Ad Astra Aviation Limited Planning response (AALSUB0408-26) to an application for planning permission

From: [redacted] FRAeS
Director
Ad Astra Aviation Limited
[redacted]

To: The Planning Inspectorate

Reference: EN0110012

Type of application: Generating Stations

Proposal: Solar farm with associated battery energy storage system (BESS) located near Selby in North Yorkshire

Status: Examination Stage

Signature: [redacted]

Date: 10/08/2026

Name: James Head FRAeS

Position: Director

Contents

A1. Introduction

Ad Astra Aviation Limited provide specialist advice, guidance and support to a wide range of general aviation stakeholders. These include both licensed and unlicensed aerodrome operators, based operators, local authorities, developers and other associated stakeholders.

We provide advice on aerodrome operations, air traffic services, airspace, best practice methodology, safeguarding, planning related challenges and other matters related to aerodrome function and wider aviation systems.

A fundamental aspect of our aims and objectives is to ensure that general aviation aerodromes are protected and preserved, to enable the continued advancement of UK aviation as the sector evolves. We are cognisant of the need for non-aviation development to occur in proximity to aerodromes at times, as well as the value of such schemes. It is crucial however that such development does not adversely impact on established aviation systems.

Ad Astra Aviation Limited have been instructed by Sherburn Aero Club which operates Sherburn-in-Elmet aerodrome, to provide support in relation to the above national infrastructure project that is being proposed on land in proximity to their established, licensed aerodrome operation.

Owing to the scale and proximity of the scheme to Sherburn Aerodrome, it is likely that it could adversely impact upon the established aviation operation, if adequate consideration is not afforded at this point and any required mitigation measures are not employed.

Whilst Ad Astra Aviation made a relevant representation in May 2026 on behalf of Sherburn Aeroclub to attain rule 6 status, unfortunately neither the aeroclub nor Ad Astra were able to join the examination hearing that took place on Thursday 30th July 2026, despite continued efforts to connect virtually throughout the day.

Ad Astra Aviation are pleased to present this submission to ensure the concerns of the aeroclub are embedded within the process, to enable timely and relevant consideration of key aviation constraints as the examination process continues.

A2. Policy Considerations

Planning policies should recognise the importance of maintaining a national network of general aviation airfields, and their need to adapt and change over time – taking into account their economic value in serving business, leisure, training and emergency service needs, and the General Aviation Strategy[1]

A3. Sherburn in Elmet Aerodrome

Sherburn-in-Elmet Aerodrome, operated by Sherburn Aeroclub, is a well-established and thriving, licensed general aviation aerodrome. A busy 7 day a week operation, it serves 35,000 movements per year, underpinning its importance as part of the wider UK network of general aviation aerodromes.

These movements consist of training flights undertaken by approved training organisations based at the aerodrome, as well as those based elsewhere. Additionally, movements are made up of recreation and business connectivity. The aerodrome also hosts large community events.

[1] MHCLG - National Planning Policy Framework .111 (F) page 32.

The aerodrome consists of 4 runways, interconnecting taxiways, grass and paved apron areas, hangarage, engineering and maintenance facilities, aircraft refuelling facilities, café and club house. The aerodrome also has instrument flight procedures for runway 10/28. See figure 1 Aerodrome Chart below.

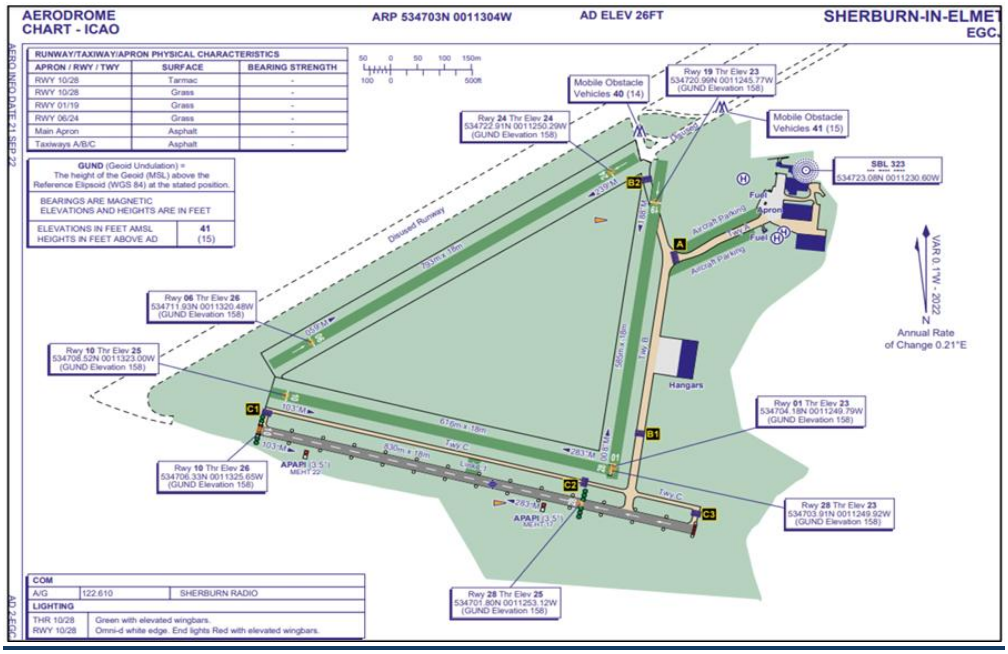

Figure 1 Aerodrome Chart

See Figure 2 – Proximity. The areas shown in purple represent several of the scheme's individual development sites. These sites are closest to the aerodrome, with site 6 a little over 500m from the aerodrome boundary. The aerodrome site is shown in yellow.

Figure 2 Proximity

A4. Context

We understand that the Light valley Solar scheme consists of 8 separate development sites comprising of ground mounted photovoltaic panels, accompanying storage batteries and extensive cross-site cabling, which shall be connected to the National Grid transmission network.

Light Valley Solar have provided the following site layout drawing which we designate figure 3 – Light Valley Solar site layout, which shows the extent of the development.

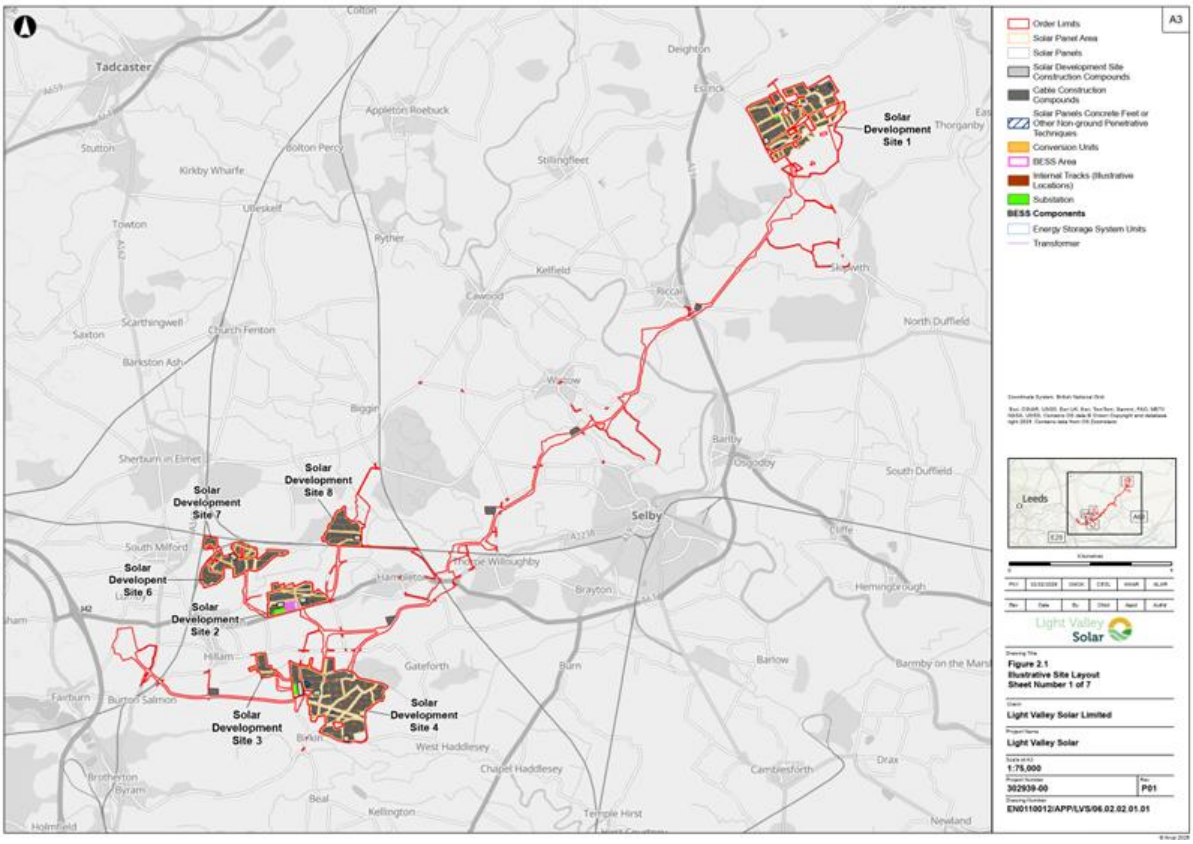

Figure 3 Light valley Solar site layout

Development sites 2,6,7 and 8, all sit within the Sherburn Aerodrome, aerodrome traffic Zone (ATZ) as shown below in figure 4 ATZ and development sites. Development site 4 also encroaches into the ATZ at the southern extent of the zone.

Figure 4 ATZ and development sites

An aerodrome traffic zone (ATZ) is designed to provide an element of protection to those on the ground and in the air. We estimate that the light valley development sites, within the Sherburn Aerodrome ATZ, cover an area of over 250 hectares. Figure 5 runway 01/19 circuits below, shows the fixed wing flight track over the ground associated with runway 01 and the reciprocal, runway 19, relative to the development areas 2,6,7 and 8.

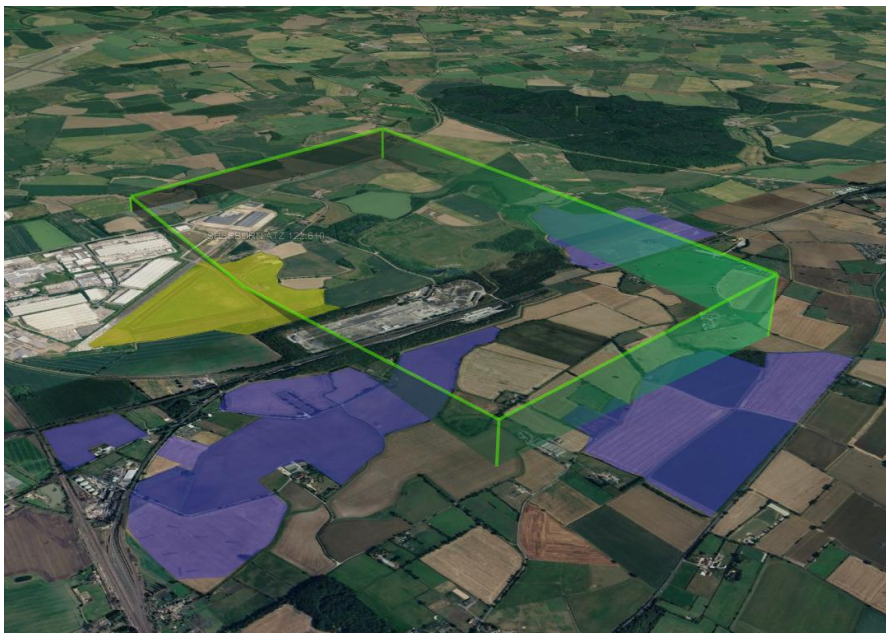

Figure 5 Runway 01/19 circuits

Figure 6 runway 06/24 circuits below, shows the fixed wing flight track over the ground associated with runway 06 and the reciprocal runway 24, relative to development areas 2,6,7 and 8.

Figure 6 Runway 06/24 circuits

Figure 7 runway 10/28 circuits below, shows the fixed wing flight track over the ground associated with runway 10 and the reciprocal runway 28 relative to development areas 2,6,7 and 8.

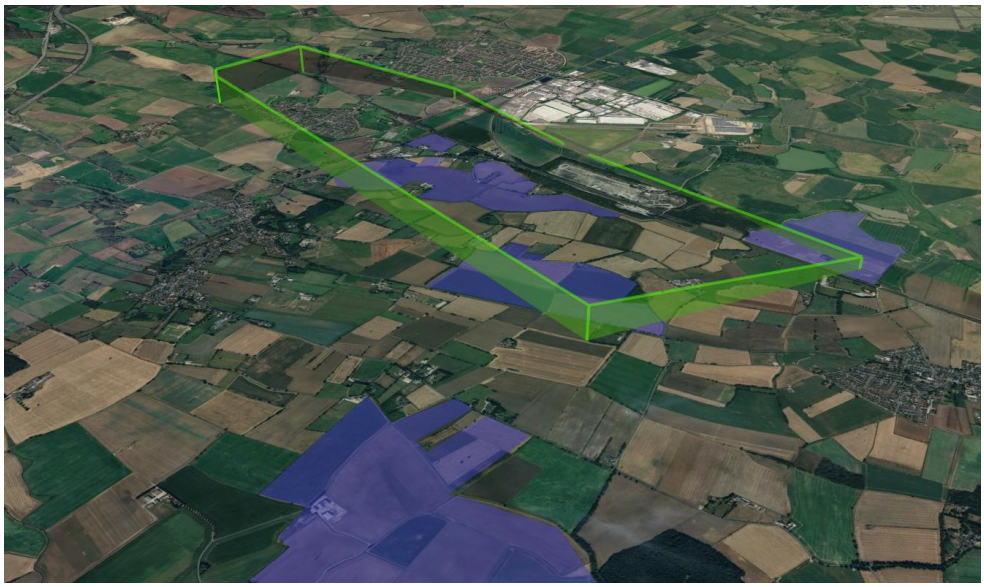

Figure 7 Runway 10/28 circuits

We have not included low level, fixed wing training circuits or rotary wing circuit tracks in the above figures, these should be assessed however, to understand and quantify potential impact to the aerodrome and its operators.

A5. Aviation Safeguarding

Civil Aviation Publication CAP 738 – Safeguarding of Aerodromes states the following:

"The common aim of all safeguarding is to assess the implications of any development being proposed within the vicinity of an established aerodrome to ensure, as far as practicable, that the aerodrome and its surrounding airspace is not adversely impacted by the proposal, thus ensuring the continued safety of aircraft operating at the location"[2]

And

"Aerodromes holding a certificate based on European Union (EU) regulation or a licence based on UK regulation are required by the CAA to ensure they have a system in place to safeguard their aerodrome against the growth of obstacles; or activities that may present a hazard to aircraft operations (e.g encourage wildlife, glare, lighting, building induced turbulence, etc)."[3]

Figure 8 safeguarding assessment process below, is taken from CAP 738 Safeguarding of aerodromes.

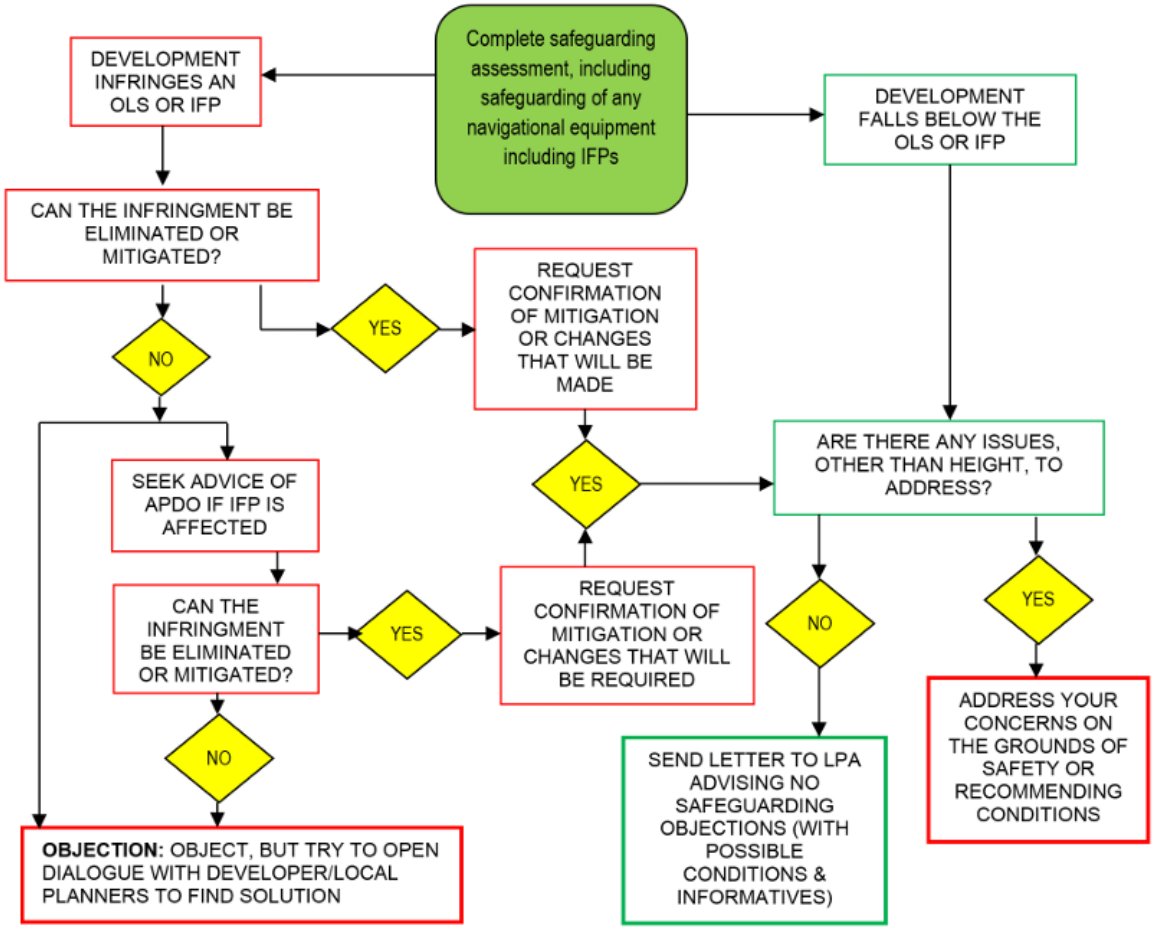

Figure 8 Safeguarding assessment process

[2] CAP 738 Safeguarding of aerodromes, Page 11 - point 5
[3] CAP 738 Safeguarding of aerodromes, Page 11 - point 6

At present, no such consultation has taken place with the aerodrome authority. However, both we (Ad Astra Aviation) and Sherburn Aeroclub are in contact with a third-party consultant, (Aviatica) whom we understand are supporting the developer.

Aviatica have advised that they would like to develop a statement of common ground together with us and the aerodrome authority. Whilst we recognise the value and intent behind such a process, it is crucial all parties understand the concerns of the aeroclub to support further discussions around the scheme's optimisation and mitigation of hazards.

The following key aviation safety concerns exist in relation to the proposed scheme.

- Glint and glare impact on aviation receptors
- Aviation emergency and associated access
- Thermal radiation
- Electromagnetic interference

A5.1 Glint and glare

As described above, the flying environment at Sherburn Aerodrome is busy and includes significant flight training movement numbers. A key component of flight training includes repetitious 'touch and go' procedures designed to familiarise a pilot with configuring an aircraft for the most dynamic and critical phases of flight, take-off and landing. The inherent nature of flight training means that pilots will constantly fly directly over development sites 2,6,7 and 8 whilst flying the repetitive circuit tracks described.

Glint and glare can cause visual disturbances to aviation receptors. Yellow glare has the potential to cause 'after image' - temporary visual impairment. Such phenomena can be caused by materials such as metallic surfaces, bodies of water, glass and solar photovoltaic arrays for example.

We understand that Pagerpower Urban and Renewables have produced an assessment dated February 2026. Their executive summary states the following:

"Pager Power has been retained to assess the possible effects of glint and glare from a ground-mounted solar photovoltaic development, located in North Yorkshire, UK. It has not yet been determined whether a fixed south facing or single axis tracking layout will be progressed, and therefore both options are assessed in this report. This assessment pertains to the potential impact upon road safety, residential amenity, railway safety, and aviation activity."[4]

And

"Sherburn-In-Elmet Airfield

For 'yellow' glare towards the visual circuits associated with runways 01/19 and 06/24, solar reflections would occur from outside a pilot's primary field-of-view for pilots on approach to the runway thresholds. Any possible glare would occur from behind the pilot whilst they are approaching the thresholds and is therefore unlikely to be experienced by pilots in practice. A low impact is predicted but consultation is being undertaken with Sherburn-In-Elmet Airfield to understand their position towards the Proposed Development and their operations. For visual circuits associated with runways 10/28 and 10G/28G, 'yellow' glare is predicted which would occur within a pilot's primary field-of-view, while they are on final approach. A moderate impact

[4] Pagerpower, Light valley Solar - February 2026

is predicted, and the development of mitigation measures is recommended (see Section 6.7.1) by this study on the basis of the modelling work undertaken."[5]

We note that Pagerpower's methodology encompasses the assessment of a 50° field of view, either side of the approach bearing. This is problematic and perhaps symptomatic of a lack of general aviation specific guidance on this subject. The point is that we are not merely concerned with a final approach bearing, as might be the case with commercial public transport operations which benefit from multi crew operation (flight crew), Multi engine aircraft, automation and redundancy, airspace protection (controlled airspace). As is demonstrated above in section A4, aircraft at Sherburn aerodrome and indeed most other general aviation aerodromes, fly repetitive circuit tracks over the ground.

This serves multiple purposes, including enabling inbound pilots to descend from a greater height of around 2000ft above the aerodrome prior to arrival and then to sequence themselves into the circuit pattern, amongst other airspace users. This is a fundamental component of the flight training syllabus under exercises 12 and 13 Circuit approach and landing in the UK Part FCL PPL(A) (flight crew Licence fixed wing aeroplanes).

Furthermore, flight instructors teach their students to familiarise themselves with visual reference points on the ground. Such reference points might be directly ahead or beyond 90° left or right of track. This aids inflight planning and enables configuration of the aircraft at the most challenging and dynamic phases of flight. Importantly, pilots in such flying environment are visually deconflicting and separating themselves from other aircraft also making turns within the ATZ.

In summary, the 50° field of view is inadequate in the assessment of glint and glare on aviation receptors at busy general aviation aerodromes.

We do recognise Pagerpowers' findings however, which show yellow glare is predicted, despite their limited assessment criteria. See figure 9 Pagerpower findings (fixed panels) and figure 10 Pagerpower findings (tracking panels) below.

[5] Pagerpower, Light valley Solar - February 2026

Receptor/Runway	Geometric Modelling Result	Glare Intensity	Comment	Impact Classification	Mitigation Recommended?
Runway 10/28 Visual Circuits	Solar reflections are geometrically possible towards final sections of the visual circuits	'Yellow'	Solar reflections with intensities of 'potential for temporary after-image' are predicted towards these circuits	Moderate impact	Yes
Runway 10G/28G Visual Circuits	Solar reflections are geometrically possible towards final sections of the visual circuits	'Yellow'	Solar reflections with intensities of 'potential for temporary after-image' are predicted towards these circuits	Moderate impact	Yes
Runway 01/19 Visual Circuits	Solar reflections are geometrically possible towards final sections of the visual circuits	'Yellow'	Solar reflections with intensities of 'potential for temporary after-image' are predicted towards these circuits	Low impact (see Section 6.2.11)	No
Runway 06/24 Visual Circuits	Solar reflections are geometrically possible towards final sections of the visual circuits	'Yellow'	Solar reflections with intensities of 'potential for temporary after-image' are predicted towards these circuits	Low impact (see Section 6.2.11)	No

Figure 9 Pagerpower findings (fixed panels)

Receptor/Runway	Geometric Modelling Result	Glare Intensity	Comment	Impact Classification	Mitigation Recommended?
Runway 10/28 Visual Circuits	Solar reflections are geometrically possible towards final sections of the visual circuits	'Yellow'	Solar reflections with intensities of 'potential for temporary after-image' are predicted towards these circuits	Moderate impact	Yes
Runway 10G/28G Visual Circuits	Solar reflections are geometrically possible towards final sections of the visual circuits	'Yellow'	Solar reflections with intensities of 'potential for temporary after-image' are predicted towards these circuits	Moderate impact	Yes
Runway 01/19 Visual Circuits	Solar reflections are geometrically possible towards final sections of the visual circuits	'Yellow'	Solar reflections with intensities of 'potential for temporary after-image' are predicted towards these circuits	Low impact (see Section 6.2.11)	No
Runway 06/24 Visual Circuits	Solar reflections are geometrically possible towards final sections of the visual circuits	'Yellow'	Solar reflections with intensities of 'potential for temporary after-image' are predicted towards these circuits	Low impact (see Section 6.2.11)	No

Figure 10 Pagerpower findings (Tracking panels)

Pager power have undertaken a thorough and valuable assessment of the potential for glint and glare towards aviation receptors. We suggest that with further optimisation, taking in to account a wider pilot field of vision, additional circuit tracks associated with low level training and rotary wing operations, that a greater level of yellow glare will be indicated.

It shall be important to adequately understand the potential extent of glare in order to aid mitigation and to support final development site design concepts.

A5.2 Aviation emergency and associated access

Careful consideration should be given to the possibility of an aircraft accident occurring within any of the proposed development sites. Whilst such occurrences are relatively uncommon, they do occur, particularly in proximity to general aviation aerodromes.

Such incidents can occur for a variety of reasons including engine failure after take-off (EFATO), engine failure within the circuit pattern, loss of control, pilot incapacitation etc.

At present, there are many wide-open spaces in which a pilot could make an off aerodrome forced landing if they were compelled to do so. It is observable that the development sites will reduce such options. Whilst it is not the aerodrome's responsibility to define and secure off aerodrome landing sites, the realities and nuance of such scenarios should be understood by those behind the scheme.

We understand that some consideration has been given to such scenarios previously and that a gap between photovoltaic panels has been suggested to the south of runway 19. See figure 11 EFATO gap below. We are unsure of the origins of this suggestion at this point.

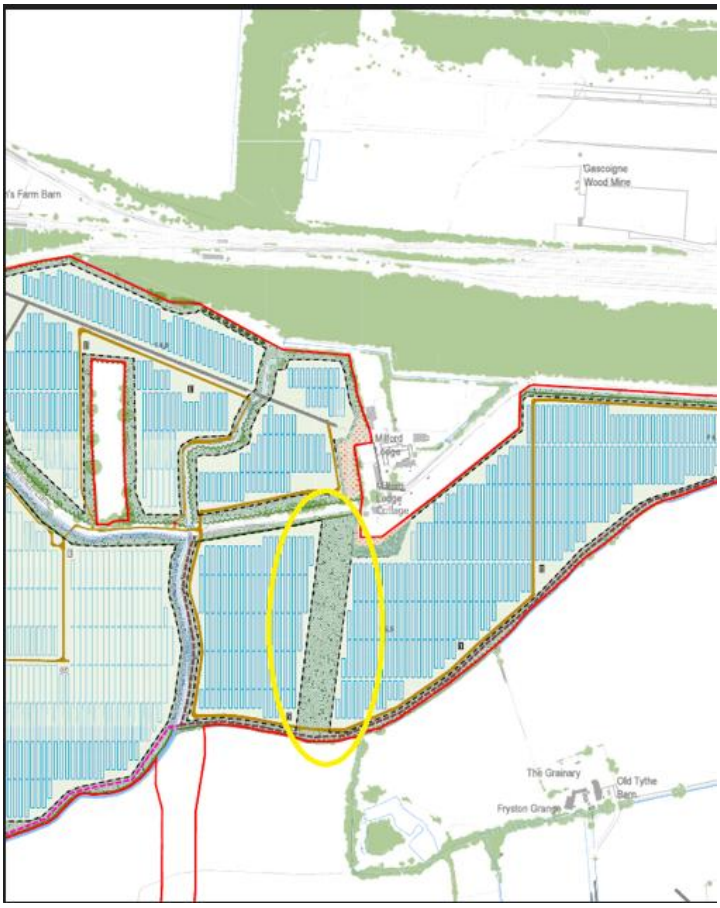

Figure 11 EFATO gap

Figure 12 EFATO gap close up, offers a slightly clearer view of the proposal. The green line represents the flight track over the ground after departure from runway 19.

Figure 12 EFATO gap close up

The reality is that whilst the suggestion of such a gap has clearly been made with good intention, it offers extremely limited value and is highly problematic for a variety of reasons. The proposed gap sits in a narrow field within development site 6. The length of the proposed strip is less than 350 meters which is noticeably short indeed. Furthermore, its width is understandably limited.

Crucially, such a strip could only ever conceivably represent an option to aircraft on the least used runway 01/19 which is only used when particularly strong northerly or southerly winds are present.

Importantly, terrain immediately south of the aerodrome boundary rises considerably with two distinct earth mounds at the old mine site. Terrain then drops again within development site 6.

This means that an aircraft would require to climb clear of the earth mounds and then aggressively descend to the short landing site provided by the EFATO gap whilst experiencing an engine failure. See figure 13 elevation chart.

Figure 13 Elevation chart

The aerodrome is on the left-hand side of the red elevation chart shown in figure 13. The first mound climbs from 7m elevation to 18m. The second mound further right on the chart (south) climbs to nearly 30m before dropping back to nearly 8m elevation. In summary, this does not represent a workable solution for an aircraft in such an emergency. In fact, it would be very challenging for an experienced pilot to execute with a fully operational aircraft.

The reality is that providing such a gap may offer some value, if it were not collocated with the mound on the extended centreline of the least used runway. The problem is that, whilst the inclusion and suggestion of such gaps, clearly demonstrates an acceptance and understanding

of risk associated with locating such schemes near to aerodromes, they cannot offer an adequate solution.

When the pilot of an aircraft is compelled to land at or below the circuit heights described above, he or she has a few seconds to react. The aircraft needs to be reconfigured to extend glide, potentially exchanging height for flying speed to ensure control authority is maintained, fuel supply might need to be cut off, emergency radio transmissions made, other cockpit security and preparations made, all within a few seconds. Add to this the fact that the survivability of a forced off aerodrome landing is directly linked to the ground speed upon touch down. A pilot will always try to obtain a headwind component where possible to reduce track speed over the ground. Additionally, aircraft naturally point into wind or 'weather-cock' meaning directional control becomes further strained under emergency conditions associated with an off-aerodrome landing. These points are highly relevant when assessing the viability of such EFATO gaps. Even with an ideal chain of events during an emergency scenario, the pilot may not be able to direct the aircraft towards the gap as flying energy (height and speed) deteriorates, which could result in the aircraft coming in to contact with photovoltaic infrastructure. Such a scenario would greatly reduce survivability and create additional and dynamic rescue and firefighting hazards to first responders.

When considering the respective phases of flight (i.e take off, cross wind turn, downwind track, base leg turn and final approach) associated with the runway circuit directions. Runway 19 departure, runway 06 cross wind and base leg, and the reciprocal runway 24 crosswind and base leg can be viewed as potential hotspots. At these locations aircraft are less than 1000ft above the ground, in the turn or having just completed a turn and with reduced off aerodrome landing options owing to development sites 6 and 8. See figure 14, runway 06 base leg and runway 24 crosswind leg, below. Also figure 15, runway 06 crosswind leg and runway 24 base leg, below.

Figure 14 Runway 06 base leg and runway 24 crosswind leg

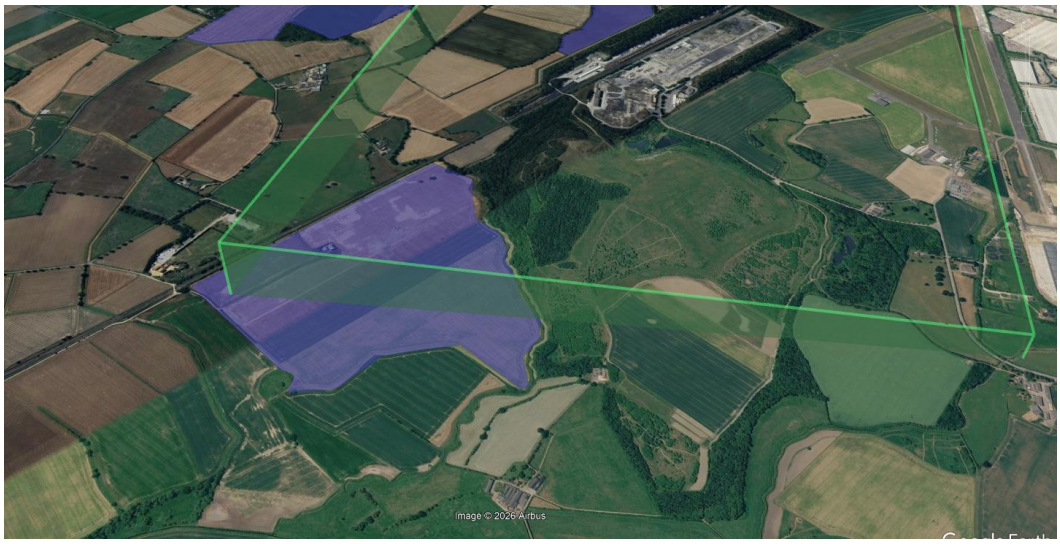

Figure 15 runway 06 crosswind leg and runway 24 base leg

The downwind track associated with runway 10/28 overflies development sites 2 and 6, although on this track, aircraft will be at 1000ft with greater options.

A5.3 Thermal radiation

Owing to the scale and positioning of the development areas, it is possible that heat absorbed by the photovoltaic panels will radiate upwards causing localised thermal instability. Such instability is problematic for pilots, particularly for those at low height and airspeed, with low flying hours or those under flight training.

Unwanted lift or sink caused as a result of such instability can cause an aircraft to gain or lose height, cause unintended changes in aircraft attitude relative to the horizon and cause flight control issues in both pitch and roll axis. Light aircraft, such as those in operation at Sherburn aerodrome are most susceptible.

When such phenomena occurs, corrective action from the pilot is required. This is not always straight forward. For example, aircraft descending on base leg for runway 06 will be descending below 500 ft directly above the panels in development site 6. The aircraft engine power setting will be low, and the aircraft pitched for the desired attitude and rate of descent. Sudden unwanted sink will require additional power which, at that point will likely result in a go around. Lift on the other hand will require the opposite, a reduction in power and aircraft reconfiguration. Both scenarios are disconcerting for student pilots and can lead to increased fuel burn, noise and track miles flown as a result of unstable approaches and go arounds.

A 2025 thermal impact assessment undertaken by Nova Fluid Mechanics of the Botley West Solar Farm in Oxfordshire, concluded that a maximum increase in air temperature associated with thermal effect of the solar farm is 1.1°c with an average increase across all assessed cases of 0.6°c. The assessment further concluded that the scheme, located to the southwest of Oxford Airport would be minor[6]. However, Professor Martin Olfield criticised both Nova Fluid

[6] planninginspectorate.gov.uk/published-documents/EN010147-002022-17.14

Mechanics and Pagerpower's contribution and limited assessment methodology in this case stating that the assessment was invalid[7].

We understand that in the case above, concerns were related to rising thermals potentially disrupting primary radar imaging at both Oxford airport and RAF Brize Norton. Whilst navigational aid performance is not a concern at Sherburn, the proximity of the development sites and potential for thermal energy to upset aircraft attitude is observable, particularly given the flight training environment. Work is required to assess and quantify any such risk to provide comfort and reassurance to all associated stakeholders.

A5.4 Electromagnetic interference

Electromagnetic interference is known to have caused communications issues when large solar arrays are located in proximity to aerodromes. Examples in the US, the Netherlands and Sweden include reports of increased 'noise' on air traffic radio telephony frequencies.

Owing to the scale of the proposed scheme, and proximity to Sherburn aerodrome, it shall be necessary to ensure no such adverse effects are created, and that proper assessment and mitigation measures are employed where required.

A6 Recommendations

The value of such national infrastructure projects is clear; however, it is vital that adequate consideration is given to established aviation systems to ensure aviation safety is not compromised and eroded. Also, to enable the developer to identify areas for further optimisation/mitigation.

As part of the examination process, we recommend that the gaps described above in relation to glint and glare are reassessed to ensure general aviation specific flight profiles are adequately understood and modelled. Whilst it is highly likely that such a process will indicate more yellow glare, it will help to shape consideration of tracking and fixed panels as well as the potential benefit of anti-reflective coatings.

On emergency access, we recommend further assessment of the extent and design of development sites, particularly those in areas we describe as potential hotspots where aircraft are low and slow in the circuit pattern. If an aircraft was forced to make an off aerodrome landing in these locations, options are limited and could result in an aircraft not being able to avoid the panels directly beneath their flight track.

On thermal radiation, whilst this phenomenon has not been assessed as part of the process, we recommend that work is undertaken to quantify such hazards given the busy nature of the flying environment at Sherburn Aerodrome and constant overflight of the development areas.

It is likely that revision of the extent of the development as described above could help to reduce this issue.

Finally, we recommend assessment for the potential of electromagnetic interference given the proposed scale of the scheme and proximity to Sherburn aerodrome.

It shall be crucial to ensure these points are included and addressed, as part of the development of a statement of common ground.

[7] planninginspectorate.gov.uk/published-documents/EN010147-002128