favour of Sustainable Development.
Policy 3: Spatial Strategy for the Location of Residential Development.
Policy 4: The Cambridge Green Belt.
Policy 8: Setting of the City.
Policy 13: Cambridge East.
Policy 14: Areas of major change and opportunity areas – general principles.
Policy 28: Carbon reduction, community energy networks, sustainable design and construction and water use.
Policy 29: Renewable and low carbon energy generation.
Policy 31: Integrated water management and the water cycle.
Policy 32: Flood risk.
Policy 33: Contaminated Land.
Policy 34: Light Pollution Control.
Policy 35: Protection of human health from noise and vibration.
Policy 36: Air quality, odour and dust.
Policy 37: Cambridge Airport Public Safety Zone and Safeguarding Zones.
Policy 55: Responding to context.
Policy 60: Tall buildings and the skyline in Cambridge.
Policy 61: Conservation and Enhancement of Cambridge's Historic Environment.
Policy 62: Local Heritage Assets.
Policy 67: Protection of Open Space.
Policy 69: Protection of sites of Local Nature Conservation Importance.

Policy 70: Protection of Priority Species and Habitats.
Policy 81: Mitigating the transport impact of development
Policy 83: Aviation Development.
Policy 84: Telecommunications.

5.7 Cambridge East Area Action Plan (CEAAP) 2008

CE/1: Vision for East Cambridge
CE/2 Development principles
CE/3 The Site for Cambridge East
CE/4 The Setting of Cambridge East
CE/16 Biodiversity
CE/17 Existing Biodiversity Features
CE/18 Archaeology
CE/22 Land Drainage, Water Conservation, Foul Drainage and Sewage Disposal
CE/23 Telecommunications Infrastructure
CE/24 Energy
CE/25 Sustainable Building Methods and Materials
CE/26 Noise
CE/27 Air Quality

5.8 Supplementary Planning Documents

Greater Cambridge Shared Planning Sustainable Design and Construction SPD (2020).
Cambridgeshire Flood and Water SPD (2016).
Cambridgeshire and Peterborough Waste Partnership (RECAP): Waste Management Design Guide Supplementary Planning Document (2012).
Cambridgeshire and Peterborough Minerals and Waste Core Strategy (2011).
Cambridgeshire and Peterborough Minerals and Waste Site Specific Proposals Plan (2012).
Cambridge East Area Action Plan (AAP) (2008) (excluding policies CE/3 and C/35 which are replaced by Policy 13: Cambridge East of the Cambridge Local Plan).
Land North of Cherry Hinton SPD (2018).

5.9 Noise Policy Context

The proposed H17 Radar has the potential to give rise to noise impacts. An understanding of the relevant noise policy context is therefore considered essential. This is summarised in **Appendix B** of this report.

6.0 Consultations

6.1 Cambridgeshire County Council (Highways Development Management) – No objection.

- 6.2 **Cambridgeshire County Council Lead Local Flood Authority (LLFA)** – No objection. The proposed radar will be constructed on existing hard standing, served by an existing drainage network.
- 6.3 **Cambridgeshire County Council Archaeological Officer** – No objection.
- 6.4 **Greater Cambridge Shared Planning Service BNE Urban Design Team** – No objection. Comments. The Environmental Statement satisfies the relevant assessment criteria with regard to the visual impact of the proposed radar on the Cambridge skyline. Notes that a shadow flicker assessment has been undertaken, and that given the distance of the radar from residential properties and the presence of intervening vegetation, shadow flicker is likely to have a low impact on residential amenity.
- 6.5 **Greater Cambridge Shared Planning Service BNE Conservation Team** – No objection. Comments. Considers that there is adequate justification in support of the siting of the operational radar and that it will not harm the setting of nearby heritage assets including the Grade II listed Airport control and office building. Consider that the proposal will not harm the setting of nearby heritage assets.
- 6.6 **Greater Cambridge Shared Planning Service Landscape Officer** – Detailed comments provided. Whilst the methodology for the Landscape and Visual Impact Assessment (LVIA) is acceptable, the assessment of impact on the landscape character of Coldham's Common and visual impact to the users of the Common is questioned.
- 6.7 **Cambridge City Nature Conservation Projects Officer** - No objection. Content with survey effort and conclusions of the Environmental Statement with regard to biodiversity.
- 6.8 **Cambridge City Sustainable Drainage Engineer** - No objection. Comments. The proposals indicate that there is no increase of impermeable area and new radar will be on a small area of existing hardstanding currently drained by a surface water system. Proposals for the new radar are resilient with sensitive infrastructure raised 300mm above ground levels. Proposals are supported in terms of drainage and flood risk. The proposed development should be constructed in accordance with the submitted information.
- 6.9 **Cambridge City Council Health and Environmental Services (Principal Environmental Health Officer)** - No objection.

Condition revision (response dated 8 June 2022): The development proposed is acceptable subject to the imposition of revised conditions/informatives wording relating to the following:

Unexpected Contamination
Construction Environmental Management Plan & Working Hours

Standby Emergency Back Up Generator Operation
H17 Radar - Noise Insulation Condition
H17 Radar – Permitted Operational Sound Levels
H17 Radar - Operational Sound Verification Assessment Report
H17 Radar - Non-Compliance with Radar Sound Verification Assessment
Noise Limits

Application as Amended (response dated 11 February 2022): The development proposed is acceptable subject to the imposition of conditions/informatives relating to unexpected contamination; a construction environmental management plan and working hours; H17 noise insulation; H17 radar operational sound verification assessment report; H17 radar operational noise compliance assessment process.

Detailed comments provided, executive summary as below:

We have reviewed the further information (additional information submitted under cover of a Vantage Planning letter dated 29th November 2021), together with the response and supplementary information previously provided on 20th October 2021 in response to a Great Cambridge Shared Planning (GCSP) service letter of 24th September 2021 requesting further information under the EIA Regulations 2017 in relation to the Environmental Statement (ES).

It is our view that the application is now fully in accordance with the EIA regulation requirements and the submitted ES with additional amendments / information etc includes all the necessary Env Health issues / topic area related information and impact assessments to allow us to make informed decision about the acceptability of the proposals.

The Environmental Quality and Growth (EQG) service fully support in principle the relocation of the existing H16 radar to the alternative H17 location as proposed, where it would be located further from local residential premises and will have less of an impact on local amenity / quality of life in terms of the main operational environmental impacts / effects such as shadow flicker and noise, when compared with the existing H16 radar when it was fully operating. Contaminated land and air quality impacts are negligible and acceptable.

We do not envisage any unacceptable adverse impacts on non-residential premises such as Commercial offices, other offices and work studios all of Barnwell Road / Drive, Peverel Road Allotment Gardens (Whitehill Allotment Society) and other recreational areas or areas of open space and the Abbey Meadows School.

In summary, having assessed the application submissions and having regard to the conclusions of the Council's '*Three Spires Report, Jan 2022 - EQG/CCC*' report it is our view that operational noise from the proposed H17 radar will not give rise to any significant adverse impacts on the health and the amenity / quality of life of nearby residential premises.

Based on national planning practice guidance on noise and the Government's Noise Policy Statement for England, it is concluded that the predicted H17 radar noise emissions at residential receptors are considered as being below a Lowest Observed Adverse Effect Level (LOAEL - level above which adverse effects on health and quality of life can be detected) at all times. At the most sensitive time of day at night-time, the levels are just below LOAEL.

At such an effect level the noise should not cause any change in the behaviour, attitude or other physiological responses. The radar noise may slightly affect the acoustic character of an area but not to the extent that there is a change in quality of life / amenity. If the noise exposure is at these levels the national planning guidance action / advice is that no additional specific measures are required to manage the proposed radar noise in the prevailing acoustic environment.

Therefore, it is concluded that the proposed development is in accordance with NPPF paragraphs 174 e) and 185 a) and Cambridge Local Plan 2018 policies 35: Protection of human health and quality of life from noise and vibration and 83: Aviation development.

However, to ensure that the radar noise complies with the predicted noise rating levels as detailed in the submitted ES and to protect the quality of life / amenity of local residents, a number of bespoke operational noise conditions are recommended.

Application as Submitted: It is not possible to fully comment on the proposed development. Requests additional information.

To Note: The EQG/Environmental Health service of Cambridge City Council also engaged the services of an acoustic consultant (Three Spires Acoustics Ltd) to independently assess and advise on the potential noise impacts of the existing H16 and proposed H17 radar.

The Council's acoustics consultants (Three Spires Acoustics Ltd) report 'Cambridge City Airport Radar Noise - Statutory Nuisance & Planning Assessment, Rev3 - 31/01/2022: Ref. No. TSA/ENA/2021/37' (the 'Three Spires Report' Jan 2022) is submitted alongside the City Council's Environmental Health response, and is considered relevant, and referred to throughout the 11 February 2022 response.

The full EQG consultation response and Three Spires Report Jan 2022 is included as **Appendices D and E** to this report.

- 6.10 **Cambridge City Council: Streets and Open Space** – No objection.
- 6.11 **South Cambridgeshire District Council, Development Officer, Health**
– No objection.

Application as Amended: Comments. Having reviewed the revisions to the Health Chapter in relation to the effects of Electro Magnetic radiation, am satisfied that there will be no adverse impacts from the radar.

Application as Submitted: Comments in respect of the Health Impact Assessment report submitted as part of the Environmental Statement. Satisfied that the report is policy compliant. Agrees with methodology. Requests further information in respect of visual impact and electromagnetic radiation.

- 6.12 **Natural England** – No objection. Comments. Considers the proposed development will not have significant adverse impacts on statutorily protected nature conservation sites or landscapes.
- 6.13 **Historic England** – No objection. Comments. The lattice steel structure would potentially affect the setting of the scheduled monument Old Cheddar Lane Pumping Station, located 1.7km northwest of the Radar; the grade I listed Stourbridge Chapel, 1.3km to the north and the grade II listed Marshall's Cambridge Airport Control and Office building, located approximately 700m to the northeast. Having considered the *Environmental Statement* produced by Logica Consultants and the *Planning, Design and Access Statement* produced by Vantage Planning Ltd, satisfied that adequate justification has been provided in support of the proposed siting of the Radar, which is an essential operational requirement. Satisfied that would not cause harm to the setting of designated assets, the setting of conservation areas or non-designated areas.
- 6.14 **Environment Agency** - No objection. Recommends informative relating to removal of waste off-site.
- 6.15 **Cambridge City Airport** - No objection. Comments. The proposed development has been examined from an aerodrome safeguarding perspective and does not conflict with safeguarding criteria. Requests to be kept informed of any intended crane usage to ensure that this does not infringe safeguarded surfaces.
- 6.16 **Cambridgeshire Constabulary (Designing Out Crime Officer)** - No objection.
- 6.17 **Health and Safety Executive Advice** – Comments. The proposed development site does not currently lie within the consultation distance (CD) or a major hazard site or major hazard pipeline, therefore at present HSE does not need to be consulted on any developments on this site.

7.0 Representations

- 7.1 Over 110 third party representations were received from the owners/occupiers of the following addresses:

- 1a Sunnyside, Cambridge
- 6 Sunnyside, Cambridge
- 10 Sunnyside, Cambridge
- 11 Sunnyside, Cambridge
- 12 Sunnyside, Cambridge
- 14 Sunnyside, Cambridge
- 18 Sunnyside, Cambridge
- 4 Peverel Close, Cambridge
- 9 Peverel Close, Cambridge
- 10 Peverel Close, Cambridge
- 19 Peverel Road, Cambridge
- 40 Peverel Road, Cambridge
- 50 Peverel Road, Cambridge
- 54 Peverel Road, Cambridge
- 68 Peverel Road, Cambridge
- 90 Peverel Road, Cambridge
- 115 Peverel Road Cambridge
- 118 Peverel Road, Cambridge
- 170 Peverel Road, Cambridge
- 218 Peverel Road, Cambridge
- 7 The Westering, Cambridge
- 12 The Westering, Cambridge
- 14 The Westering, Cambridge
- 16 The Westering, Cambridge
- 20 The Westering, Cambridge
- 24 The Westering, Cambridge
- 25 The Westering, Cambridge
- 32 The Westering, Cambridge
- 36 The Westering, Cambridge
- 37 The Westering, Cambridge
- 43 The Westering, Cambridge
- 46 The Westering, Cambridge
- 47 The Westering, Cambridge
- 48 The Westering, Cambridge
- 52 The Westering, Cambridge
- 53 The Westering, Cambridge
- 58 The Westering, Cambridge
- 51 Whitehill Road, Cambridge
- 60 Whitehill Road, Cambridge
- 138a Whitehill Road, Cambridge
- 13 Barnes Close, Cambridge
- 81 Barnwell Road, Cambridge
- 83 Barnwell Road, Cambridge
- 125 Barnwell Road, Cambridge
- 139 Barnwell Road, Cambridge
- 11 Holyoake Court, Whitehill Road, Cambridge

- 46 Ainsworth Street Cambridge
- 43 Golding Road Cambridge
- 12 The Homing, Cambridge
- 21 The Homing, Cambridge
- 14 Lemur Drive, Cambridge
- 16 North Cottages, Cambridge
- 20 Hurst Park Avenue, Cambridge
- 208 Coldhams Lane, Cambridge
- 530 Coldhams Lane, Cambridge
- 3 Galfrid Close, Cambridge
- 4 Galfrid Road, Cambridge
- 3 Rawlyn Close, Cambridge
- 4 Haggis Gap, Fulbourn
- 4 Thorley Road, Cambridge
- 43 St Bartholomew's Court, Cambridge
- 5 Rayson Way, Cambridge
- 50 Cavendish Road, Cambridge
- 52 Stanley Road, Cambridge
- 6 Edward Street, Cambridge
- 6 Meadowlands Road, Cambridge
- 70 High Street, Cambridge
- 74 De Freville Avenue, Cambridge
- 74 Hartington Grove, Cambridge
- 41 Hurrell Road, Cambridge
- 96 Cavendish Road Cambridge
- 71 Stourbridge Grove, Cambridge
- 19 Stanesfield Road Cambridge
- 41 Stanesfield Road, Cambridge
- 576 Newmarket Road, Cambridge
- 603 Newmarket Road, Cambridge
- 344 Cherry Hinton Road, Cambridge
- 43 Priory Road, Cambridge
- The Paddocks, Wimbish Manor Estate, Fowlmere Road, Shepreth
- 18 March Lane
- 58 Whitehill Road

7.2 The representations can be summarised as follows:

Objection to the proposals for the following reasons:

- Principle of development:
 - Assessment of other sites not sufficiently detailed.
 - Choice of site not justified.
 - Site should be on land outside the Airport perimeter.
 - Alternative site assessment is misleading.
 - The Airport should disclose the 2015 NATS report relating to alternative radar locations.

- Design of the proposed radar:
 - A radome should be placed on the radar.
- Visual impact/impacts of proposed radar on the environment:
 - Impact on local environment, including Coldham's Common.
 - Will not improve visual amenity with respect to corridor extension from Coldham's Common towards Teversham.
 - Impact on long views. Does not enhance the Cambridge Skyline and will be visible up to 3km away.
 - Will not be camouflaged or designed sympathetically to minimise visual impact.
 - Will operate and rotate with lighting, drawing visual attention.
 - Visual impact assessment criteria disputed.
- Impact on existing residential amenity:
 - Noise: Long term, tonal and persistent low frequency noise disturbance. Dispute background noise measurements provided used in ES impact assessment – considered unreliable and not representative.
 - Rotating radar.
 - Health impacts: Physical and mental health impacts, loss of sleep, impact on family life, dogs barking, anxiety and stress.
 - Electromagnetic radiation: Insufficient information/lack of an independent report to confirm acceptability of the risk from electromagnetic radiation.
 - Impact on the enjoyment of private outdoor space.
 - Light disturbance and pollution.
- Adverse environmental impact on local roads, including Sunnyside, The Westering, The Homing, Peverel Road, Barnes Close, Latimer Close, Peverel Close, Barnwell Road, and Coldham's Common.
- Impact on wildlife.
- Impact on greenbelt corridor extension.

- Comments relating to the process for submitting the representations.
 - Statement of Community Involvement Report not within suite of documents available for inspection.
 - Impact on value and saleability of houses in the area.
- 7.3 In addition to the third-party representations summarised above, a noise report by the independent acoustic consultancy **MAS Environmental Ltd (January 2022)** was commissioned and submitted in January 2022 on behalf of the resident of 53 The Westering 'Marshall Radar Tower Noise - Planning App. Ref: 21/03224/FUL - Preliminary Findings in relation to noise relating to baseline background masking noise, dated 30th August 2021 (reference: MAS/Rep/Rev/Aug210813). This forms an additional community objection to the further noise information submitted by the Applicant to the Local Planning Authority in November 2021.

Summary: The report provides a detailed analysis of guidance, and states that the noise assessment methods adopted by the Applicant are not compliant. The report concludes that substantial reduction in noise emissions will be required to meet the Council's suggested noise limits; that there is a duty to minimise such noise when applying national planning guidance; and that the noise from the radar tower source can be further mitigated.

- 7.4 A representation was also received from **Cambridge Past Present and Future**. Comments: Welcomes that a Landscape and Visual Impact Assessment accompanies this application. Notes a significant visual impact of the mast on the recreational users of Coldham's Common, for which no mitigation or compensation is offered. In order to comply with local and national planning policy believe that mitigation or compensation is required to offset the harm.

8.0 Member Representations

- 8.1 Cllr Haf Davies (former Labour City Councillor for Abbey Ward) and Cllr Alex Bullat (County Councillor for Abbey Ward) have made a joint representation objecting to the application on the following grounds:
- Negative effect of existing H16 Radar on local community through noise, light, and visual impact issues.
 - Adverse impact of proposed H17 Radar on residential areas and adverse visual impact on Coldhams Common.
 - A location further away from residential areas should be sought.
- 8.2 Cllr Hannah Copley, Green Party Councillor for Abbey Ward has made a representation objecting to the application on the following grounds:

- Current location: Impact on quality of life through physical proximity, noise and visual disturbance; loss of sleep, damage to mental and physical wellbeing. Impact on quality of life negatively due to noise and visual effects. Impact on health wellbeing (physical and mental) and quality of life of residents of East Barnwell.
- Proposed location – Negative impact on a greater number of residents relating to noise, light, visual disturbance, size, height.
- Impact on visual amenity: does not improve visual amenity with respect to Protected Open Spaces and will permanently damage that and the future Green Belt Corridor extension from Coldham's Common towards Teversham.
- Proposed radar will operate and rotate with lighting on a 24/7 basis, drawing visual attention to the H17 high point on the skyline.
- Proposed radar will impact on local residential amenity and will subject local residents to long-term, tonal and persistent low frequency noise disturbance.
- Proposed radar will permanently blight local environment including Coldham's Common.
- Proposed radar will not enhance the Cambridge skyline, will be visible as far away as 3km and will breach the existing skyline.
- Proposed radar will have a significant adverse effect on the environment especially the roads: Sunnyside, The Westering, The Homing, Peverel Road, Barnes Close, Latimer Close, Peverel Close, Barnwell Road, and Coldham's Common.
- Proposed radar has not been camouflaged or designed sympathetically to minimise visual impact.
- The applicant should update the existing location for radar AR15.
- Requests sight of the NATS report to explore alternative locations for a new primary radar.

9.0 Local Groups

9.1 Radar Collective (Residents Against Airport Disturbance and Radar) has made a representation objecting to the application on the following grounds:

- Impact on residential amenity of existing and future residents, and users of Coldham's Common.

- Lack of community consultation and environmental impact assessment.
- Visual impact.
- Impact on Green Belt Corridor extension from Coldham's Common towards Teversham.
- Noise impacts arising from long term, tonal and persistent noise disturbance.
- Adverse effect on the local environment.
- Light impacts - shadow flicker and strobe effect.

9.2 The above representations are a summary of the comments that have been received. Full details of the representations are available on the Council's website.

10.0 Planning Background

- 10.1 The Airport's existing primary surveillance radar (the AR15 Radar) is located on land to the south of the existing main runway. This radar was acquired by the Applicant in 2000 and its hardware is nearly 50 years old.
- 10.2 The AR15 Radar is reaching the end of its operational life, and it is becoming increasingly difficult for the Applicant to secure replacement parts and components (the original equipment manufacturer support is no longer available). The performance and reliability of this radar is therefore sub-optimal.
- 10.3 At 14.5m (AOD) the height of the existing radar also compromises its performance. The presence of other nearby structures (including Airport hangars and nearby residential development) interferes with the radar's beam forming and detection capability, causing blind spots and shadows. Local windfarms also create detection issues, with the continuous rotation of blades generating false detection signals. This makes aircraft detection and warning more difficult for air traffic controllers and risks the Airport not having radar coverage. The loss of the radar would severely constrain flying in certain weather conditions and increase the risk of mid-air collision due to the lack of awareness of other aircraft operating within the Airport's uncontrolled Air Traffic Zone (ATZ).
- 10.4 The application supporting documentation advises that the risk to the Airport of being without an operational radar due to failure of the AR15 Radar is high. This would have potentially serious implications and risks for the safety of aircraft operations and would severely constrain flying to certain weather conditions. There would also be a risk to the sustainability of some businesses at the Airport, where unrestricted access to the runway is a requirement to meet the operational needs of customers aircraft, which may be needed at short notice.

Requirement To Relocate the Existing AR15 Radar

- 10.5 The Applicant is obligated to provide and bring into operational use an alternative radar solution to the AR15 Radar for Airport safety and operational reasons, under the terms of the Section 106 Agreement for the LNCH outline planning permissions.
- 10.6 LNCH is a cross boundary site which lies to the south-east of the Airport. Outline planning permission was granted in December 2020 for residential led, mixed-use development of up to 1200 dwellings, including a local centre, schools and community facilities.
- 10.7 The LNCH site was purchased in Spring 2021 and is being developed as a joint venture by Bellway Homes and Clarion Housing Group. The developer project team is in active pre-application discussions with officers regarding the delivery of this development.
- 10.8 The LNCH Section 106 Agreement (Schedule 16 (Airport) Part 3 (Radar Safeguarding Area)) Part 3 restricts development of the site above permissible building heights until an alternative radar solution has been brought into use. The restriction includes a Sterile Zone surrounding 150m of the AR15 Radar where no permanent structures can be allowed. Without the relocation of the AR15 Radar, the development of the LNCH development site cannot be realised.
- 10.9 The LNCH report to the May 2019 meeting of JDCC noted that the Airport's primary surveillance radar would need to be replaced, and that a new radar would be positioned on the north side of the Airport. This references the H16 Radar which was subsequently constructed under the Airport's permitted development rights.

The Existing H16 Radar

- 10.10 A new primary surveillance radar (the H16 Radar) was erected and commissioned in 2019-2020 on the northern side of the Airport, to the west of Hangar 16. It began to operate in the autumn of 2020.
- 10.11 The H16 Radar was constructed under the Airport's permitted development rights, falling within Class G of Part 8 of GPDO and thus did not require planning permission. It was intended that this radar would replace the historic AR15 Radar.
- 10.12 Since this time, Cambridge City Council's Environmental Health Commercial Team have received complaints from residents living in the immediate vicinity of the H16 Radar. The complaints relate to operational noise (an audible tonal and fluctuating industrial-type mechanical noise) and shadow flicker. The noise complaints are about noise disturbance /annoyance experienced mainly during the evening and night-time periods and relate to adverse impacts on the use and enjoyment of properties (both inside and externally in gardens), with reported incidents of sleep disturbance and associated health and wellbeing impacts.

- 10.13 The Applicant has also directly received complaints about the H16 Radar from local residents. Following notification of the noise complaints, they engaged an acoustic consultant to assess and advise on the H16 Radar noise in liaison with the Council's Environmental Health service. A package of noise mitigation measures was undertaken to the upper H16 Radar motor cabin (the main noise source) to reduce the noise levels experienced by local residents.
- 10.14 Although the noise mitigation measures undertaken resulted in measured noise improvements, noise complaints have continued. The main source of the noise is two motors which rotate the H16 Radar antennae, which are located within the upper H16 Radar motor cabin immediately below the antennae.
- 10.15 The noise annoyance/disturbance is caused by a low level tonal mechanical motor-type noise, with a degree of amplitude modulation (varies up and down in volume). The character of the noise is such that it is readily identifiable and distinctive as the H16 Radar.
- 10.16 The Applicant subsequently committed to re-locating the H16 Radar to an alternative, less intrusive location which will continue to provide an acceptable level of operational and safety performance. In the interim, the AR15 Radar continues to serve the Airport.
- 10.17 The Applicant is now applying for full planning permission to dismantle and relocate the H16 Radar to a location on a site immediately to the west of Hangar 17 (the H17 Radar). After the new H17 Radar has been commissioned, the existing AR15 radar will be dismantled and removed. A relevant condition has been agreed (**Condition 3: Removal of AR15 Radar**).

Relocation of Marshall from Cambridge

- 10.18 In May 2019, Marshall Group announced its intention to relocate the Marshall Aerospace business from the Cambridge Airport site. In October 2020, following a site selection process, Marshall confirmed to the Council that it had secured an Option Agreement for a 35-hectare site at Cranfield Airport in Bedfordshire. In October 2021, following publication of the Local Plan First Proposals (which identified the Cambridge Airport site as a preferred location for growth), Marshall announced Cranfield Airport as the preferred location for the relocation of the Marshall Aerospace business.
- 10.19 In view of the stated intention to relocate by 2030 and recognising some uncertainty around the precise timescale of when this will be able to happen and be completed, the Applicant has confirmed the acceptability of a ten-year planning permission in respect of the proposed H17 Radar and associated structures and equipment (**Condition 2: Ten Year Permission**).

Consideration of Alternative Sites

10.20 The ES provides details of the proposed development, and a summary of the alternative sites considered as part of the site selection process for the relocated radar. The alternative assessment, including a more detailed Alternative Site Assessment (ASA), (Appendix 3.1 of the ES, as updated by an Addendum dated October 2021) reports on the alternative sites considered, and the reasons for the selection of the proposed site.

- Assessment Criteria

10.21 The ES identifies that the feasibility of alternative sites was identified and evaluated against key criteria (see Table 3 below). The potential to locate the proposed radar outside the Airport boundary was not considered within the ASA. This is because of the need to ensure compliance with CAA Regulations which cover the security of Airport Facilities.

Tier 1 Criteria	Safety and operational requirements Beam forming ability Obstacle limitation surfaces contours Presence and location of airport infrastructure Shadowing Impact of reflections Air space coverage of the radar image AR15 Radar and Very High Frequency Direction Finder (VDF)
Tier 3 Criteria	Noise
Tier 3 Criteria	Landscape and Visual Shadow Flicker
Tier 4 Criteria	Biodiversity Historic environment Hydrology and hydrogeology Land contamination
Tier 5	Other environmental considerations Air quality; traffic and transport Carbon and climate change Major accidents and disasters Human health.

Table 3: Key Assessment Criteria for Applicant's Choice of Site

10.22 The main locational constraint informing this process is the need to site the radar within the confines of the Airport boundary, to ensure the protection and safety of the radar in the interests of public safety, and to facilitate its future maintenance.

10.23 The site selection process has also been informed by studies which were commissioned by the Applicant, relating to noise, landscape and visual impacts and shadow flicker.

10.24 In response to a request from the planning case officer under the EIA Regulations 2017, additional information was provided by letter dated 20 October 2021 concerning the choice of the H17 site over the alternatives. The Applicant's response includes photomontages to compare the visual impact on representative views, including from Coldham's Common and The Westering, and the assessment of the shadow flicker effects of radar on the alternative sites.

- On-Site Locations

10.25 The Addendum to the ASA identifies that the location selection prioritises the operational and safety requirements of the Airport. This includes radar operational optimisation (for example, not in the vicinity of the main runway and grass runway due to Obstacle Limitation Survey (OLS) contours and restrictions on the height of infrastructure) and noise (prevention of significant noise effects to sensitive receptors in the immediate vicinity of the Airport). Based on the information submitted, it is the Applicant's view that a location in the vicinity of Hangar 17 (north-west of the Airport), is the preferred option on-site within the Airport's physical boundaries

10.26 The ASA identifies that due to on-site constraints, the only potential area to site the radar is to the north-west of the Airport. Taking into account the existing hangars and infrastructure in this area, two potential locations within this area were studied for a number of environmental impacts – namely the car park of Hangar 21 (H21 site), and adjacent to Hangar 17 (H17 site).

10.27 The technical information undertaken to support the updated ASA demonstrates that the H17 site is preferable in comparison to the H21 site, by minimising any effects resulting from landscape, visual, and shadow flicker.

- Off Site Locations

10.28 As identified above, the main reason detailed by the Applicant for a preferred site within the confines of the Airport boundary is compliance with CAA Regulations covering the security of Airport Facilities.

10.29 As part of the additional information submitted in respect of the ASA, the Airport Director provided written confirmation that an off-site location would not offer the level of security assurance required to satisfy CAA Regulations relating to Airport security. On this basis, given that off-site locations are not reasonable alternatives, the Applicant's assessment of alternative sites has focused on on-Airport options only.

- 10.30 The application submission provides further details in respect of why an off-Airport location is less desirable. This includes ease of access of Airport personnel to undertake regular and emergency maintenance, as well as availability of utilities required both to serve the radar and data communications infrastructure connecting the radar to the Airport control tower.
- 10.31 Officers note third party representations which refer to a NATS report which was commissioned in 2015 in respect of radar performance in different locations, both on and off site. The Applicant has advised that this report was used principally as a basis for further detailed investigations of potential radar sites. Whilst the NATS report recommended the current site at Hangar 16 as the best option to be taken forward for further consideration, it did not cover wider safety or other security considerations or environmental acceptability.
- 10.32 The Applicant has advised that the NATS report has not informed the current position with regard to the choice of H17 Radar site. The document has not been shared and does not form part of the application documentation.
- Summary – Assessment of Alternative Sites
- 10.33 Under the EIA Regulations, an ES is required to provide details of the consideration of alternative sites, and the main reasons for the choice of site. Schedule 4 (Part 2) requires a description of the '*reasonable alternatives*' studied by the developer (for example in terms of development design, technology, location, size and scale), which are relevant to the proposed project and its specific characteristics, and an indication of the main reasons for selecting the chosen option, including a comparison of the environmental effects between the sites considered. The EIA Regulations do not require the environmental assessment of potential sites to be detailed.
- 10.34 The ES which has been submitted in respect of the development proposals states that alternative sites have been considered, identifies the alternative designs that have been considered, and the reasons for the choice of the proposed H17 site. A description of the reasonable alternatives has been provided, together with an indication of the main reasons for selecting the H17 Radar site. On this basis, officers are of the view that the proposals satisfy and comply with the requirements of the EIA Regulations with regard to the consideration of alternative sites.
- 10.35 Officers are satisfied that the assessment of alternative sites is compatible with the requirements of the EIA framework, which requires alternative sites to be explored. The application documentation confirms that the site selection process has followed a detailed evaluation. The development has been assessed on the basis of the application site for the H17 Radar as identified in the submitted scheme.

11.0 Planning Assessment

11.1 From the consultation responses and representations received and from an inspection of the site and the surroundings, the key issues are:

- Principle of development
- Design and layout
- Impact on Site and Surroundings, including Landscape and Visual Impact
- Other Environmental Considerations:
 - Air quality, odour and dust
 - Archaeology and the historic environment
 - Biodiversity
 - Ground conditions and soils
 - Human health (including shadow flicker)
 - Drainage and Flood Risk
 - Lighting
 - Noise
 - Traffic and transport
 - Cumulative effects
- Impact on residential amenity
- Third party issues
- Other Issues
- Planning balance
- Summary and conclusions

12.0 Principle of Development

12.1 Cambridge Airport was established as an aerodrome in 1938 and operates under licence from the Civil Aviation Authority. The Airport supports various types of aircraft operations, including general aviation, business aviation and the East Anglian Air Ambulance, as well as occasional commercial and charter passenger flights. It is also home to a number of flying clubs and flying schools.

12.2 Aircraft maintenance, repair and overhaul (MRO) operations are a core part of the Airport's operations. This is carried out by MADG, which specialises in the conversion, modification, maintenance and support of aircraft and defence solutions. The company has an international customer base which includes aircraft manufacturers, airlines and government military air forces.

12.3 The primary surveillance radar is an important piece of the Airport's infrastructure and is essential to maintaining a safe Airport and aircraft operations. This is because airspace around Cambridge Airport is 'uncontrolled' airspace, which means that aircraft manoeuvring through the airspace are not obliged to notify the Airport's air traffic controllers.

- 12.4 Primary surveillance radar is necessary to ensure the safe control of aircraft movements in the airspace above and around the Airport, by locating and identifying aircraft in the immediate airspace outside the ATZ.
- 12.5 The supporting documentation which accompanies the application states that the replacement of the AR15 Radar will not influence the scale of Airport operations. It does not facilitate air traffic or passenger growth at the Airport or allow the current operations to change in anyway.
- 12.6 The risk of being without an operating radar has significant implications for activities at the Airport, and risks in terms of aircraft operational safety, and the sustainability of some businesses at the Airport. The Applicant has an obligation as a supplier to the UK Ministry of Defence (MOD) contractor to manage the risk to life as part of the planned and unplanned maintenance to its UK aircraft fleet, and also for military aircraft from other nations.
- 12.7 Due to its age, the existing AR15 Radar is at increasing risk of failure, which in turn risks the Airport being in the unacceptable position of having no radar coverage. In those circumstances the loss of the radar would severely constrain flying in certain weather conditions and increase the risk of mid-air collision due to the lack of awareness of other aircraft operating within the Airport's uncontrolled ATZ.
- 12.8 Officers acknowledge that the proposed radar is an essential function of the operating Airport which is necessary to ensure the continued safety of the Airport's operations. On this basis, the principle of the proposed development is acceptable, subject to the following evaluation.

13.0 Design and Layout

- 13.1 The design and layout of the proposed H17 Radar and associated infrastructure is constrained by its relationship with both surrounding context and functional requirements. The radar mast is utilitarian, comprising an exterior of lattice steelwork construction. For it to perform optimally, the radar needs to receive and emit radar beams without interference from other buildings. Given the prevalence of other tall structures at Cambridge Airport, and to ensure optimal performance, the base of the radar head is required to be above the height of the adjacent Hangar 17 building (27.6m). This consequently sets a minimum mast height below which its performance would be compromised.
- 13.2 The application supporting documentation advises that consideration was given to the installation of a radome on the radar head. This is a structural weatherproof enclosure, constructed of material transparent to radio waves, which protects radar equipment from external environmental considerations (notably extreme weather conditions). It does not reduce nose impacts or shadow flicker.

- 13.3 The Applicant has advised that a radome design solution was not pursued, on the basis that (amongst other things), it would not significantly reduce the visual impact of the structure. Whilst noting that Local Plan Policy 84 (Telecommunications), criterion (b), requires the visual impact of telecommunications development to be minimized through design and location, officers accept that the visual impact of the H17 Radar would not be mitigated through incorporation of a radome. In these particular circumstances, the visual impact of the design of the radar could not be designed out.
- 13.4 Given the functional requirements of the proposed radar, the design and layout of the proposals are considered in accordance with Policy 84 of the Cambridge Local Plan.

14.0 **Impact on Site and Surroundings**

- 14.1 The proposed H17 radar tower would stand at a height of just over 43m. Although not a solid structure but of a lattice steelwork construction and therefore relatively permeable visually, the top part of the structure will necessarily rotate which will draw attention and make the structure more visible. The H17 Radar will be visible from the medium to short distance views and, at a proposed height of 43.3 metres the application triggers the application of the Cambridge Skyline Guidance (Appendix F of the Cambridge Local Plan 2018), which provides clarity on Policy 60: Tall buildings and the skyline in Cambridge.
- 14.2 Notwithstanding that Local Plan Policy 60 acknowledges Cambridge Airport as an exception within the Cambridge skyline, the impact on medium to short distance views as assessed within the submitted ES satisfies the relevant assessment criteria set out in Appendix F of the Local Plan. In accordance with the requirements of Appendix F, the application is accompanied by written and illustrative material which provides the evidence base and policy justification for the proposed H17 Radar.
- 14.3 The application submission demonstrates that an options appraisal process was undertaken to determine a site location which meets the operational and safety requirements of the development proposals, whilst minimising the visual impact of the proposal. The alternative sites and the justification for the choice of the H17 Radar application site is set out in the 'Consideration of Alternative Sites' section of this report (Paragraphs 10.19 to 10.34).

Landscape and Visual Impact Assessment (LVIA)

- 14.4 The ES includes an LVIA which describes the existing landscape and visual baseline environments; assesses their sensitivity to change; describes the key landscape and visual related aspects of the proposal; describes the nature of the anticipated change upon both the landscape

and visual environments; and assesses the long-term effects during construction, operation and removal.

- 14.5 The LVIA is based on a 3km diameter study area centred on the site of the proposed H17 Radar and derived from the 'zone of theoretical visibility' (ZTF). The LVIA sets out the existing landscape character, topography and the designated and protected landscapes within the 3km study area.
- 14.6 The potential visibility of the H17 Radar, as identified by the ZTV would extend beyond the 3 kilometres study area, across open Fenland, although these views would be reduced by intervening buildings and trees. The ZTV also identifies that there are nearer and more significant views within the settled northern edge of Chery Hinton, as well as small pockets of visibility within the open areas at Cherry Hinton Recreation Ground.
- 14.7 To the south-west visibility extends to the residential edge of Cambridge. To the west visibility extends approximately 1.2 kilometre across Coldham's Common to the railway line. Beyond this, visibility is limited with the exception of the area of open space around Jesus College/Midsummer Common, approximately 2.6km away.
- 14.8 The LVIA includes an assessment of the impact of the development on the landscape character and on visual receptors (the different groups of people who may experience views of the development) within the study area and presents 12 representative views which may be affected by the development. The study area, visual receptors and key views were agreed with Council officers during pre-application dialogue.
- 14.9 The methodology for the LVIA (including the ZTV), has been reviewed by the GCSP Landscape Officer, who considers the methodology to be thorough and in line with current UK guidelines for LVIA (GLVIA, 3rd Edition, 2013).

- **Baseline Landscape Character and Context**

- 14.10 The development site is located on the eastern edge of Cambridge in a flat area between the edge of Cambridge and the Fen. The land to the north and south of the Airport is mainly residential in use, but a business park and other commercial buildings are located immediately northwest of the Airport on Barnwell Drive. Fields and farmland are located to the east of the Airport. The Green Belt wraps around the eastern edge of the Airport and extends across the airfield to create a green corridor encompassing Coldhams Common. The Common is Registered common land, open access land and includes public rights of way, sports, play and allotments.
- 14.11 The LVIA uses Landscape and townscape character areas defined in the Cambridge Inner Green Belt Study 2015 which formed part of the evidence base for the 2018 Cambridge Local Plan. The study area includes a number of landscape character areas and townscape character areas:

Landscape Areas:

Fen
Fen edge
Chalk hills
River valleys

Townscape Areas:

Airport
Historic core
Bespoke houses, colleges and university buildings
Green spaces and corridors
Victorian and Edwardian terraced housing
Large scale commercial, industrial and service development
Post ward suburban housing
21st century mixed use development

- **Impact on Visual Receptors**

14.12 Chapter 13.1 of the ES sets out the follow visual receptors and key routes located within the study area:

- Recreational users of Coldham's Common
- Residents and users of local roads around Sunnyside, Mansfield Way and The Westering
- Residents, users of local roads and green space around Peverel Road
- Workers and users of the Barnwell Drive commercial area
- Users of the A1303 (Newmarket Road)
- Users of the A1134 (Barnwell Road)

14.13 Eight views are presented in the LVIA and represent each of the primary visual receptors in a 1km radius area centred on the site and listed above. Four long distance views are also presented, and address two views from the eastern edge of the Airport, a view from the River Cam and a view from Midsummer Common. The long-distance views include Strategic View 10 from the CLP Appendix F.

14.14 Table 13.1 of the LVIA section of the ES summarises the effects on visual receptor groups and key routes. A summary of the impacts on the visual receptors is provided below.

14.15 **The recreational users of Coldham's Common** (user group identified as a high-medium sensitivity) would be the only receptors receiving a significant, adverse impact from the development. Although the existing H16 Radar is currently partially visible from the Common, visibility of the proposed H17 Radar would be higher and more prominent, because it is nearer to the Common and the radar tower is higher. The proposed H17 Radar would be clearly visible from across the Common and would stand above the trees and the airfield buildings. The visual effects resultant from

the removal of the H16 Radar and construction of the H17 Radar on the users of Coldhams Common are identified as '*long-term, of medium scale, occurring across a wide extent of the area*'. Effects would be of '*medium magnitude, major-moderate (significant) and adverse*'.

14.16 Residents, users of local roads and green space around Peverel Road: The ES concludes that the visual effect on the residents within and around Peverel Road, Latimer Close and Barnes Close will be '*long term effects of medium-small scale and occurring across a wide-intermediate extent of the area*'. Effects would range from '*medium to medium-low magnitude*', and on balance would be '*moderate (not significant) and adverse*'. Since the nearest residential property is on Barnes Close, some 200m distance from the H17 Radar, the assessment considers that the visual effects would not be overbearing or intrusive

14.17 Residents, and users of local roads around Sunnyside, Mansfield Way and The Westering: Visibility of the proposed H17 radar from Sunnyside, Mansfield Way, the corner of The Westering and Sunnyside and from the rear of the properties on the eastern sides of The Westering would be less than views of existing H16 Radar. There would be a higher level of visibility of H17 from the northern end of The Westering, although it would become increasingly screened by the properties and intervening vegetation towards Sunnyside and Mansfield Way. The H17 Radar is unlikely to be visible from public areas of Meadowlands and The Homing, as well as Sunnyside, due to the orientation of the road, and the screening effect of adjacent houses/vegetation. The LVIA summarises the visual effects of the removal of the H16 Radar and its replacement by the H17 Radar on the residential areas to the north as: '*medium-small scale, occurring across an Intermediate extent of the area*. The effects would be of '*medium-low magnitude, moderate (not significant) and adverse*'.

14.18 Workers and users of the Barnwell Drive commercial area: The LVIA report states that the greatest, large-scale visual effects would be in the vicinity of Barnwell Drive, due to its close proximity to the site of the H17 Radar. The visual effect on the commercial area users on Barnwell Drive from the H17 Radar is identified as a '*long-term effect on users of this area, of medium scale, occurring across a wide extent of the area*'. Effects are assessed to be of '*medium magnitude, slight (not significant) and adverse*'.

14.19 Cherry Hinton: The visual effects on the residential properties on the northern and western edge of Cherry Hinton where they face across the airfield are judged to be '*long term and of small scale, occurring across an intermediate-localised extent of the area*'. The effects would be of '*low magnitude, slight (not significant) and adverse*'.

14.20 Officers broadly agree with the conclusions of the LVIA with regard the impact on visual receptors, although are of the view that the duration of the impacts has been overstated. Given the future development plans for the wider site, and that the Applicant has confirmed agreement to the H17

Radar being removed from the site within ten years (**Condition 2: Ten Year Permission**), it is considered more appropriate to consider the duration of the impacts as medium-term rather than long-term.

- **Impact on Landscape Character**

14.21 The proposed H17 Radar would be situated in the large scale Commercial Industrial and Service Development Townscape Character Area (TCA) (as defined by the Cambridge Inner Green Belt Study), adjacent to the border of the Cambridge Airport Landscape Character area. The two-character areas include large scale Airport hangars and other buildings associated with the Airport, and the LVIA concludes that this area has *'Medium-Low susceptibility and limited value, leading to a low-negligible sensitivity'*.

14.22 The proposed H17 Radar will be located next to Hangar 17 which is 27.6m high and close to the GRE building which is 20m high. The LVIA concludes that the proposed H17 radar tower is compatible with the two character areas but there will be *'small scale, long-term'* effects on the character area. The overall effect is concluded to be *'low magnitude, slight-minimal (not significant) and neutral'*.

14.23 The residential areas immediately north and southwest of the Airport are part of the 1900-1945 Suburban Housing character area. The LVIA considers the effect on the landscape character of the suburban housing to the north and southwest to be of a *'small scale, long-term and arising across a limited extent of the character area'*. These effects would be of *'negligible magnitude, minimal (not significant) and adverse'*.

14.24 Officers do not agree with this conclusion, being of the view that the effects would have a slightly greater impact, because the radar is of an unusual appearance, and is higher than adjacent Airport structures and the surrounding housing. Notwithstanding this, officers agree that the increase in magnitude would not change the final conclusion of the LVIA, for a less than significant effect on these residential areas.

- **Impact on Landscape Character of Coldham's Common**

14.25 Coldhams Common is located in the Greenspaces and Corridors character area. It includes large amounts of natural areas including grazing land, grassland and artificial sports pitches, as well as areas of formal play. The landscape is predominantly flat and open with extensive panoramic views across the Common contained by the boundary vegetation.

14.26 Boundary vegetation encloses the Common and separates it from the surrounding suburbs and roads. A few views of housing are visible and there are other reminders that the area is in the city with views of the football stadium, Airport hangar buildings and some warehousing. The size of the Common and the amount of enclosing vegetation gives a

strong rural feel particularly as it links physically with Stourbridge Common to the north and open countryside visually, beyond the Airport, to the east.

14.27 The LVIA recognises Coldham's Common as an area well used by the local community and therefore of high community value, leading to a '*medium sensitivity*'. No large-scale effects were identified on landscape character. The height and proximity of the H17 Radar was judged to have '*medium scale effects (adverse)*' on the Common because it would form a noticeable feature and begin to impose on the openness of this character area. The detailed conclusion for the character area is that there would be '*medium scale, long term effects*' across a wide extent of the character area, through the removal of the H16 Radar and the construction of the proposed H17 Radar. The LVIA identifies these effects to be of '*medium magnitude, moderate (not significant) and adverse*'.

14.28 Officers do not agree with the LVIA assessment of the impact on the landscape character of Coldhams Common and are of the view that the degree of change (the scale) to the landscape character of the Common, as set out in the methodology, is greater than as stated in the ES. Officers note that the proposed H17 Radar would be set against other Airport structures and partially obscured by those buildings or by vegetation. However, it would be taller than the adjacent hangar buildings, and whilst in the backdrop of the Airport, would differ in form from the surrounding Airport buildings. The structure would therefore be more obvious and intrusive to the landscape character of the Coldham's Common.

- Impact on the Fen Edge Character Area

14.29 The fen edge area lies to the east of the site and is a flat, expansive landscape used for farming. The LVIA concludes that the character area is of '*medium susceptibility and community value, leading to a sensitivity of Medium-Low*'. The proposed H17 radar tower viewed from the east would sit amongst other large structures in the Airport and so would not be highly visible. The LVIA concludes that the effects of the proposed radar would be '*negligible in scale, long-term and occurring across a limited extent of the receptor area. The effects would be of negligible magnitude and neutral*'.

14.30 Officers are in agreement with the LVIA assessment of the impact on views and character on the Fen Edge Character Area, and that the degree of change (the scale) to the landscape character of the Fen Edge is as stated in the ES.

Conclusion – Impact on Site and Surroundings

14.31 Officers broadly agree with the conclusions of the LVIA, except for the impact on Coldham's Common. Officers do not agree with the LVIA assessment of the impact on the landscape character of Coldhams Common and are of the view that the degree of change (the scale) to the landscape character of the Common, as set out in the methodology, is

greater than as stated in the ES. This is a result of the proposed H17 Radar's close proximity to the Common, its height and form and the fact that it rotates and will sometimes be lit. Construction of the H17 Radar would therefore be an alteration to the openness of the Common in such a way that it will change the character of the Common. This would also impact upon its recreational value to users and its amenity value.

- 14.32 However, having considered the visual effects of the proposed H17 Radar as identified in the ES, and mindful of future plans to relocate the Airport, officers are of the view that the duration of the impacts has been overstated. It is therefore considered more appropriate to consider the duration of the impacts as medium-term.
- 14.33 The proposed H17 Radar is considered to change the landscape character to such an extent as to have a significant visual impact on the wider landscape. Based on the submitted LVIA assessment, officers are of the view that the development proposals would generate significant adverse landscape and visual effects on the 'Recreational users of Coldham's Common' receptor group and the Common's landscape character, due to the sensitivity of the receptor, its proximity to the proposed H17 Radar and the extent of effects. Officers acknowledge that given the comprehensive alternative site assessment which was carried out by the Applicant, no further safeguards or mitigation measures can be taken to mitigate the visual appearance of the proposed H17 Radar, beyond the ten year planning permission secured through recommended condition 2.
- 14.34 The landscape and visual effects would be contrary to Paragraph 174 of the NPPF, which sets out that planning decisions should '*contribute to and enhance the natural and local environment by protecting and enhancing valued landscapes, in a matter commensurate with their statutory status or identified quality in the development plan*'.
- 14.35 By failing to conserve and enhance the setting and special character of the City, the proposals would also be contrary to Cambridge Local Plan Policy 8 (Setting of the City), and Policy 60 (Tall Buildings and Skyline in Cambridge) which seeks to ensure that proposals which break the existing skyline fit within the existing landscape and townscape with no adverse impact. The proposals would also conflict with Local Plan Policy 67 (Protection of Open Space), by causing harm to the character of open space of Coldham's Common, which has recreational importance.

15.0 Other Environmental Considerations

Air quality, Odour and Dust

- 15.1 Cambridge City Council has declared an Air Quality Management Areas (AQMAs) owing to exceedances of the annual mean nitrogen dioxide air quality objective in Cambridge city centre and along the main radial routes

into the city. The ES reviews and assesses the potential impact of the proposed dismantling and relocation of the radars at both the construction and operational phases of the development, on both the Airport and the surrounding area, in terms of the consequences for air quality, odour and dust.

- 15.2 The development proposals will not generate additional vehicular movements other than for occasional servicing or maintenance. The assessment concludes that the impact on air quality associated with vehicle emissions will not be significant.
- 15.3 Measures to mitigate dust emissions during the construction phase will be controlled and managed via a Dust Management Plan which will form part of the Construction Environment Management Plan (CEMP) condition. Measures will include ensuring easy to find contact details for the construction manager, implementing a Dust Management Plan, carrying out inspections, and erecting barriers where required. A relevant planning condition has been recommended (**Condition 7: Construction Environmental Management Plan and Working Hours**).
- 15.4 It is proposed that an emergency diesel generator sited immediately adjacent the proposed H17 Radar will be used in the event of any short-term mains power failure. The generator will be tested weekly for 5 to 10 minutes. Given the distance of the generator from sensitive receptors, officers agree with the conclusion of the ES in as much there will be no significant adverse effects. In accordance with the advice offered by the Environmental Health Officer, a condition has been recommended to control the operational hours of the generator (**Condition 9: H17 Radar Noise Insultation Condition**).
- 15.5 With these measures in place, officers are satisfied that there will be no significant effects on air quality or dust emissions as a result of the development proposals, either during removal of the H16 and AR15 Radars, and the construction and operation of the H17 Radar.
- 15.6 On the basis of the above evaluation, and subject to the inclusion of recommended conditions as outline above, the proposed development is considered acceptable with regard to air quality and odour.

Archaeology and the Historic Environment

- **Above Ground Heritage Assets**

- 15.7 A number of heritage assets are situated within 2km of the application site. These include the following:
- Old Cheddar Lane Pumping Station (a Scheduled Ancient Monument) – 1.7km to the northwest.
 - Stourbridge Chapel (Grade 1 listed) – 1.3km to the north; and

- Marshall's Cambridge Airport Control and Office building (Grade II Listed) – 700m to the north-east.

15.8 The impacts on these above ground heritage assets have been assessed as part of the application. The ES concludes that due to the distance between the development proposals and these specified above ground heritage assets, and the intervening screening (due to topography and existing buildings), there will be no significant effect on their respective settings. These impacts have been assessed as 'neutral', with a degree of effect as negligible and consequently not significant.

15.9 Consultation comments from Historic England and the Council's Conservation Officer confirms the acceptability of the approach which has been undertaken in assessing the development proposals affecting these heritage assets, and to the conclusions as set out in the ES.

15.10 Further clarification was sought from the Council's Conservation Officer with regard to the impact of the proposal on Coldham's Common heritage asset, which was judged in the ES as neutral. The degree of effect has been rated as negligible, and consequently not significant. The Conservation Officer has confirmed the acceptability of the assessment of the potential impacts on Coldham's Common as a heritage asset and agrees with the conclusion of the ES in this respect.

- **Below Ground Heritage Assets**

15.11 No below ground works are proposed at the H16 and AR15 radars, and therefore there is no potential to disturb below ground assets at these specified locations. With regard to the H17 Radar location, this has previously been disturbed by other Airport related construction, and consequently any below-ground heritage assets within the area where the H17 Radar is proposed to be located will already have potentially been damaged or lost. The Cambridgeshire Historic Environment Team has advised that no mitigation is required.

15.12 On the basis of the above evaluation, officers are of the view that the proposed H17 Radar would not cause harm to the setting of above and below ground designated heritage assets. In reaching this conclusion, officers have had regard to the consultation advice offered by Historic England, which states that the proposed H17 Radar would not cause harm to the setting of the specified designated heritage assets or non-designated assets. The proposals are therefore in accordance with Local Plan Policies 60, 61 and 62 with regard to heritage assets, and the NPPF.

Biodiversity

15.13 There are no European (Natura 2000) designated sites within 10km, or Sites of Special Scientific Interest and other UK protected sites within 2km of the proposed H17 Radar location. Three County Wildlife Sites (Airport Way Roadside Verge, Coldham's Common, and the River Cam) and five

Local Nature Reserves (Barnwell East and West, Coldham's Common, Logans Meadow and Stourbridge Common) are situated within 2km of the proposed H17 Radar location.

- 15.14 A Phase 1 Habitat Survey was undertaken to establish the baseline biodiversity starting point of all parts of the application site and was submitted as part of the ES. This identifies that the development relates to existing hard standing areas, which have very limited potential to support any species of value for biodiversity.
- 15.15 The biodiversity assessment of the proposed development included a desk study and Phase 1 habitat survey to describe the ecological baseline within the development area, with an assessment of the impacts on nature conservation. No significant ecological impacts from the proposed development are predicted on designated statutory and non-statutory sites of nature conservation value, nor on the conservation status of any habitats or species.
- 15.16 The potential for bats to occur in the building associated with the existing AR15 Radar is considered to be very low. As a matter of precaution, a pre-demolition check will be required to be undertaken, which would be secured by planning condition (**Condition 5: Pre-demolition check for bats**).
- 15.17 Noise modelling undertaken of the H17 Radar shows that noise generated at the nearest important sites for biodiversity (Barnwell East and West Local Nature Reserves) will be very low. Given that the background sound level is already influenced by Barnwell Road and existing Airport noise, officers agree with the conclusions of the ES: that it is considered that the radar will be mostly inaudible, and as such will constitute a negligible and not significant effect on biodiversity.
- 15.18 The proposals have been reviewed by the Council's Ecologist, who is satisfied with the application, subject to the inclusion of the recommended Condition 5. On this basis, the development is considered acceptable with regard to biodiversity, and in accordance with Local Plan policies 69 and 70.

Drainage and Flood Risk

- 15.19 The proposed site of the H17 Radar is located in Flood Zone 1 and is therefore at low risk from fluvial flooding. The site is, however at risk of localised surface water flooding following an extreme heavy rainfall event. The 1 in 100 year surface water map shows that flood depths in this scenario would be less than 300mm.
- 15.20 The proposed H17 Radar, associated cabin and generator will be constructed upon a plinth on an existing hard standing, which would raise the infrastructure 300mm above ground level. It would be served by an

existing surface water drainage network. There would be no increase in impermeable area as a result of the proposed development.

- 15.21 The proposals have been considered by Cambridgeshire County Council as the Lead Local Flood Authority and the City Drainage Officer, neither of whom raise objection to the proposals.
- 15.22 On the basis of this evaluation, officers are satisfied that the proposed development complies with Policy 32 of the Cambridge Local Plan 2018 with regard to drainage and flood risk.

Ground Conditions and Soils

- 15.23 The contaminated land assessment for the wider Airport site shows that the application site has a low risk of contamination. Construction activities would comprise relatively shallow excavations to construct foundations (at approximately 1.5m in depth). The potential for encountering contamination at the site is therefore viewed as low.
- 15.24 Appropriate construction techniques can be employed to ensure that there will be no pollution incidents resulting from the proposed work. An unexpected contamination protocol will be implemented if any visual or olfactory evidence of contamination is encountered during works (**Condition 6: Unexpected Contamination**). This will ensure that any additional risks are managed at the construction stage.
- 15.25 On the basis of this evaluation, officers are satisfied that the proposals are acceptable with regard to ground contamination.

Human Health

- 15.26 The health and wellbeing outcomes of members of the population living close to the Airport have been considered by the Applicant. The likely significant effects of the proposals on the surrounding population in terms of health are identified and reported in Chapter 11 of the ES. This chapter also incorporates the requirement for a Health Impact Assessment (HIA) under Policy 83 (Aviation Development) of the Cambridge Local Plan 2018, to demonstrate that the potential impacts on health and well-being have been considered at the planning and design stage.
- 15.27 Officers agree that the main potential impacts of the proposed H17 Radar on human health and well-being, as identified in the HIA section of the ES are:
- Annoyance, anxiety, and stress from noise and visual impact.
 - Annoyance and the potential for epileptic seizure arising from shadow flicker; and
 - Electromagnetic radiation.

- **Health Impacts from Noise**

- 15.28 There is a growing amount of evidence relating to the health impacts of noise, and on the relationship between the dose noise response (the reaction to increasing noise exposure) and health. Recent studies have identified a number of causal links between noise exposure and health impacts.
- 15.29 Where exposure to noise becomes noticeable or significant, this can result in changes to people's behaviour, attitude or other physiological responses. Should the level of noise exposure become unacceptable, the impacts can affect quality of life and amenity issues - potentially resulting in health and stress related problems and negative impacts on productivity and learning.
- 15.30 The submitted ES uses BS 4142 (Noise Assessments and Methods) to assess the significance of any noise impact/ effects. The main impacts likely to arise are on amenity and quality of life, which typically affects people in two ways: annoyance, and sleep disturbance.
- 15.31 Annoyance is when noise impact disturbs a person's daily life (for example, through interrupting a conversation or causing distraction whilst resting or sleep disturbance). Annoyance typically increases as noise exposure increases, though changes in the character of the noise tonal can also increase annoyance.
- 15.32 Sleep disturbance is one of the most common impacts described by people living with unacceptable levels of noise exposure as having potential for a significant impact on quality of life.
- 15.33 In terms of physical and psychological health impacts, these tend to be linked to hypertension and mental health. There is emerging research evidence on this matter for transport environmental noise, although there is currently nothing conclusive for industrial noise dose-response relationships.
- 15.34 The links between certain noise and hypertension are well established for transport noise sources, with research finding that exposure to noise events can place the body under stress, even if there is no conscious reaction to the noise. Links between noise exposure, annoyance and mental health have also been suggested, with studies identifying anxiety and depression as the most likely psychological symptoms. However, most of the research to date is inconclusive, suggesting that further research is needed in this area.
- 15.35 Whilst there are clearly negative health impacts arising from industrial type noise exposure, there is also a great deal of uncertainty about the precise quantification of these impacts and at what dose (noise levels and character) such health impacts are likely to occur. Health impacts are more likely to be primarily associated with late evening and night-time noise should they arise.

- 15.36 The noise impact assessment undertaken for the proposed H17 Radar as an industrial-type noise focuses on the quality of life/amenity effects (e.g. outcomes or changes to people's behaviour, attitude or other physiological responses) as a result of noise. This identifies that during the daytime, evening and night-time periods, the predicted H17 Radar noise rating levels at all receptors (inclusive of a rating penalty for tonal characteristics) are lower than the associated derived background sound levels.
- 15.37 The highest predicted external night-time radar noise rating levels at the closest receptors are all below a rating level of 35dB, and assuming a reduction of approximately 10 to 15dB across an openable window, this is likely to result in internal night-time noise levels of 20 to 25dB (as worst). The City Environmental Health Officer considers that these are low absolute noise levels even for noise that is industrial / commercial in nature.
- 15.38 Having regard to the comprehensive consultation advice offered by the Environmental Health Officer, officers are of the view that significant adverse health effects arising from noise associated with the propose H17 Radar are unlikely. Any residual adverse effects on sleep are considered unlikely to arise at such low levels of predicated external H17 Radar noise. It is therefore concluded that there is no evidence base to indicate that unacceptable health impacts will arise because of the relocation of the radar to the H17 Radar site.

- **Shadow Flicker**

- 15.39 Under certain combinations of geographical position and time of day, the sun may pass behind a radar structure and cast a shadow over neighbouring properties. When the radar rotates, the shadow flicks on and off. This effect is known as 'shadow flicker'.
- 15.40 In a room with a window facing the light source, such shadows can result in a momentary reduction in the intensity of the available natural light. The likelihood of this occurring and the duration of such an effect depends on various factors, including the direction of the property relative to the radar; the distance from the radar; the radar height and diameter; the time of year; the proportion of daylight hours in which the radar operations; the frequency of sunshine and cloudless skies and the prevailing wind direction.
- 15.41 Shadow flicker generally only occurs in relative proximity to sites, and those properties within 130 degrees either side of north, relative to the source can be affected at these latitudes in the UK. Long shadows are not cast on the southern side.
- 15.42 Good practice resource guidance in respect of shadow flicker is limited in the UK. An accepted industry standard in relation to wind turbines, which create similar shadow flicker effects, recommends that shadow flicker at

properties within 500m do not exceed 30 hours per year or 30 minutes per day (Northern Irish Planning Policy Statement 18 (Renewable Energy) (2009)).

- 15.43 For the purposes of the assessment of shadow flicker, the ES takes a precautionary approach, namely that the limit on the levels of acceptable shadow flicker effect should be a maximum of 30 hours per year or 30 minutes on the worst affected day. Therefore, the effect of shadow flicker will be considered significant if the maximum hours per year or number of minutes on the worst affected day are exceeded.
- 15.44 A model was constructed to quantify the potential effects of shadow flicker arising from the proposed H17 Radar. This takes a worst-case scenario and assumes full sunshine throughout the year. The potential receptors of the H17 Radar were confirmed through a desk-based assessment, review of satellite imagery, and site visit to verify the receptors. Receptors identified include the Mercedes Garage, The Quorum, Barnwell Business Units, Barnwell House, and four residential properties (considered as one receptor group), on Barnwell Road.
- 15.45 The modelling shows that the H17 Radar would cause shadow flicker to neighbouring buildings. However, the majority of flicker would be shielded by the adjacent hangar structure. The results of the modelling exercise identify that the maximum amount of shadow flicker during any one day occurs at a commercial property and is 18 minutes per day, for a maximum number of hours per year of 6 hours 39 minutes. The maximum amount of shadow flicker at the worst affected residential receptor located on Barnwell Road is for a maximum of 9 minutes per day with effects on 15 days a year, all in the early morning during winter, and for a maximum of 1hr 30 mins per year.
- 15.46 These levels of worst-case shadow flicker are all below the recognised levels of significance as identified in recognised industry good practice (30 hours per annum). The actual shadow flicker that will occur during these identified time periods will be dependent upon cloud cover (or lack of) and other factors. As a worst-case scenario, actual shadow flicker will be likely to be lower than that modelled – the ES identifies that once typical meteorological conditions are factored in, this impact is likely to be significantly reduced.
- 15.47 Modelling shows that there will be no significant effects of shadow flicker on any of the identified receptors. Given the distance of the proposed H17 Radar from sensitive receptors and the presence of intervening trees, vegetation and other structures that will affect how the shadow flicker is experienced, officers agree with the conclusions of the ES with regard to shadow flicker. Significant adverse effects arising from shadow flicker associated with the proposed H17 Radar are not considered significant for health due to the short duration, low exposure and small-scale effects.

- **Electro-Magnetic Radiation**

- 15.48 Electromagnetic radiation is a form of non-ionising radiation which can be dangerous for the human body and radio frequency fields (such as those from radar) can cause molecules in tissue to vibrate and generate heat. Possible health effects include the induction of eye cataracts and various physiological and thermoregulatory responses as body temperature increases.
- 15.49 The effects of electromagnetic radiation are well established and form the scientific basis for restricting occupational and public exposure to radio frequency fields. Whilst there are no specific regulations covering electromagnetic fields (EMFs), the Health and Safety at Work etc Act 1974 and the Management of Health and Safety at Work Regulations 1999 are applicable to the development proposals. These Regulations place clear duties on employers to provide adequate information, instruction, training and supervision for their employees, to undertake risk assessments and in general terms to safeguard so far as is reasonably practicable the health and safety of employees and others.
- 15.50 Local Plan Policy 84 (Telecommunications) criteria (e) requires applications for new masts to be accompanied by a statement that self certifies that, when operational, these guidelines will be met.
- 15.51 The approach taken in the ES to assessing potential health issues related to the radar and generation of electromagnetic fields (EMFs), associated with the proposed radar, is based on the principles established under Local Plan Policy 84 for telecommunication/mobile phone masts application. This policy requires the submission of an 'International Commission for Non-Ionising Radiation Protection (ICNIRP) certificate of compliance', demonstrating compliance with maximum recommended levels of EMF radiation for base stations. ICNIRP Guidelines on Limiting Exposure to Electromagnetic Fields are for the protection of humans exposed to radiofrequency electromagnetic fields (RF) in the range 100 kHz to 300 GHz.
- 15.52 The ES advises that, based on simulations, there is no risk at ground level to the public or Airport employees from electromagnetic radiation at any distance from the H17 Radar. The basis for this is that the radar antenna will be installed at the top of a tower 35m high, and that the radar beam forming area will be horizontal at this height. At antenna height (where the radiated power density is maximum), the minimum distances to be respected remain relatively low but must be taken into account, with no facilities or workplace within 24m at a similar height.
- 15.53 Officers further note that reference EMF / radiation levels (both in average and peak values) are never achieved/exceeded at ground level. Furthermore, given that the H17 Radar is to be located a minimum of 70m inside the Airport boundary, there will be no effects of radiation occurring outside of the Airport boundary, as the potential area of influence is restricted to 24m.

- 15.54 During the course of the application, Chapter 11 (Health) of the ES was updated. A Radar Safety Certification (Impact of Electromagnetic Radiation on Personnel Safety) report was provided as an Appendix. In addition, graphics are included in Chapter 11 showing the electromagnetic radiation field/beam and coverage pattern. The assessment reaffirms that there is no risk presented to the public or Airport employees from electromagnetic radiation.
- 15.55 The submitted Radar Safety Certification is a similar type of document to that required under Policy 84 and fulfils the same purpose. It provides details of the certified safety of the radar by the radar manufacturer (Thales), which demonstrates that ICNIRP has been met. It certifies that the STAR radar presents no risk at ground level for personnel, workers or public, at any distance from radar. This is a radar equivalent to a declaration for telecommunications development.
- 15.56 In terms of the potential for cumulative effects due to electromagnetic radiation the ES states that notwithstanding that there is no receptor within the zone where electromagnetic radiation will occur (i.e. within 24m at the height of the beam forming area), there is also no other infrastructure (for example Airport infrastructure, electricity pylons etc), which emits electromagnetic radiation which is located within that zone. Officers agree with the conclusions of the ES – that there will be no cumulative effects relating to electromagnetic radiation.
- 15.57 The Radar Safety Certification demonstrate that EMF generation by the proposed H17 Radar is within the standards set by international legislation, and that any EMFs associated with the radar are very unlikely to be a health risk to Airport personnel, other employees off-site at Barnwell Drive or the general public in the area. On this basis, officers are satisfied that the proposals are acceptable with regard to electromagnetic radiation.

Impact on Human Health – Summary

- 15.58 On the basis of the above assessment, officers are satisfied that the application proposals comply with Local Plan Policies 83 and 84 with regard to impact on human health.

Lighting

- 15.59 The effects of the proposals from artificial lighting perspectives are considered under the Landscape and Visual Chapter of the ES (Potential Night-time Effects and Lighting). The application submission identifies that the proposed H17 Radar will be illuminated in the same way as the existing H16 Radar (to include two red obstacle lights on the top of the H17 Radar, to ensure no collision with aircraft).

- 15.60 Additional pedestrian lighting would be located on the stair of the H17 Radar tower which would only be used 'on demand' in exceptional circumstances. Low intensity green LED lights form part of the additional pedestrian lights. It is anticipated that access to the H17 Radar would be required once every three months and would be carried out during daylight hours. Any access after dark would be for fault rectification only and would be unlikely to occur after 1800hrs due to a lack of night shift cover.
- 15.61 The Environmental Health Officer has reviewed the impacts in terms of artificial lighting and agrees with the assessment of artificial lighting impacts on human receptors, and the conclusion that under normal operating circumstances effects from the lighting would be negligible.
- 15.62 Due to the distance of approximately 200m to the nearest residential receptor, it is not envisaged that there would be any unacceptable intrusive artificial lighting spill or impacts on quality of life/amenity as a result of the normal operating lighting conditions detailed, which are very low level (eg the use of red obstacle lights on top of the H17 Radar).
- 15.63 On the basis of the above evaluation, the proposals are considered acceptable with regard to artificial lighting.

Noise

- 15.64 The existing H16 Radar when in full operation has given rise to local noise complaints both to the Applicant and the Commercial Environmental Health service of the Council.
- 15.65 Given local concern about the radar noise emissions from the Airport and the complexity of the nature and character of the noise from the H16 Radar (and therefore potentially the proposed H17 Radar), the EQG / Environmental Health service of the Council engaged the services of a specialist acoustic consultant (Three Spires Acoustics Ltd) to independently assess and advise on the potential noise impacts of both the existing H16 Radar and proposed H17 Radar.
- 15.66 Officers note the third-party objections to the proposed H17 Radar which relate to concerns regarding unacceptable noise impacts. This includes the submission of independent reports by MAS Environmental (an acoustic consultancy acting on behalf of some objectors). The reports challenge the acceptability/robustness of the application submission, and the associated noise impact assessment. These matters are considered in detail below.

Noise Impact Assessment Methodology

- 15.67 Chapter 14 (Noise) of the ES reports the assessment of likely effects of the proposals on the surrounding area in terms of noise and vibration arising from the demolition proposals, new construction work and the

operational phases. Where appropriate, it also identifies measures to prevent, minimise or control likely adverse effects arising from noise.

- 15.68 In the specific case of the application proposals, officers consider that BS4142 (Noise Assessments and Methods) is the most appropriate 'significance of noise' impact assessment methodology for the proposed H17 Radar, given that the radar is an industrial noise source.
- 15.69 BS 4142 describes the methodology for rating and assessing sound of an industrial and/or commercial nature - existing, proposed, new, modified or additional source(s). The methods described use outdoor sound levels to assess the likely effects of sound on people who might be inside or outside premises used for residential purposes upon which sound is incident.
- 15.70 The standard describes the recommended methodology to measure and determine ambient, background and residual sound levels, and the rating levels of industrial/commercial sound. BS 4142 requires consideration of the level of uncertainty in the data and associated calculations.
- 15.71 BS 4142 refers to the sound produced by an assessed source at a sensitive receptor (e.g. outside a façade of a residential building) as 'specific' sound, in this case the proposed main source of noise the radar motor cabin enclosure. The specific sound level (radar cabin noise) is determined by calculating or measuring the equivalent continuous A-weighted sound pressure level of the source over the assessment time period 'T' (LAeq,T). The full BS 4142 assessments for the day, evening and night-time period for various receptors are included in Appendix A14.10 of the ES.
- 15.72 Having reviewed in detail the noise impact assessments which have been undertaken by the Applicant, and by the Councils' own noise consultant, Three Spires Acoustics Ltd, the Council's own Environmental Health Officer (EHO) is satisfied that the long-term operational noise associated with the proposed H17 Radar has been thoroughly assessed within the submitted ES and that the assessment complies with EIA Regulations.
- 15.73 The ES noise impact assessment has been undertaken substantively in accordance with industry noise impact assessment methodologies/standards with acceptable professional judgement being applied as necessary and allows an informed decision/judgement to be made about the acceptability of the proposals. The Council's EHO is also satisfied that any uncertainty in the data and the associated calculations in the ES assessment has been adequately considered. The Council's EHO has also confirmed that the ES Noise Chapter derived background sound levels are representative and typical of the given circumstances to allow a robust noise impact assessment to be undertaken.
- 15.74 The EHO agrees that reasonable worst-case assumptions have been adopted for the noise modelling inputs, such as hard ground surface

attenuation, downwind propagation to all receptors at all times, and 'worst-case' noise source directional orientation of the radar cabin. All these factors combined have allowed for a 'worst case scenario' predictive approach for radar noise rating levels at the residential receptors considered.

Demolition/Construction Noise Impacts

- 15.75 There is the potential for adverse noise and vibration effects during both the demolition/dismantling of the H16 Radar and AR15 Radar, and the construction of the proposed H17 Radar.
- 15.76 The ES advises that the appointed construction contractor will be required to comply with the provisions of a Construction Environment Management Plan (CEMP) which includes details of construction traffic access and management, working hours, temporary hoarding, and waste management.
- 15.77 In addition, the CEMP includes recommendations that represent best practicable means (BPM) which will be applied during construction works at all times to minimise noise (including vibration) at neighbouring residential properties and other sensitive receptors. In accordance with the advice offered by the Environmental Health Officer, an appropriate condition is recommended, to ensure compliance with the CEMP **(Condition 7: Construction Environmental Management Plan and Working Hours)**.
- 15.78 Given the relatively low impact nature of demolition/construction and short duration of the works involved, officers are satisfied that there should be no unacceptable adverse noise impacts during the construction and demolition phase, subject to recommended planning condition 7.

Operational Noise Impacts

- 15.79 The main potential operational noise sources that make up the proposed development include the following:
- H17 Radar Motor enclosure cabin.
 - H17 Back-up diesel generator (ground height).
 - Four heat exchangers outside the H17 Radar electronic cabin.
 - Four air conditioning units inside the H17 Radar electronic cabin.
 - Electronic cooling fans inside the electronic cabin.
- 15.80 The dominant source of noise is in relation to the H17 motor enclosure cabin. This noise source has been the main focus of the noise impact assessment. With regard to the other noise sources, due to a combination of physical shielding, adequate distance separation and hours of use, no unacceptable adverse noise impact is considered to arise.

15.81 The assessment of noise effects from the proposed H17 Radar has been informed by the development of a noise model. The robustness of the model is benefited by the fact that the motor enclosure cabin for the existing H16 Radar will be retained for use as the proposed H17 Radar, and therefore the sound emission characteristics will be very similar and informed by measurements undertaken whilst in the H16 Radar location.

15.82 The development of the noise model, and in particular the sound emissions from the motor enclosure cabin, have been informed by measurements of sound emissions from the operation of the actual H16 Radar, both in close proximity to the radar and at locations within the community. The measurements have been used to inform the sound source quantification.

15.83 The propagation of sound levels arising from the operation of the H17 Radar has been determined through noise modelling. This uses a calculation method which is based on an acceptable industry standard. The calculation results are considered in the ES to be worst-case as they assume downwind propagation, which in reality would not occur at all times due to changes in wind direction.

15.84 The noise model used incorporates a recognised industry standard ISO 9613 (Acoustics – Attenuation of sound during propagation outdoors) which is widely used for noise impact assessments and allows for precise acoustic modelling of particular noise sources to predict noise emissions levels at receptors from proposed sources of noise such as the H17 Radar.

15.85 The EHO agrees with the noise impact assessment methodology with regard to operational noise, and that reasonable worst-case assumptions have been adopted for the noise modelling inputs. The predictive radar noise modelling which has been undertaken is considered robust and officers have a high degree of confidence in the predicted noise rating levels at receptors. This position is also supported by the Council's acoustic consultant, Three Spires Acoustics Ltd.

- **Three Spires Acoustic Report (Council's Acoustic Consultant)**

15.86 In their report to the City Council Environmental Quality and Growth team, Three Spires Acoustics provide an opinion on the proposed relocation of the radar to the H17 location and its likely impact. This refers to a technical assessment which included background noise surveys undertaken at a number of locations around the H17 site, with the application of results to noise measurements taken at the existing H16 radar site.

15.87 The technical assessment found that when the acoustic information modelled was compared against the relevant section of the GCSPS Sustainable Design and Construction: Supplementary Planning Document (SPD, 2020) (Table 3.11: New Noise Generating Development - External

Noise Standards for non-anonymous noise), the daytime and evening outcomes indicates a 'no significance risk' and a 'no observable effect' level. The night-time BS4142 outcome results in 'minimal significance of risk' and within the range of 'no observable effect' to the 'lowest observable adverse effect level'.

- 15.88 Based on this assessment, the Three Spires Report concludes that the relocation of the radar to the H17 site is unlikely to result in any unacceptable noise impact to the closest residential receptors in Peverel Road and Barnes Close. For properties further away such as those on the southern side of Sunnyside and The Westering, the operational noise impact will be even lower due to the greater separation distance involved. Unacceptable adverse noise impact is not envisaged at any of these locations.

MAS Environmental Reports (Objectors' Acoustic Consultant)

Noise Impact Assessment Methodology

- 15.89 MAS Environmental, acting for some of the objectors, does not agree with the noise impact assessment that has been undertaken, based on what is considered non-compliance with various noise measurement methodologies such as British Standards, and is of the view that at certain receptors in the area behind 9 – 12 Barnes Close (the nearest residential receptors identified in the ES), such as the blocks 13 to 18 and 1 to 4 Barnes Close, representative background noise levels are likely to be around 30dB.
- 15.90 Such level of 30dB would be 6dB lower than the levels considered by the Applicant and Councils' noise consultant to be representative. If used, this would result in greater significance of noise impact. For example, at the most critical time of day night-time with the highest predicted BS 4142 rating levels of 34dB (inclusive of a +2dB correction for tonal character) this would result in a BS 4142 margin by which the rating level of the specific sound source exceeds the existing representative background sound level of +4dB (e.g. less likely it is that the specific sound source will have an adverse impact or a significant adverse impact).
- 15.91 In terms of BS 4142, this would still be below an adverse impact of +5dB (depending on context). However, in terms of the GCSP-SPD (2020) this would be considered a 'Medium' Noise Significance Risk, with a Noise Significance of Effect: LOAEL to SOEL which is a rating level of > 0 & $\leq +5$. For such a Medium Noise Significance Risk, the GCSP SPD (2020) states that: *'this indicates that the proposed NGD is less likely to be acceptable from a noise perspective and will be context dependent, i.e. extent and effect on noise sensitive receivers (externally and internally). Compliance within this range is typically only applicable to non-sensitive sites or where there are overriding other reasons why development should be considered. It will typically be necessary for the applicant to confirm how adverse impacts from the NGD will be mitigated and minimised. It is*

less likely that planning consent will be granted. Acceptable only if there are overriding economic or social reasons for development to proceed.'

- 15.92 The Council's EHO does not agree with the MAS Environmental position on background noise levels, which appears to be based on a small data set. It is also noted that operational noise at properties further away are likely to be lower due to increased separation distances. Officers are of the considered view that the background noise levels as used in the ES are representative. This has been confirmed by the Three Spires Noise Assessment background noise monitoring close to Barnes Close taken over a one-week duration.
- 15.93 Officers also note that context is an important consideration in reaching the overall significance of noise impact outcome. As advocated in BS4142 (Noise Assessments and Methods), NPPG - Noise and Para. 3.6.105 of the GCSP-SPD (2020), when considering the overall impacts/effects of noise, due regard should be given to the context in which the noise occurs, which depends on how various factors combine in any particular situation.
- 15.94 The BS41424 difference between the rating level and the background sound level only provides an indication of the impact; context must be considered before any conclusions can be drawn about the magnitude of any impacts. All pertinent contextual considerations should be taken into account, including the following:
- The absolute level of the sound / noise;
 - The character and level of the residual sound compared to the character and level of the specific sound;
 - For a new noise making source, how the noise from it relates to the existing sound environment.
- 15.95 For the night-time period (2300 to 0700hrs), which is considered the most sensitive time of day, context is paramount in reaching an overall conclusion on effects. BS 4142 (Noise Assessments and Methods) states that '*absolute levels may be as, or more, important than relative outcomes where background and rating levels are low*'. The relatively low absolute levels of the sound/noise at receptor facades is a key factor in this mixed commercial/industrial urban area adjacent to an operational Airport. In this case the highest predicted BS 4142 rating level of 34dB (inclusive of a +2dB correction for tonal character) at the nearest residential receptors identified in the ES - 9 to 12 Barnes Close is considered a very low absolute level for the area. At all other receptors the levels are likely to be lower due to further distance separation from the proposed H17 Radar.
- 15.96 In terms of assessing potential internal noise impacts, the acoustic performance of receptor façades can also be considered. Assuming a partially opened window providing either a 10 dB (conservative) or 15 dB (relaxed for urban type areas) attenuation from outside to inside, having regard to predicted worst case external façade noise rating level of 34dB (inclusive of a tonal correction of +2dB), the calculated internal noise

levels would be below 24 to 19dB in all instances, which are significantly below the BS8233:2014 'Guidance on Sound Insulation and Noise Reduction for Buildings' desirable internal noise criterion of 30 dB LAeq,T and the relaxed criterion of 35 dB LAeq, T for a bedroom at night. The internal noise levels would be even further below the BS 8233 (2014) criterion if consideration was given to closed windows, or the average time that windows are open / closed.

- 15.97 In summary, officers consider that the predicted night-time internal noise levels at the nearest receptors are extremely low, and thus unlikely to result in any unacceptable adverse impacts when having regard to industry standards and best practice technical guidance recommended acceptable internal noise standards. The noise levels are shown in the main to be significantly below desirable internal noise levels of 30 dB for bedrooms at night, as recommended in World Health Organisation community guidelines.
- 15.98 The third-party concerns are noted which seek to challenge the methodology upon which the noise assessment has been undertaken and state that standards such as BS 8233:2014 (Sound Insulation and Noise Reduction) are not directly applicable to the application proposals and industrial noise sources such as the radar noise. However, given that the predicted noise levels are significantly below recommended internal levels, officers are of the view that unacceptable noise adverse impacts are unlikely to arise.
- 15.99 The EHO agrees with the conclusion of the ES - that operational noise levels associated with the proposed H17 Radar will not give rise to any significant adverse noise impacts/effects on the health and quality of life/amenity both externally and internally at residential receptors.

Duty to Minimise Noise Emissions

- 15.100 MAS Environmental indicates that under the NPPF and Local Plan Policy 35, there is an absolute duty to minimise noise emission adverse impacts from new noise sources and are of the view that this has not been achieved in this case.
- 15.101 With regard to noise, the NPPF (paragraph 185) states that: '*Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:*
- a) *mitigate and reduce to a minimum potential adverse impacts resulting from noise from new development – and avoid noise giving rise to significant adverse impacts on health and the quality of life.*

- 15.102 In this case, the EHO concludes that operational noise levels are likely to be below the Lowest Observed Adverse Effect Level (LOAEL - level above which adverse effects on health and quality of life can be detected), at all times. Given this position, national planning practice guidance on noise: *'Noise Exposure Hierarchy Table'*, states that the likely response is that the noise may be *'present and not note intrusive'* with the example outcome that *'Noise can be heard, but does not cause any change in behaviour, attitude or other physiological response. Can slightly affect the acoustic character of the area but not such that there is a change in the quality of life'* with the advisory action of *'no specific measures required'*.
- 15.103 Only when the noise impact/response is at, or above LOAEL and between SOAEL does the advisory action become *'mitigate and reduce to a minimum'*. This position is also consistent with the government's *'Noise Policy Statement for England (NPSE), March 2010'* which also states that *'The second aim of the NPSE refers to the situation where the impact lies somewhere between LOAEL and SOAEL. It requires that all reasonable steps should be taken to mitigate and minimise adverse effects on health and quality of life while also taking into account the guiding principles of sustainable development (paragraph 1.8). This does not mean that such adverse effects cannot occur.'*
- 15.104 Officers note that following a request for further information on the effectiveness of the proposed embedded noise mitigation and consideration of additional noise mitigation measures to improve and reduce radar cabin noise breakout/generation (to make the proposals more acceptable in terms of operational noise impacts), the Applicant provided additional information in November 2021 (*'Response: Planning Consultation Response. Planning Ref. 21/03224/FUL - November 2021, report No J20- 12041B/1/F1: Noise Consultants Ltd'*).
- 15.105 The November 2021 submission includes a *'Hoare Lea Report (November 2021, Appendix A5)'* which reports on the acoustic improvements / reductions achieved pre-works and post-works to the proposed H17 radar cabin noise mitigation scenarios including the overall performance and workmanship. In considering the mitigation measures implemented at the H16 Radar to date (and which will be inherent in the design of the proposed H17 Radar), Hoare Lea LLP conclude that *"...these measures represent the limit of what can be done within the current height restrictions and without significant redesign of the radar tower."*
- 15.106 The November 2021 submission states that further mitigation, through redesign of the radar, would risk undermining the manufacturer's warranty, and proposes no further mitigation actions. It is, however, stated that the relocation of the radar will present the opportunity, when the cabin is at ground level, to refit the acoustic insulating material and other seals that were installed with the cabin in situ in January and April/May 2021, which could offer some further slight improvements in acoustic performance.

15.107 Having regard to the low absolute level of radar noise predictions at all receptors and the fact that the noise rating levels at all assessed residential receptors are below the Lowest Observed Adverse Effect Level (LOAEL), the EHO does not envisage any unacceptable adverse noise impacts and the inherent embedded noise mitigation as detailed is considered acceptable. In terms of national noise policy, the NPSE or national or local planning policy, it is also the EHO view that there is no justification for requiring any additional noise mitigation to that proposed, and that it would be neither necessary nor reasonable to do so.

15.108 A bespoke condition, has, however, been recommended to ensure the noise insulation and mitigation attenuation measures to the upper H17 Radar motor cabin enclosure are fully implemented and retained at all times (**Condition 9: H17 Radar Noise Insulation Condition**).

Significance of Noise Impact – Summary

15.109 The procedure contained in BS 4142 *Noise Assessments and Methods) gives an indication of the degree of significance of any potential impact of sound by determining the margin by which the rating level of the specific sound source exceeds the existing representative background sound level, examining also the context in which the sound occurs or will occur. Where the calculated noise rating level is below the derived background sound level, a negative BS 4142 value will occur. The greater the negative value, the less likely it is that the specific sound source will have an adverse impact or significant adverse impact. There is a decrease in the significance as the negative value (-) difference increases.

15.110 The standard states (with emphasis):

- A difference of around **+10 dB or more** is likely to be an **indication of a significant adverse impact**, depending on the context.
- A difference of around **+5 dB** is likely to be an **indication of an adverse impact**, depending on the context.
- The lower the rating level is relative to the measured background sound level (**+4dB and lower**), **the less likely it is that the specific sound source will have an adverse impact or a significant adverse impact**.
- Where the rating level does not exceed the background sound level (**0dB and below i.e. a minus level -1 to -5 to -10 and downwards**), this is an indication of the specific sound source having **a low impact, depending on the context**.

15.111 In summary the significance of noise impact arising from the proposed H17 Radar is considered as follows:

- **Day Assessment Period (0700 – 1800) – external in amenity areas/gardens:**

- 15.112 Calculated noise levels are more than 5 dB below the background sound level (considered below LOAEL – level above which adverse effects on health and quality of life can be detected) at all 55 receptors, and more than 10 dB below the background sound level (considered No Observed Adverse Effect Level (NOAEL) at all but six receptors (R2, R3, R4, R5, R6 and R16).
- 15.113 BS4142 margins / differences range from -7.0 to -16.8 dB in the Barnes Close, Barnwell Road / Peverel Road area and -9.3 to -24.1dB in the Sunnyside/ The Westering / Mansfield Way area. **In terms of BS4142 these are considered indicative of very low impacts.** There is a decrease in the significance of impact as the – (negative) value difference increases (is higher numerically).
- 15.114 Further consideration of operational noise effects has been informed by the New Noise Generating Development (NGD) - External Noise Standards for 'non- anonymous noise' contained in the GCSP Sustainable Design and Construction SPD 2020.
- 15.115 **In terms of the GCSP SPD (2020) the outcome is a Noise Significance Risk: 'None' to 'Minimal' with a Noise Significance of Effect: from 'NOEL (≤ -10 dB) to LOAEL (> -10 & ≤ -5)' for all receptors.** For these outcomes, the SPD (2020) planning advice is that the proposed development is likely acceptable from a noise perspective. The SPD goes on to advise that the LPA will seek this level of compliance in most noise sensitive areas and / or where there is a requirement to mitigate creeping background effects.
- 15.116 **In terms of Planning Practice Guidance (PPG) 'Noise Exposure Hierarchy Table', the likely response is that the noise may be 'present and not note intrusive'** with the example outcome that *'Noise can be heard, but does not cause any change in behaviour, attitude or other physiological response. Can slightly affect the acoustic character of the area but not such that there is a change in the quality of life'*.
- **Evening Assessment Period (1900 – 2300) – external in amenity areas/gardens:**
- 15.117 Calculated noise levels are more than 5 dB below the background sound level (considered below LOAEL) at all 55 receptors but three (R2, R3 and R4).
- 15.118 BS4142 margins / differences range from -4.0 to -16.8 dB in the Barnes Close, Barnwell Road / Peverel Road area and -6.3 to -17.1 dB in the Sunnyside/ The Westering / Mansfield Way area.
- 15.119 **In terms of the GCSP-SPD (2020), all but three receptors are in the 'None' or 'Minimal' Noise Significance Risk, with the remaining in the 'Low' category.**

15.120 For 'Low', the Design and Construction SPD (2020) advises that: *'this indicates that the proposed NGD may be acceptable from a noise perspective but will be more context dependent, i.e. extent and effect on noise sensitive receivers (externally and internally). Compliance within this range is more applicable to less sensitive sites or where there is no requirement to mitigate creeping background effects.'*

- **Night Assessment Period (2300-0700) – external at residential façades:**

15.121 Calculated noise levels are below the background sound level (considered below LOAEL) at all 55 receptors assessed.

15.122 BS4142 margins / differences range from -2.0 to -3.4 dB in the Barnes Close, Barnwell Road / Peverel Road area and -2 to -12.5 dB in the Sunnyside/ The Westering / Mansfield Way area.

15.123 **In terms of the GCSP-SPD (2020), all but three receptors are in the 'None' or 'Minimal' Noise Significance Risk, with the remaining in the 'Low' category** with a Noise Significance of Effect: NOEL to LOAEL which is > -5 & ≤ 0) for all of the receptors.

15.124 For 'Low', the GCSP SPD (2020) states *'this indicates that the proposed NGD may be acceptable from a noise perspective but will be more context dependent, i.e. extent and effect on noise sensitive receivers (externally and internally). Compliance within this range is more applicable to less sensitive sites or where there is no requirement to mitigate creeping background effects.'*

15.125 The final overall significance of sound of an industrial and/or commercial nature depends upon both the margin by which the rating level of the specific sound source exceeds the existing representative background sound levels and the context in which the sound occurs or will occur.

15.126 The predicted radar noise rating levels (inclusive of a correction of +2dB for tonal character) at receptors are considered low in absolute noise level terms during the day/evening (**ranges from 19 to 36 dB externally in gardens/amenity areas**) and night- time (**ranges for 20 to 34 dB externally at facades**) periods.

15.127 **In terms of national planning guidance on noise, it is concluded that no unacceptable adverse effect is likely to arise, as the noise exposure / levels as predicted at receptors and as assessed are considered to be below the 'Lowest Observed Adverse Effect Level (LOAEL)' at all times.**

15.128 Predicted internal noise levels at the nearest receptors at night-time range from 10 to 24dB under a worst-case prediction scenario just assuming a 10 dB reduction across a partially open window (external to internal). These levels are considered extremely low and are unlikely to result in any

unacceptable adverse impact when having regard to industry standards and best practice technical guidance recommended acceptable internal noise standards. The noise levels are shown in the main to be significantly below BS 8233 Sound Insulation and Noise Reduction (2014) desirable internal noise levels of 30 for bedrooms at night, as recommended in World Health Organisation community guidelines.

15.129 Although it could be argued that standards such as BS 8233 (2014) are not directly applicable to the application proposals and industrial noise sources such as the proposed H17 Radar noise, the levels as stated are significantly below recommended internal levels and give sufficient comfort that unacceptable adverse impacts are unlikely to arise.

15.130 In addition, having regard to the Three Spires Acoustics noise assessment, officers are confident that any radar noise, including any tonal character is unlikely to be audible internally or result in any unacceptable adverse impact having regard to recommended internal noise levels and Noise Rating (NR) curves. The character of the area around the Airport is mixed urban residential / industrial and these noise levels are not considered unacceptable in the existing prevailing acoustic environment.

Noise Issues - Conclusion

15.131 The noise impact of the proposed H17 Radar has been comprehensively assessed, and in terms of the most relevant impact assessment standard for industrial / commercial noise (BS 4142:2014 Methods for Rating and Assessing Industrial and Commercial Sound), the overall significance of noise impact is predicted to be indicative of a '*low to very low*' impact, with the radar noise below the existing representative background sound levels at all relevant closest residential receptors.

15.132 The predicted radar noise rating levels (inclusive of a correction of +2dB for tonal character) at receptors are considered low in absolute noise level terms during the day/evening (ranges from 19 to 36 dB externally in gardens/amenity areas) and during night-time (ranges for 20 to 34 dB externally at facades) periods.

15.133 In terms of national planning guidance on noise it is concluded that no unacceptable adverse effect is likely to arise as the noise exposure / levels as predicted at receptors and as assessed are considered to be below the Lowest Observed Adverse Effect Level (LOAEL – level above which adverse effects on health and quality of life can be detected) at all times.

15.134 Predicted internal noise levels at the nearest receptors at night-time range from 10 to 24dB under a worst-case prediction scenario assuming a 10 dB reduction across a partially open window (external to internal). Based on the Three Spires noise assessment officers are confident that any radar noise, including any tonal character is unlikely to be audible internally or result in any unacceptable adverse impact having regard to recommended

internal noise levels and noise rating curves. The character of the area around the Airport is mixed urban residential / industrial meaning these noise levels are not considered unacceptable in the existing prevailing acoustic environment.

- 15.135 Based on national planning guidance it is concluded that the H17 Radar noise may just be audible externally at times but this should not cause any change in behaviour, attitude or other physiological responses to human life. The radar noise may slightly affect the acoustic character of an area but not to the extent that there is a change in quality of life/amenity. At this noise exposure level national planning guidance advises there is no additional specific measures required to manage the proposed (radar) noise in the prevailing acoustic environment. This conclusion is supported and confirmed by the Council's own noise consultant Three Spires Acoustics Ltd.
- 15.136 On the basis of the above evaluation, officers are of the view that the proposed development is acceptable with regard to noise and is in accordance with NPPF paragraphs 174 e) and 185 a) and Cambridge Local Plan 2018 policies 35: Protection of human health and quality of life from noise and vibration and 83: Aviation Development.
- 15.137 To ensure that the radar noise complies with the predicted noise rating levels as detailed in the ES and to protect the quality of life/amenity a number of bespoke operational noise conditions are recommended: **Condition 9: H17 Radar Noise Insultation; Condition 10: H17 Radar – Permitted Operational Sound Levels; Condition 11: H17 Radar Operational Sound Verification Assessment Report; Condition 12: Non-Compliance with Radar Sound Verification Assessment Noise Limits.** These operational noise conditions have been formulated and agreed in consultation with the Applicants' acoustic consultant and are considered highly precautionary. They have been agreed by the Applicant.

Other Environmental Issues – Conclusion

- 15.138 The environmental implications of the Application have been comprehensively assessed through the ES and other supporting documentation and considered fully by officers.
- 15.139 The environmental impacts with regard to air quality, odour and dust; archaeology and the historic environment; biodiversity; ground conditions and soils; human health; drainage and flood risk, lighting and noise are all considered to be acceptable in planning terms, and in accordance with both the Cambridge Local Plan and the NPPF subject to the inclusion of the recommended planning conditions as described above.

16.0 Traffic and Transport

16.1 The proposed development involves the erection of a new radar and removal of existing radars elsewhere on the Airport. The operation of the new radar will not generate any traffic, except for occasional maintenance activities akin to existing operations. It will not therefore have any effect on the nature or volume of operational traffic generated by the Airport on a day-to-day basis. On this basis, officers are satisfied that the proposed development complies with Policy 81 of the Local Plan.

17.0 **Impact on Residential Amenity**

17.1 In considering the impact of the development proposals on residential amenity, regard should be had to Policy 83 of the Cambridge Local Plan, which advises that aviation development at Cambridge Airport will only be supported where it will not have an adverse impact on residential amenity.

17.2 The impact of the proposed H17 Radar on residential amenity in terms of health and noise has been fully assessed and reported in the ES (as updated). This includes the submission of a Health Impact Assessment, as requirement by Policy 83.

17.3 The third-party concerns regarding the impacts of the development proposals on existing residential amenity are noted. The impacts arising from the construction and operational phases of the development (including anticipated noise from the proposed H17 Radar) has been assessed as part of the updated ES.

17.4 Officers are of the view that the impact of the proposed H17 Radar will not compromise existing residential amenity to such an extent as to warrant the refusal of the application on these grounds. This is nevertheless subject to the inclusion of the recommended planning conditions relating to the construction process and the control of noise.

Impact on Residential Amenity – Conclusion

17.5 On the basis of the above evaluation, and subject to the inclusion of the recommended appropriate conditions as described, the Application is considered acceptable with regard to the impacts on residential amenity. The proposals are therefore in accordance with policies 35 and 83 of the Cambridge Local Plan and the NPPF.

18.0 **Cumulative Impacts**

18.1 The cumulative effects of the development in combination with other planned major development in proximity to the application site have been considered by the Applicant, using a methodology which was agreed in advance with officers. The results of the assessment are reported in Chapter 19 – Cumulative, In-combination and Interactive Effects of the updated ES.

18.2 The assessment finds that the major developments within the study area are unlikely to result in significant adverse cumulative effects when assessed in combination with these application proposals. Although construction works on developments in the study area (including the LNCH development site) may overlap with the proposed development, the minor nature of the construction activities associated with the application proposals have negligible potential for cumulative effects and therefore no further assessment is/was required.

18.3 Officers have considered the cumulative impact assessment and agree with the conclusions reported in the updated ES, that no significant cumulative impacts are likely to arise, assuming the other development opportunities envisaged are largely delivered as presently anticipated.

19.0 Third Party Issues

19.1 The third-party representations received during consultation of the Application raised a number of issues. These have been addressed within this report, as summarized in the table below.

Issue	Officer Response/Report Section
Principle of Development	The 'Principle of Development' section (Section 12 of report) deals with the principle of the proposed development, which has been considered and found to be acceptable in planning terms, given the essential function of ensuring the continued safety of the Airport's operations.
Choice of Site	The Section 'Consideration of Alternative Sites' (Paras. 10.19 – 10.34) summarises the assessment made for alternative sites, against criteria associated with safety and operational requirements; noise; landscape and visual impact; natural and historic environment; shadow flicker and other environmental aspects.
Design of Radar	The design of the proposed radar is described in Section 13 (Design and Layout) which notes that the proposed H17 Radar is broadly constrained by technical requirements.

Visual Impact	The 'Impact on Site and Surroundings' Section (Section 14) deals with landscape and visual impact assessment of the proposals, concluding that the proposed H17 Radar would generate significant adverse landscape and visual effects on the recreational users of Coldham's Common receptor group and the Common's landscape character.
Impact on existing residential amenity	<p>Different sections of the report deal with impact on residential amenity. Specific matters relating to impacts on air quality, human health and noise are dealt with as part of the environmental issues section (Section 15).</p> <p>Section 18 deals specifically with Impact on Residential Amenity, concluding the development would not compromise existing residential amenity so as to warrant the refusal of the application, subject to recommended conditions.</p>
Impact on local roads	Section 17 'Traffic and Transport' deals with the impact on local roads, concluding the proposed development complies with Policy 81 of the Cambridge Local Plan.
Impact on greenbelt	The Impact on Site and Surroundings Section (Section 14) recognizes in Para 14.10 that the Green Belt forms part of a green corridor from the eastern edge of the Airport to Coldham's Common.
Impact on wildlife	The Biodiversity Section (from Paragraph 16.13) deals with impact on wildlife, concluding that given the characteristics of the existing site, no significant ecological impacts from the proposed development are predicted.
Process for submitting representations	The process for submitting representations was in accordance with the Cambridge City Statement of Community Involvement, and related legislation.
Documentation not available to view online	The documentation relating with the application has been publicized in accordance with the Cambridge City

	Statement of Community Involvement, and related legislation.
Impact on house prices	This not a material consideration and has not been considered in this report. The updated ES assesses wider socioeconomic matters, such as employment.

Table: Summary of Third-Party Issues

20.0 Other Issues

Statutory Noise Nuisance

- 20.1 The statutory nuisance regime is a basic safeguarding standard intended to deal with the most excessive emissions and impacts. The operational noise from the existing H16 Radar has been investigated by officers from the City Council Environmental Quality and Growth team, as a potential statutory noise nuisance under the Environmental Protection Act 1990. This is a separate matter which is dealt with under a different legislative framework to that under which this planning application must be assessed.
- 20.2 The planning regime is proactive with the overarching aim of identifying challenges and unacceptable adverse impacts in advance and resolving and preventing them arising in the first place. The statutory nuisance regime is primarily reactive.
- 20.3 It is important to note that whilst statutory nuisance type issues such as noise can be considered alongside a broad range of factors that can impact on the pleasantness of a place, the planning policy standard of protection is safeguarding health and local quality of life / amenity which is usually a higher standard than for statutory nuisance. Statutory nuisance does not equate to loss of quality of life / amenity. Significant loss of amenity will often occur at lower levels of noise, than would constitute a statutory nuisance.
- 20.4 It is therefore important to consider properly, loss of amenity and impacts on quality of life from noise emissions in the planning process in its wider context and not from the narrow perspective of potential future statutory nuisance. The nuisance planning regimes have different aims and objectives and should not influence planning decisions. Ultimately the grant of planning permission does not authorise the commission of a statutory nuisance.

21.0 Planning Balance

21.1 The Planning and Compulsory Purchase Act 2004 S38 (6) directs that planning decisions must be taken in accordance with the development plan, unless material considerations indicate otherwise. The NPPF represents current government planning policy and is a material planning consideration which must be taken into account where it is relevant to a planning application. This includes the presumption in favour of sustainable development, which requires a decision-taker approving development proposals which accord with an up-to-date development plan without delay.

21.2 The NPPF lists the three dimensions to sustainable development as: (i) economic, (ii) social and (iii) environmental. These dimensions are interdependent and need to be pursued in mutually supportive ways to achieve sustainable development. The benefits and dis-benefits of the development proposals have been evaluated against the objectives of the NPPF and the presumption in favour of sustainable development, as summarised below.

- **Economic Role**

21.3 NPPF places a clear emphasis on the importance of economic growth and delivering economic benefits as a key component of sustainable development. A number of direct and indirect economic benefits will be generated from the construction and operational phases of the proposed H17 Radar.

21.4 The proposals would bring direct economic benefits, by enabling the continued operation of Marshall's MRO operations, as well as other important roles played by the Airport, including as a base for private and commercial business flying – the application supporting documentation confirms that the Applicant is a major employer, employing over 1,250 staff at the Airport.

21.5 The development would also ensure the development of LNCH without constraining building heights, thus realising the economic benefits of the consented development.

21.6 Officers consider that the direct and indirect positive economic benefits which the development would generate in terms of its construction and operational phases are of major significance, to which weight should be given.

- **Social Role**

21.7 The proposed radar would bring significant social benefits, by enabling the continued safety of the Airport and its operations, to the benefit of aircraft and crew/passengers. The maintenance of safe aircraft operations would also have wider public safety benefits, protecting communities and people living in the vicinity of the Airport, in accordance with Paragraph 95 of the NPPF, which concerns the promotion of public safety.

21.8 By ensuring the development of LNCH in accordance with the terms of the Section 106 agreement (by enabling development of the LNCH site above permissible building heights, including within an existing sterile zone within which no permanent structures are currently allowed), the proposed development would also in-directly enable other social benefits to be realised (including the provision of affordable and market housing, education and community facilities)

21.9 Officers consider that the direct and indirect positive social benefits of the development in terms of its construction and operational phases are of major significance.

- **Environmental Role**

21.10 In relation to the environmental role of sustainability, it is acknowledged by officers that the proposed H17 Radar would generate significant adverse landscape and visual effects on the landscape character of Coldham's Common, and its recreational users. This would be contrary to Paragraph 174 (a) of the NPPF which seeks to ensure that planning decisions protect and enhance valued landscapes.

21.11 By failing to conserve and enhance the setting and special character of the City, the proposed H17 Radar would also be contrary Local Plan Policies 8 and 60, which seek to ensure that proposals which break the existing skyline fit within the existing landscape and townscape with no adverse impact. The proposals would also conflict with Local Plan Policy 67 by causing harm to the character of the open space of Coldham's Common.

21.12 Significant weight can be attached to the harm the development would cause to the existing landscape and local character. The environmental dis-benefits of the proposals outweigh any environmental benefits arising from the re-use of the existing H16 radar tower.

22.0 **Summary and Conclusion**

22.1 This is a finely balanced decision. Overall, the proposed development will bring significant economic and social benefits which accord with the three dimensions of sustainable development set out in the NPPF. However, the proposed H17 Radar would also bring environmental dis-benefits through significant adverse landscape and visual effects for recreational users of Coldham's Common, which has recreational importance, and the Common's landscape character. Whilst these impacts cannot be avoided, the ten-year planning permission secured through recommended condition 2 will mean that long term impacts are mitigated. The development is not considered to result in any other significant harmful, permanent, or temporary effects on other environmental considerations.

- 22.2 The proposed H17 Radar would be contrary to Local Plan Policy 55 (Responding to Context), Policy 67 (Protection of Open Space) and would also conflict with Policy 83 (Aviation Development) which advises that aviation development at Cambridge Airport will only be supported where it would not have a significant adverse impact on the environment. However, officers recognise that the applicant has taken all reasonable steps to ensure that the visual impact of the proposed H17 Radar is minimised, by its location within the only part of the Airport where it could be sited consistent with safety, operational and noise constraints, and given there are no other alternative on or off Airport sites that would offer lesser visual impacts.
- 22.3 The proposed development would bring about substantial safety benefits, enable existing business operations at the Airport to continue, and facilitate the development of the LNCH site. When read as a whole, the proposal is considered to comply with local plan policies and guidance in the NNPF. On this basis, officers are of the view that the benefits of the proposals tip the balance in favour of supporting the scheme, resulting in the recommendation below at Paragraph 23.1.

23.0 Recommendation

23.1 **Grant Planning Permission for Application 21/03224/FUL**, subject to:

- (i) The conditions and informatives set out in **Appendix C** to this report, and
- (ii) With delegated authority to officers to carry through minor amendments to those conditions and informatives (and include others considered appropriate and necessary) prior to the issuing of the planning permission.

Appendices:

Appendix A: Glossary
Appendix B: Noise Policy Context
Appendix C: Proposed Planning Conditions and Informatives
Appendix D: Consultation Response on behalf of Cambridge City Council
Environmental Quality and Growth Team
Appendix E: Three Spires Acoustic Report

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