Report to	Planning applications committee	**Item**
Date	14 March 2013	5(13)
Report of	Head of Planning Services	
Subject	12/01172/F Norwich Airport Amsterdam Way Norwich NR6 6JA	

SUMMARY

Description:	Aircraft engine testing at Norwich International Airport, construction of an associated ground run enclosure (GRE), hardstanding and drainage works.
Reason for consideration at Committee:	Objection
Recommendation:	Approve
Ward:	Catton Grove
Contact Officer:	Graham Nelson
Valid Date:	19th June 2012
Applicant:	Norwich Airport Limited
Agent:	Drivers Jonas Deloitte

INTRODUCTION

Background

1. High powered engine testing of commercial aircraft is currently being undertaken in the open (i.e. with no noise attenuation) at Norwich International Airport (NIA). The engine testing takes place to the north of the disused runway (Site A on attached **Figure 1**). The testing operation at this location consists of high powered engine testing (in combination with low powered testing). This activity is not the subject of a specific planning consent. The activity was relocated to this site 7/8 years ago by the airport from a site on the eastern apron (Site B on **Figure 1**). Site B had been specifically identified for engine testing (also in the open) by way of a condition imposed on a 1984 planning permission. The condition has been imposed on subsequent extant planning permissions, including most recently in 2006.

2. For the purposes of this report the following definitions relating to engine testing are applied:

   - Ground running - the operation of some or all of the engines of an aircraft on the ground for the purpose of functionally checking of either engines or aircraft systems on the ground, usually undertaken after a period of maintenance of the aircraft.

   - A ‘high powered engine test’ is defined as the ground running of an aircraft engine at high power, being 70% of full power or above, in combination over a period of time with the ground running of the aircraft engine at less than 70% of full power.

   - High powered engine testing is defined as the ground running of the aircraft engine at high power, being 70% of full power or above.

   - Low powered engine testing is defined as the ground running of the aircraft engine at

less than 70% of full power.

3. High powered engine tests were relocated from Site B due to its conflict with the operations (movement, maintenance and access) of Bristow Helicopters who occupy this part of the airport and who service the gas industry in the Southern North Sea.

4. Following this relocation, a number of complaints associated with the noise impact of the engine tests in relation to properties to the north of the site were received. The Council's Planning Enforcement Officer advised the airport of the unauthorised nature of the use of the site and the need to resolve the issue. In August 2009 an application was received to address the issue. This application was invalidated due to inadequacies and as a consequence the Council served a Breach of Condition Notice on 24 November 2009, requiring the airport to cease engine tests unless carried out in accordance with the relevant appropriate condition. Subsequently, NIA submitted a planning application to regularise engine test operations by relocating it to a site in the north eastern part of the airport (Site C on **Figure 1**). This application included the construction of 6 metre high bunds around three sides of the facility to seek to attenuate noise emissions. The City Council approved this application on 13th May 2010 (although it has not been implemented). The planning permission was subsequently challenged through the Judicial Review process. The City Council consented to judgement in the High Court leading to the planning permission being quashed on 6 June 2012.

5. In the light of the approved High Court consent order, Norwich Airport Limited (NAL) has submitted this current application in a new location (Site D on **Figure 1** and Location Plan at **Appendix 1**). The development now proposed has been subject to an Environmental Impact Assessment.

The Site

Location and Site Context

6. NIA is located to the north of the city and accessed off the A140 Norwich - Cromer road. The airport site straddles the administrative boundaries of Norwich City Council and Broadland District Council (BDC). The application site consists of 2.286 Ha of rough grassland and hard standing and forms a relatively small part of the airport site. The site is wholly within the City Council's area, although close to the boundary with Broadland DC.

7. The airport is of a size that, to the south it is seen within the context of the built up urban area of the city. It is bounded by residential and commercial land uses within Hellesdon, and Old Catton to the south, south west and south east, whereas to the north the surrounding context is predominantly rural countryside and village settlements. Existing roads, villages, isolated dwellings and residential and industrial areas surrounding the airport can be seen from the location plan at **Appendix 1**.

8. The majority of development that exists within the airport operational area is situated at its southern end, with the main passenger terminal located at the end of the now disused second runway. There are a number of aviation related businesses which operate within the vicinity of the eastern apron (e.g. KLMUKE, Air Livery, Bristows Helicopters) together with a number of other businesses which operate from the western apron. The airport industrial estate and other commercial land uses are situated adjacent to and beyond the southern boundary of the airport.

9. The closest public road to the proposed site is to the east and is separated from the

application site by a field, bordered by trees and hedges. Whilst public viewpoints from the north and north-west are possible, these are not achieved until at the boundary of the airport site. Generally, the site is relatively well-screened from long distance views in most directions.

Planning History

10. The airport site has been used as an airfield since the Second World War. It ceased military operations in 1963 and was bought by the City Council in 1967 (who still retain an interest in Norwich Airport Ltd. and the land). It was commercially operational as an airport by December 1968. No permission was required for the operation of the site as an airport at that time due to the established nature of the use of the site as an airfield. Low powered and high powered engine testing has, as far as is known, always been carried out in association with the use of the site as an airfield.

11. There have been a number of applications granted on the site since the 1960's. However, the most relevant of these are considered to be those which include reference to engine testing.

    Application Ref 4841269/SU (Approved 1984). The earliest known reference to engine testing was in the form of a condition attached to a permission granted in 1984 which restricts the activity to a particular site within the airfield and refers to the use and the site concerned as 'existing'. Various subsequent permissions granted since this approval re-imposed this condition.

    Application Ref 05/00697/F (Approved 19/09/2006), *'Refurbishment and extension to existing terminal building to provide improved passenger facilities'*. This is the most recent permission where the condition referred to above has been imposed. The condition states:

    'Aircraft engine testing shall only take place in the area presently approved for such testing, (as shown on Plan No. AAA attached to Planning Permission No.4980733/F), or in any such area that may be granted planning permission for that purpose, and shall be limited to between the hours of 0600 and 2300. Exceptionally, aircraft engine testing may take place outside these hours providing it is an emergency, which is defined for these purposes as any sudden or unforeseen event needing prompt attention and is authorised by a Norwich Airport Executive Director and does not involve the testing of Turbo Jet Engines.' (see Site B on **Figure 1**)

    Application Ref 09/00679/F (Approved 13/5/2010), *'Relocation of existing engine testing facility from its approved location on the eastern apron to the former fire training site and associated noise mitigation works'*. The application (at Site C on **Figure 1** as previously referred to) was submitted in December 2009 and subsequently approved subject to conditions. The application included hardstanding areas and the construction of 6 metre high bunds around three sides of the facility to seek to attenuate noise emissions.

    Application Ref 09/00679/F (quashed by Order the High Court 6/6/2012). A claim for judicial review (JR) to quash the decision of 13th May 2010 was submitted on 12th August 2010. There were 4 grounds for challenge, as follows:

    1. **Fall-back position** – the application for JR considered that Norwich City Council (NCC) failed to consider lawfully the fall-back position, i.e. what would happen if the planning application were refused. Whilst the planning application documentation implied that engine testing would not take place on the authorised site in the south-eastern part of the airport, the officer's advice to the planning committee was that there was a

reasonable prospect that it would. Noise impacts were assessed on the basis that the authorised site would be reused for testing but economic impacts were assessed on the basis that it would not be, which was considered to be an unlawful approach.

2. **Assessment of noise impacts** – NCC considered noise impacts by comparing three different engine testing sites and the modelled impacts of noise from those sites on different receptor locations. It did so on the basis that the noise modelling represented a "worst case" scenario. However, the noise report assumed that the prevailing wind was in the direction of each receptor, whereas the prevailing wind is in the direction of Quaker Farm. The claim therefore challenged that NCC made false comparisons when assessing noise impacts.

3. **Conditions** – NCC imposed Condition 20 on the planning permission which sets a noise limit on engine testing when the noise is measured under certain conditions. The operation of this condition was relied upon in the officer's report as assisting in mitigating the effects of the proposal but the officer's advice did not reflect the lawful operation of the planning condition.

4. **Environmental Impact Assessment** – NCC determined that the proposal was not likely to have significant effects on the environment and therefore did not require EIA to support the planning application despite the officer's report highlighting considerable noise impact. NCC also did not reconsider its Screening Opinion of May 2009 when it assessed the level and scope of noise impacts in its officers' reports of March and May 2010.

Following review of the position and legal advice, the Council consented to judgement on point 1 set out above and the High Court has subsequently issued a Consent Order that quashes the 2010 planning approval. It should be noted that despite the planning permission having been quashed, application **09/00679/F** still remains live and effectively undetermined.

NIA: Engine Tests and their Planning 'Status'

12. NIA operates under licence from the Civil Aviation Authority as an aerodrome. In planning terms, 'aerodrome' is defined within the Town and Country Planning (General Permitted Development) Order 1995 and includes specific reference to it being a place *'at which the manufacture, repair or maintenance of aircraft is carried out by a person carrying on business as a manufacturer or repairer of aircraft'* as well as being a place which is *'used by aircraft engaged in the public transport of passengers or cargo or in aerial work'*.

13. The applicant is a 'relevant airport operator' whose planning application is within the boundary of Norwich Airport and on land which is accepted to be 'operational land' in terms of the application of Part 18 of the above Order (which relates to aviation development).

14. It would therefore appear that repair and maintenance uses, which include engine tests carried out by businesses at NIA and including the Maintenance, Repair and Overhaul (MRO) operations, are ones that would fall within the above definition and, as such, could be considered to be operational with regards to the use of the site as an airport and are consistent with the existing use of the land. NIA could also seek approval of these types of uses on its operational land and could exercise their permitted development rights to do so were they not fettered by earlier planning conditions restricting this use and the EIA Regulations (in that, where EIA is required, permitted development rights fall away).

15. Low powered testing, general testing or idling that takes place regularly across the NIA

operational area is understood to have been carried out at the airport since commercial operations commenced, and in any event, for more than 10 years. This is, therefore, an established activity carried out by NIA and is immune from enforcement action by the Council at current levels of intensity.

Historical Levels of Engine Tests at NIA

16. NIA provide records of engine tests to the City Council on a monthly basis. Data from May 2007 onwards has been assessed and is summarised below:

Year	Total number of tests in year	Average number of tests per month	Average duration of tests (mins)	Total number of mins / hours of testing per year
2007*	106 (8 mths)	13.25	90	9, 804 mins / 163.4 hours
2008	135	11.25	81.5	11, 069 mins / 184.4 hours
2009	78	6.5	108	8, 358 mins / 139.3 hours
2010**	192	16	71	13, 613 mins / 226.8 hours
2011	174	14.5	76	13, 299 mins / 221.65 hours
2012	189	15.75	55	10, 421 mins / 173.68 hours

*Data for May to December 2007 only.
**Duration of 1 test on 19th April 2010 is incomplete.

17. The data presented above relates to high powered engine tests (i.e. where the engine has been run during the test for part of the time at 70% or greater of full thrust) in combination with low powered engine running. It should be noted that during high powered engine tests, an aircraft engine will only be run at high power for 15 -30 minutes (and in some cases for a shorter period of time) to avoid damage to the engines.

18. The data that NIA record as summarised in the table above, includes all elements of the engine testing operation, therefore, the figures presented in the 'Average Duration of Tests' column represents both the high powered and low powered element of the test. Over the period 2007 – 2012 an average of 145.6 tests per year of this nature have taken place, with an average of 184.87 hours per year, at an average duration of 76 minutes per test.

19. The information presented in the table above facilitates an understanding of the scale of engine tests that have historically and currently takes place at the airport. It should be noted that the parameters set out in this application seek approval for 4,316 hours of engine tests (high and low powered in combination) with a restriction on the high powered element to 546 hours per year.

20. Historically NIA have received complaints from surrounding residents in relation to noise. The City Council have received very few complaints given that the residents affected by noise mostly live in Broadland District. Noise report data supplied by the airport shows that there were 40 complaints received in 2010 relating to engine tests (2 of which appear to be helicopter related) in the main from Horsham St Faith and Spixworth (2 from Old Catton). In 2011 there were 29 complaints, in the main, from Horsham St Faith and Spixworth but also from North Walsham, Ridlington and Old Catton. To date in 2012 there have been 7 complaints from Horsham St faith, Newton St Faith and Spixworth, the last being recorded on the 16th November 2012. In submitting this data to the Council, NIA have advised that in certain cases there are single events which appear to have caused multiple complaints.

Whilst Officers note that there is evidence of multiple complaints being submitted on the same date, the airport has gone no further to support the assertion that single events have caused such complaints. In addition, NIA have also stated that the Council should adopt a degree of caution with this information stating that a large number of complaints were lodged during the lead up to the planning committee meetings on 18 March and 13 May 2010 when application Ref 09/00679/F was being considered. Whilst Officers note there were 18 complaints lodged throughout the 4 month period 13 Jan 2010 to 13 May 2010, conversely, there were 21 complaints lodged throughout the 4 month period 7 August 2011 to 7 December 2011.

21. BDC's Environmental Health Officer (EHO) advises that the number of complaints that they have received regarding engine tests since the beginning of 2009 is 20 (out of 28 in total about the airport). Five of these are from the Hellesdon/Drayton area and are more likely to relate to helicopter ground running. Engine testing is exempted from Statutory Nuisance action under the Environmental Protection Act 1990 and therefore the local authority cannot open a formal investigation when they receive a complaint. The BDC EHO further advises that because they informed residents of these limitations, they may have been discouraged from making repeat complaints.

The Proposal

Physical Structures

22. The proposed Development comprises the construction of 2,557m^2 of new concrete to supplement the existing concrete of the Bravo-November Interchange (taxiway); the assembly of a 10m high pre-fabricated Ground Run Enclosure (GRE) and movable jet blast deflector with the open side facing 240° (i.e. towards the south west); the installation of foundations to support the GRE. A layout, elevation and 3D image of the GRE are provided at **Appendix 2**.

23. The aircraft must face into the wind during testing to avoid the engines potentially becoming severely damaged by tailwinds. The GRE has been oriented to take account of the prevailing wind direction (which is from the west / southwest). Aircraft can be accommodated within the GRE nose in i.e. facing towards the north east (at 60°) or nose out i.e. facing towards the south west (at 240°) and at varying angles due to the moveable blast deflection system (aircraft can be rotated approximately 30° either side of the centre line, depending on the aircraft type and wind velocity). Given the nature of the prevailing wind it is likely that the majority of testing will be done with the nose facing out of the GRE at 240° (or at variations of up to 30° either side of this).

24. The applicant has supplied additional information relating to wind direction at the airport. **Appendix 3** is the wind rose (a diagram showing the relative frequency of wind directions at a place) for the airport dated 25th October 2010 and is informed by wind data from the preceding 12 months and therefore reflects the wind conditions over that period. Noting the orientation of the GRE and the need to test with the aircraft facing into the wind, this broadly shows wind blowing from the northeast 17.2% of the time and from the south west 40.1% of the time (57.3% in total). The remainder of the time the wind is blowing from the south east 15.6% of the time and from the north west 21% of the time. For 0.8% of the time 'nil wind' was recorded and for 5.3% of the time, wind was recorded as 'veering or backing' (VRB), being where the wind moves quickly between directions but the recording devices cannot determine a wind direction over the period. This information confirms the prevailing wind direction and informs a broad understanding of its frequency.

25. The applicant advises that the wind rose data should not be interpreted such that high powered engine testing can only take place in the GRE for 57.3% of the time. There are numerous variables that effect when engine tests can take place and when NIA actually need them to take place. Those variables include:

    - The ability to rotate the aircraft in the GRE to enable it to be tested in a variety of wind directions.

    - The ability to move the blast deflector in the GRE on rails to accommodate aircraft at different orientations depending on the wind direction.

    - Appropriate wind speed conditions are required to enable tests to take place.

    - The requirements of the MRO process will dictate when an engine needs to be tested.

26. The applicant advises that there are limited circumstances during normal operating conditions when the GRE cannot be used (as opposed to during a 'critical situation' where for example an engine may need to be tested outside of the GRE as a matter of public safety).

27. The proposed GRE would comprise a steel structure with aluminium panels filled with high absorption mineral wool. The GRE has straight side walls and a curved rear wall with a curved blast deflection system in front of the rear wall. The blast deflector is able to be moved on rails to accommodate aircraft at different orientations depending on the wind direction.

28. The GRE would be a metal structure and appear grey in colour. The GRE would not be connected to the mains electricity and would not include light fittings. Mobile lighting rigs would be used during working hours in winter months for safety reasons. No landscaping is proposed on or surrounding the concrete apron for airport operational safety reasons.

29. Access to the GRE would be from the open end. The facility will have its own drainage system. The indicative construction programme for the development is anticipated to span approximately 20 weeks of which 16 weeks would comprise the preparatory groundworks and 4 weeks for the installation of the GRE.

30. In regard to maintenance, the ES Addendum indicates that a visual inspection of the aluminium panels should be carried out annually and that the mineral wool does not need to be replaced due to degradation. The GRE supplier has confirmed to the applicant that the panels do not lose their acoustic attenuation properties over time.

Proposed Operation of the Testing Facility

31. The applicants Planning Statement and Environmental Statement (ES) supporting the planning application describes a set of parameters for the engine testing operations, namely:

    Parameter 1 – The ES (Addendum) establishes that the loudest aircraft proposed to be tested is a Boeing 737-400 (which is marginally louder than a Boeing 737-700). The applicant's noise assessment is based on the louder aircraft.

    Parameter 2 – The maximum duration of Low Power testing that is applied for is to be all year round (Excluding 25th December) 08:00 – 20:00 Monday to Saturday and 09:00 – 20:00 Sunday.

Parameter 3 – The maximum duration of High Power testing that is applied for at the facility is:

- Maximum of 30 minutes at >70% within any 1 Hour

- Aggregate of 90-minutes at >70% power in any one day

Parameter 4 – High Powered Engine Test Location. Testing involving an element of high powered testing would take place inside the GRE. The GRE is only proposed to be used for high powered tests (which involve an element of low powered testing) and not for general low power tests that take place regularly across the airport. The applicant advises that, engines are routinely tested at low power in a variety of locations as part of a range of ground operations taking place at NIA, as is normal practice at all airports.

32. The applicant's Planning Statement states that engine tests involve the running of an auxiliary power unit positioned at the rear of the aircraft used to start the aircraft's engines. On certain aircraft, the second engine will be running on idle while the other engine is tested.

33. NIA have indicated that certain exceptions to the parameters described above are required where the ground running or testing of engines is required urgently and could not have been foreseen; it may be necessary to test as a matter of public or aircraft safety; where the delay of the test or ground run of the engines would endanger public safety or cause severe and unacceptable logistical disruption to aircraft passengers or the aircraft operator; or the GRE is undergoing routine or emergency maintenance.

34. The applicants Environmental Statement Addendum states that the GRE is designed to accommodate the majority of aircraft landing at Norwich International Airport. There has been a single instance of an aircraft larger than a B 737-900 series (for which the GRE is designed) requiring to have its engines tested in the 12 months up to and including November 2011.

35. The applicant further advises that the GRE internal clearance is 45m and the wingspan of the largest aircraft currently entertained at NIA (B 757-300) is 38 05m. The largest aircraft type that has serviced occasional holiday charters at NIA is a B 767, which would not fit into the GRE but one has not operated into NIA for the past 2-3 years. There has not been a test of anything larger than a B 757 in the past 4 years. The applicant states that a B 767 would not fit into any existing hangar at the airport so currently, the prospect of larger aircraft that cannot be accommodated in the GRE being subject to MRO (and therefore high powered engine testing) would not be feasible. Testing of larger aircraft than the 737 series is a rare occurrence. It is not viable to design a GRE for larger aircraft than would normally be tested and noise attenuation properties decrease if smaller aircraft are tested in an oversized facility.

36. The ES Addendum states that it is not anticipated that lengthy tests would take place just below high power as engines are tested to check for any defects during conditions that emulate flight. Broadly engine tests consist of:

- Engines running at idle (this varies between aircraft but is around 60% of full power dependent on weather conditions) in order to test for particular conditions such as oil and fuel leaks.

- Engines are then increased without pause to above 70% to undertake other systems

tests (this is the point at which it becomes a ‘high powered test’).

37. Testing in the main therefore does not take place between idle and high power as there are no systems to check at these power settings. Most Boeing 737 engine checks are carried out at above 70% of full power. Some systems checks associated with the Fokker 70/100 are carried out below 70% but these relate to generators. Most system checks relating to engine installation type checks would need to be carried out above 70% of full power.

Content of the Planning Application

Supporting Material

38. The supporting material submitted with the application consists of - the relevant plans and elevations, Planning Statement, Design & Access Statement (DAS), Statement of Community Involvement and an Environmental Statement (ES) (which presents the findings of the EIA).

39. It is a legal requirement under the Planning and Compulsory Purchase Act 2004 (S.42) for applications of this nature to be accompanied by a DAS. The DAS is considered to adequately address the requirements of Circular 01/2006 (Guidance on Changes to the Development Control System) relating to the content of a DAS.

40. The Town and Country Planning (Environmental Impact Assessment) (England) Regulations 2011 (the “Regs.”) require that any proposed development falling within the description of a “Schedule 2 development”, within the meaning of the Regs., will be subject to an EIA where such development is likely to have ‘significant’ effects on the environment by virtue of such factors as its nature, size or location (Regulation 2(b)). The proposed development does not fit precisely into any of the descriptions in Schedule 2 of the Regs. and the EIA was submitted voluntarily by the applicant.

41. It should be noted that Officers consider that the development does have the potential to give rise to significant environmental effects, and, therefore, the application is considered to constitute ‘EIA development’. The way in which the City Council administer, assess and determine EIA development applications must comply with the Regs.

42. The City Council provided a Scoping Opinion in accordance with the Regs., to the applicant on 19th September 2011 and which was informed through consultation with statutory and other consultees. The Scoping Opinion described the matters that needed to be addressed in the EIA.

43. Officers reviewed the initial ES submitted with the planning application and requested additional information from the applicant in July and September 2012 in regard to deficiencies associated with the noise assessment aspect of the EIA. In October 2012, the applicant submitted an addendum to the EIA (‘further environmental information’) and other supporting material including a further noise assessment of the low powered engine testing associated with the proposal.

44. Whilst some deficiencies have been identified in regard to noise, additional information is before the Council that addresses this and as such, impacts on the environment arising from the proposal can be understood. The EIA is now considered to have addressed the requirements of the EIA Regs.

45. **Engine Testing at Other UK and European Airports**. The ES addendum provides limited information in the application relating to how other airports conduct engine tests (see

Appendix 4).

The Applicants Noise Assessments

The EIA Noise Assessment

46. The applicants EIA noise assessment has relied upon World Health Organisation (WHO) guidelines as the foundation for their noise assessment. The WHO guidelines set a threshold of 55 dB (decibels) at which point it is anticipated a serious annoyance could occur. The applicants have though chosen to adopt an interpretation of WHO provided by a report from the National Physical Laboratory (NPL) (commissioned by Department for the Environment Transport and the Regions in 1998). The interpretation states that noise levels below the WHO thresholds are negligible and that exceedance of the thresholds do not imply a significant impact. In addition, NPL states that it is possible that significant impacts do not occur until much higher degrees of noise exposure are reached beyond 55dB. In seeking to define what those 'higher degrees of noise exposure' are, the applicants noise assessment methodology has been informed by BS4142 and the now extinguished PPG24, which describes changes in noise levels of less than 3dB as not perceptible and changes of 10dB, as a doubling in loudness. From this the applicant has extrapolated noise thresholds for significant impacts in the EIA where <55dB is a negligible impact; 55 to 60dB is a minor adverse impact; 60 to 65 dB is a moderate adverse impact and >65dB is a major adverse impact.

47. The applicant has provided background noise data from unattended fixed monitors and through attended surveys. The background noise information presented in the ES is set out in the tables below expressed as LA90 (being the noise level exceeded for 90% of the measurement period). The locations are illustrated on **Appendices 5** and **6**:

Location	**Fixed noise monitors (background noise level LA90 dB)**
Bush Road, Hellesdon	42.2 – 64 (Day) 33.0 – 57.3 (Night)
Airport, Eastern Boundary	31.1 – 48.8 (Day) 28.0 – 42.5 (Night)
Brayfield Way, Catton	38.9 - 49.5 (Day) 34.1 – 43.9 (Night)

(Survey Locations Shown on **Appendix 5**)

Location	**Surveyed Locations (background noise level LA90 dB)**
Nr. Old Catton Cemetery (Location A)	42.7 – 51 (10.30–4.00)
North of Bush Road, Hellesdon (Location B - West of Airport and A140)	61.9 – 70.0 (10.00am–3.00pm)
Old Norwich Rd, Horsham (Location C)	39.8 – 43.5 (11.30-14.30)
Near the Junct. of Quaker Lane & Buxton Rd (Location	43.5 - 50.6

D)	(12.00-17.00)

(Survey Locations Shown on **Appendix 6**)

48. The noise assessment presented in the original ES was based on high powered engine test data from the testing of a Boeing 737-700 (undertaken on the 15th June 2011 – 'the first test') but advice provided to the applicant by the manufacturer of the aircraft has confirmed that the older plane (737-400) is the louder. The prediction of noise impacts set out in the ES Addendum is based on data secured from high powered engine test undertaken for a Boeing 737-400 (the noisiest aircraft that operates out of NIA) undertaken on the northern apron (in the open) in June 2012 (the second test').

49. The ES Addendum advises that the second test was undertaken to ensure a worst case scenario could be considered and also to test in truly downwind conditions. Noise effects are worse downwind from the noise source. Measurements of the test were undertaken from just outside the eastern boundary of the NIA site, adjacent to the airport's fixed monitor, and adjacent to Quaker Farm (see locations on the plan at **Figure 2**), the nearest property to the test site. The survey locations were some 310 metres and 615 metres from the aircraft test site. The two survey locations were directly downwind of the test site during the duration of the test – the wind direction being 320 to 350 degrees (approximately from the north-west). The wind speed was 2 metres/second. The aircraft was tested facing into the wind such that maximum noise emission levels would be expected at the two test locations.

50. Noise measurements were taken with the engine held at different power levels including ramping the engine up to high power; holding the engine at high power; holding the engine at maximum power; for different periods of time. This data was then used to calculate an average noise emission level over a period of 1 hour. This is expressed in the ES as 'LAeq1hr'. The LAeq1hr emission level recorded at the eastern boundary of the airport for the second test was 71.8 dB (this was +2dB higher than the data from the first test).

51. This sound level was used within a predictive noise model (SoundPLAN) to identify noise emissions from a particular source at sensitive receptors taking account of distance, topography and any mitigation provided (such as noise barriers) and shown on noise contour maps in the ES (these sensitive receptors are shown on the plan at **Figure 2**). This can be done for aircraft tested on the site under different operational conditions and wind directions and at different locations within the airport.

52. The data was used to model noise emissions on sensitive receptors in the following scenarios:

    - Aircraft testing in the open at the Development Site at 240 degrees (i.e. facing out of the GRE) and 60 degrees (i.e. facing into the GRE) to enable comparison with the impact of noise emissions from engine tests at the unauthorised location on the northern apron.

    - Aircraft testing at the Development Site (at 240 degrees and 60 degrees) with the GRE in place to understand and demonstrate the degree of noise attenuation provided by the GRE.

53. As sound impacts upon the façade of a property its level may increase by some 3dB. The results from the assessment are presented in the table below including the 3 dB façade correction:

Location (see Figure 2)	**Noise emission level,**	**Development site – No GRE**	**Development site – No GRE**	**Developed site – With**	**Developed site – With**

	derived from test data (LAeq1hr dB)	**(aircraft to 240 deg)**	**(a/c nose to 60 deg)**	**GRE (a/c nose to 240 deg)**	**GRE (a/c nose to 60 deg)**
Quaker Farm	72.2	67.0	67.9	60.3	56.0
Spixworth	57.7	56.9	53.6	55.1	50.1
Horsham Saint Faith	60.2	58.7	58.8	53.6	53.6
SE of Airport (Catton isolated houses)	59.2	60.1	65.8	53.3	61.3
Hellesdon	47.1	51.3	50.4	50.4	50.3
Old Catton	55.1	57.9	54.7	56.0	54.1
East of Airport (Near Spixworth)	57.8	59.1	54.9	56.1	51.3

54. The applicant's assessment concludes that:

- Moving testing of aircraft from the current unauthorised area on the northern apron to the proposed Development Site would result in a 5 dB reduction in noise at Quaker Farm.

- The provision of the GRE would further reduce noise emission levels at the Quaker Farm assessment location – by 7 dB - when the aircraft is tested facing out of the GRE (to 240 degrees); and 12 dB when the aircraft faces into the GRE (to 60 degrees).

- Noise emissions would constitute a moderate (significant) adverse impact at Quaker farm (based on the thresholds and degrees of significance described by the applicant).

- Noise emission levels at other locations such as Spixworth, would not experience such high reductions in noise emission levels as a result of the GRE. However, noise emission levels in these areas would be much lower than in the area of Quaker Farm due the greater separation distance and are reduced to a minor adverse impact.

- Noise emission levels to the south-east of the Airport at isolated houses in Catton would experience similar noise emission levels and with the aircraft at 60 degrees would generate a moderate (significant) adverse impact.

- Noise emission levels at Horsham Saint Faith, Hellesdon and Old Catton would be low impact due to the greater separation distance to the Development Site.

<u>BS4142 Noise Assessment of Low Powered Engine Testing</u>

55. The BS4142 methodology for assessing noise is used for indicating the likelihood of complaint arising from noise of an industrial nature in a mixed residential and industrial area. It assesses the likelihood of complaints arising by comparing the existing background noise level with measured or calculated noise from a specified noise source. A penalty is included in the assessment of the noise impact if the specified noise source attracts attention due to its character or irregularity, for example tonal features or qualities that are rhythmic or cyclic.

56. The applicants BS4142 assessment, whilst not forming part of the ES, considers the same sensitive locations in terms of noise impact chosen in the ES and draws upon the noise emission data from engine tests as presented in the ES / ES Addendum.

57. The assessment describes how data from the first engine test as presented in the ES, shows that <u>low powered</u> noise emissions were 11dB lower than the combined high and low

powered emission over 1 hour. The BS4142 assessment assumes that this 11dB reduction for low powered testing also applies for the second test. The noise emission data in the ES / ES Addendum is for noise experienced at the façade of a building. BS4142 requires that during the day, assessments are undertaken no closer than 3.5 metres from properties. On this basis the applicants BS4142 assessment states that a further reduction of 3dB should be applied (therefore 14dB in total). Noise emission levels have been presented on this basis, for low powered noise emission levels at the sensitive receptors with mitigation in place and at 240 and 60 degrees compared against background noise levels (these are provided below).

Location	**Development Site with GRE (240 Degrees) (LAeq1hr)**	**Development Site with GRE (60 Degrees) (LAeq1hr)**	**Typical Background Noise Level (BNL)**	**Difference**
Quaker Farm	46	42	37*	9 and 5
Spixworth	41	36	37**	4 and -1
Horsham St Faith	40	40	42	-2 and -2
SE of Airport (Catton isolated houses)	39	47	44	-5 and 3
Hellesdon	36	36	53	-17 an -17
Old Catton	42	40	44	-2 and -4

* The lower recorded bnl has been assumed / ** The boundary bnl has been assumed.

58. The assessment states that these figures do not include an additional 5dB for tonality or intermittency, but it does acknowledge this should be applied at locations such as Quaker Farm and parts of Spixworth where specific noise levels exceed the background noise (on this basis, if the 5dB is added at Quaker farm, the noise emission will exceed the background by 14dB for aircraft tested at 240 degrees and by 10dB at 60 degrees). The report goes on to state that based on the BS4142 assessment there is the likelihood of complaints at Quaker Farm.

Employment and Contribution to the Local Economy

59. The Planning Statement indicates that NIA facilitates employment of approximately 1,000 full time equivalent (FTE) workers across a range of businesses including Norwich Airport Ltd., KLM UK Engineering, (KLMUKE), Bristow Helicopters, Saxon Air and Air Livery. Operations include scheduled and charter flights, maintenance, repair and overhaul of aircraft, and helicopter services to oil and gas platforms in the North Sea. The principal employer at the airport is KLMUKE which currently employs 341FTE staff. The ES accompanying the planning application states that 324 of these staff live in Norwich although there is no data provided in the application to support this. KLMUKE also employ up to 100 contract staff at any one time at the airport. The ES indicates that between 99 and 128 indirect jobs are likely to exist as a result of KLMUKE MRO operations at the airport which would bring the total potential employment effect of the MRO operations to between 440 and 569.

60. KLMUKE's MRO services range from maintenance support through to end of lease handback checks. Heavy maintenance is carried out at for 24 hours a day, 7 days a week for 364 days of the year. KLMUKE's workshops are fully approved by the Civil Aviation Authority. The workshops service Fokker 50, Fokker 70, Fokker 100, BAe 146 and Boeing 737 aircraft. Aircraft are not authorised to take off after heavy maintenance until engines have been tested for safety reasons.

61. The applicant advises that engine tests are carried out following maintenance activities

normally when components fitted onto, or that have a direct effect on engine performance and reliability, are disturbed, repaired, modified or replaced. Engine ground runs may also be necessary to identify faults prior to the aircraft being inducted into the hangars for maintenance. Engine ground runs are an absolute requirement to ensure these components operate within very strict manufacturer guidelines. Following the completion of all maintenance tasks and once engine ground runs have taken place satisfactorily then the aircraft can be released back into service in accordance with European Aviation Safety Agency (EASA) regulations. Therefore, engine tests are an essential and integral part of MRO operations.

62. Information has been provided to the Council by the applicant relating to KLMUKE's labour requirements for a single contract for taking an aircraft through the MRO process culminating in an engine test.

    - The total number of man hours worked on the aircraft – 7700 hours.

    - Total number of hours on all works affecting the engines – 220 hours.

63. The Council has been advised that this contract is not representative of all works but is at the higher end of the range of values of contracts.

64. KLMUKE have also provided information stating that the total person hours expended on MRO activities involving engine tests in 2012 were 850,000 including support staff.

65. The applicant states at paragraph 13.109 of the ES that if the development was not permitted, it is likely that the Council would take enforcement action against the unauthorised engine tests on the northern apron and as a consequence engine tests would cease at the airport. The ES goes on to state that this would impact MRO operations and is likely to lead to the loss of KLMUKE and potentially other air worthiness related maintenance at the airport with the likelihood that KLMUKE would be forced to close down MRO operations at Norwich International Airport and relocate leading to further job losses in the supply chain and possibly within other businesses that rely on KLMUKE or Norwich International Airport more generally.

    The Applicants Consideration of Alternative Sites

66. NIA have described in their application the potential alternative locations and technologies for engine tests within the confines of the operational area of the airport. The ES and ES addendum describe the site optioneering exercise carried out by the Airport. A constraints analysis of the airport was undertaken to identify those areas that it is not possible to site and operate an engine test facility due to airport safeguarding, safety, operational and land ownership constraints. The outcome was to identify 2 potential locations within the NIA operational area where a testing facility could be operated in and then to consider alternative sites within these locations. These 2 locations and alternatives sites are identified on the extract from the ES at **Appendix 7** as described below:

    Location 1 - in the northeast corner of the airport, north of the operational runway and adjacent to the northern and eastern airport boundary. Site Option 1A comprises the northern apron where engine tests are currently taking place. Site Option 1B lies immediately to the east of Site Option 1A. Site Option 1C is to the west of the northern apron adjacent to Horsham St Faith.

    Location 2 - located in the south-eastern corner of the airport. Site Option 2A is the western half including the area used by Bristow helicopters. Site Option 2B is the eastern half

adjacent to the airport perimeter. The currently consented area for engine tests straddles the boundaries of sites 2A and 2B but is in the main, situated within site 2A.

67. A baseline noise assessment was carried out in parallel to this exercise. This established that some form of noise attenuation / screening would be required with any option. A multi-site option of having more than one engine test facility at the airport was discounted early on cost grounds as building more than one structure would not be financially viable. The Site Options were appraised with respect to noise first, as this was the primary criterion for assessment. Following this, the Site Options were appraised with respect to the other environmental disciplines such as Local Air Quality, Landscape & Visual, Archaeology & Built Heritage, Socio-Economics.

68. The noise optioneering concluded that, with mitigation in place, Site Option 2A would be the most suitable location for the testing facility. However, this area has been designed for, and is used by, Bristow helicopters. The applicant advises that Bristow currently use this area for helicopter operations, including helicopter maintenance, helicopter parking, passenger embarkation and their Southern North Sea administration. Flights depart from here to access the gas rigs in the Southern North Sea. The successful management of the contracts by Bristow for the oil and gas companies generates significant revenue for the airport. The Bristow contract comprised 10.1% of the airport's entire revenues during the financial year 2011/12. Locating the testing facility here would mean that the conflicts in use would make helicopter operations unsafe, thereby necessitating relocation elsewhere by Bristow. It is not possible to relocate them elsewhere on the airport as there are no alternative empty hangar premises available that would grant appropriate access rights or a link to the airport terminal buildings where their passengers are processed.

69. There are current land availability constraints and the cost of constructing a new facility for Bristow, even with the availability of a suitable site is estimated to be of the order of £3.2 million. This is based on the cost of partial improvement works that were undertaken by Bristow in 2010. The combined effects of these two elements, i.e. the inability to operate in the same location and the restrictive cost of relocation, mean that Bristow as an important revenue generator would be lost to the airport. The investment and jobs created by this contract would also be lost if Bristow had to be moved to accommodate a testing facility. The applicant states that this would be detrimental to the viability of the airport and also to the local economy and the applicant considers it unviable to locate the testing facility at Site Option 2A.

70. Of the remaining sites, Site Options 1A, 1B and 2B were assessed as having minor adverse noise effects on sensitive receptors and are the next most suitable sites on noise grounds. Site 1C would lead to moderate adverse effects with respect to noise so is not considered to be a suitable location. Site 2B was dismissed on the grounds that engine testing in the south-eastern part of the airport has historically led to noise complaints from the residents of Catton. Site 1B was preferred over 2A on cost grounds given the availability of a large area of existing concrete apron. Whilst site 1A and 1B would both give rise to minor adverse noise effects, 1B scores better than 1A in terms of the secondary environmental effects.

Alternative Technologies

71. In terms of alternative noise attenuation methods, the applicant has considered soil bunds and the acquisition of a second hand GRE. In addition, different GRE sizes and layout have been considered. A new GRE was considered to be the most appropriate option. The initial design chosen comprised a three sided enclosure with a blast deflector to the rear. This was further refined to enable aircraft to be tested in a range of wind conditions. Historic wind

velocity data was analysed in order that a GRE could be designed with the greatest possible flexibility whilst still providing a high level of noise attenuation. The first iteration considered was with 3 straight walls and a fixed blast deflector to the rear. The second iteration provided a greater level of usability by installing air vents and a movable blast deflector at the rear of the GRE. A curved rear wall was included to accommodate the moveable blast deflection system mounted on rails. This final iteration enables aircraft to be tested nose-in and nose-out in a greater variety of wind conditions.

Representations Received

72. The application has been administered by the Council under the Town and Country Planning (Development Management Procedure) (England) Order 2010 and the EIA Regs. The Council's EIA Scoping Opinion was placed on the public register on 19th September 2011 in accordance with Regulation 23 of the EIA Regs. Initial consultation on the application took place between 27th June 2012 - 18th July 2012. Following receipt of the further information, additional consultation took place between 23rd October 2012 - 13th November 2012.

73. Nine Parish Councils have been notified in writing. In addition, a number of residences and businesses around the airport have also been notified. 11 letters of representation have been received to date relating to the two stages of consultation described above. This includes two specialist reports prepared on behalf of a neighbouring resident relating to noise. The letters and reports received include reference to the issues as summarised in the table below.

Parish Council	**Representation**
Hellesdon PC	First consultation - Support. Observations provided on second consultation: 1. The ambient levels at the site boundary should remain as present. 2. Any aircraft should be positioned within the bay to provide the maximum noise reduction on every occasion.
Old Catton PC	No objection.
Horsham & Newton St Faiths PC	First Consultation - Pleased with the new proposals but will not support the application unless restrictions are placed on the times testing is allowed. Unable to comment further given the technical nature of the application material and acknowledge that Broadland Council have commissioned specialists on the matter. Second Consultation – No further comment.
Spixworth PC	No objection. Acknowledges that the airport has made significant moves to satisfy the Council's concerns about the impact engine testing has on the quality of life of its

	residents. Acknowledges that the facility is an integral part of the airports activities and provides significant employment opportunities.
Horsford	Support The Council are mindful of the employment implications of such a facility and the wider effects on the local economy.
Sprowston	No objection
Taverham	No objection.
Beeston	No response.
Drayton	No response.
Issues raised by local residents	**Response**
Noise Disturbance	
- None of the noise data supplied means anything until the facility is actually built and the actual effects are observed.	The Council's decision has to be based on the noise assessments that have been presented to it as part of the application (see paragraphs 46 – 58 and 108 - 132).
- Helicopter and other aircraft activity contribute to ambient noise levels.	20, 21.
- Engine testing has meant that residents have been subjected to intolerable disturbance some 'legal' and some 'illegal'.	See paragraphs 4, 108 – 132, 157 – 183.
- A BS4142 Noise assessment methodology is an appropriate method for assessing noise from the engine testing facility given that the area around the airport is characterised by mixed residential and industrial land uses and that noise emitted from engine testing can be only be described as 'industrial'. - Background noise readings should have been taken at Quaker Farm. - The noise methodology adopted in the EIA uses WHO guidelines as interpreted by NPL. This raises the threshold at which a noise nuisance can be experienced by 10 decibels to 65dB (i.e. 10 dB above the onset point for critical health effects). This is contrary to current government thinking and the British Standards Institute which set 55 dB as the upper limit of acceptability for noise emissions.	See paragraphs 108 – 132, 157 – 183.
- The proposed noise mitigation in the application should be compared with other facilities around the UK and in Europe.	See paragraph 45 and Appendix 4.
- Predicted noise levels using the BS4142 assessment method, even with mitigation, show significant excess noise emissions will arise at Quaker Farm.	See paragraphs 108 – 132, 157 – 183.

- Hours of operation proposed in the application will allow significant and sustained periods of unreasonable noise impact and little opportunity for respite. - The extent of engine testing proposed in the application would result in an adverse change in the noise environment. - The weight to be applied to the guideline values for noise impacts provided by the World Health Organisation (WHO) should be given little weight. - The proposals disregard the need for respite from noise during important amenity periods (evenings, weekends). - A BS4142 assessment of noise impacts from the facility, predict levels that will give rise to complaints at Quaker Farm. - The noise assessment submitted with the application does not adequately address the 'change' in the noise environment associated with the proposed development. - The applicant has used a typical noise background level for Quaker farm of 47dB whereas detailed noise monitoring at that location shows a typical background noise level as 35dB and as low as 30dB at certain times of the day. - The applicants BS4142 noise assessment ignores the 5dB penalty that should apply for the tonal nature of noise impacts and therefore predicts a lower noise impact at Quaker Farm than would be truly experienced. - Many of the surrounding properties were in existence prior to engine testing being introduced. - The noise impact for the residents of Horsham St Faith has been understated. - Issues relating to noise associated with NIA, comes from a small number of vociferous residents who are generally anti-airport.	
Local Economy	
- Economic arguments (jobs) should not take precedence over 20,000 resident's rights to enjoy their homes and gardens.	See paragraphs 149 - 152 of this report addressing economic arguments. Whilst the entire populations of the parishes of Horsham and Newton St Faith, Spixworth and Old Catton and the village / suburb of Hellesdon could amount to in the region of 20,000 people (2001 census), paragraphs 121 – 133 and 167 – 169 of this report show that this is a significant overestimate of the number of properties that would actually be

	adversely affected by noise from the proposed development. Further, the adverse effects must be weighed up against the economic benefits of the proposal (which is addressed in paragraphs 174 – 175 of this report).
- Concern that if KLMUKE are unable to carry out engine testing at NIA, they would have no business. This would have far reaching effects for employees and localised suppliers.	See paragraphs 149 – 152.
Hours of Operation Hours of operation should be restricted to: - 8am to 6pm weekdays, 9am to 4pm Saturdays and none on Sundays; or - 8 am to 2 pm on Saturdays and 9am – 12 pm on Sundays. - Support the use but restrict the operation until the noise benefits are proven. - The Council should place even greater restrictions on engine testing than that currently taking place (including non-testing days). - Support the requirement for businesses to develop within the airport and accept that the proposal represents an improvement to open air testing. Notwithstanding, the permitted hours of testing and associated noise pollution is of a concern and will have a massive impact on a families quality of life. - At the very least, Bank Holidays should be free of engine testing.	See paragraphs 157 – 183.
Other - The Council being a major shareholder in the airport must provide a significant conflict of interest.	None of the Officers involved in assessing the application or Members involved in determining it, have any responsibility in regard to the Council's shareholding.

Consultation Responses

74. **Norwich City Council Economic Development:** Economic Development expresses strong support for the proposals. Engine testing is a fundamental part of the core business of one of NIA's key anchor tenants (KLMUKE) which employs 350 people. Retention of the business is essential to the continued growth and success of NIA and the business plays a significant role in the local economy in terms of supply chain activity, sector development and highly skilled jobs. Approval of the development and retention of the facility will provide the scope to attract new business and secure high quality employment.

75. **Norwich City Council, Environmental Health**:

Noise

76. The following comments were provided by the Council's EHO on the original ES received by the Council 19th June 2012:

- There is no industry standard for assessing noise of this nature. The applicants noise assessment methodology is not based on published criteria, which will leave it open to question. However given the noise levels predicted and that it is not a continuous noise, the thresholds and their justification seem reasonable.

- The applicant has chosen not to use British Standard 4142 as method for assessing the noise. This is a method for rating industrial noise affecting mixed residential and industrial areas. It relies upon understanding the existing underlying background level of noise in a residential area and then compares this against the proposed noise of the industrial activity, and gives an indication whether complaints are likely or not. It is fair to say that if a BS4142 assessment had been undertaken in relation to the proposed noise, then the outcome would be that complaints are likely. (It should be noted that the applicant has subsequently submitted a BS4142 assessment).

- The provision of the GRE is welcomed as the predicted performance offers a significant improvement in noise levels than if it were not included, and it should be recognised that it is unlikely that any greater levels of noise attenuation could be realistically achieved with any other method.

- Although the main thrust of the noise evaluation is regarding a threshold test, the application does also make reference to a comparison between the existing ambient and proposed noise levels. The existing levels consist of 2 sets of data taken in April 2011 and January 2012.

- The applicant has submitted details of the structure of the ground run enclosure which include sound baffles made of perforated metal panels in filled with absorptive material. No requirement for maintenance has been submitted for these baffles and I would be concerned that there may be a gradual degradation of the absorptive material and a corresponding decrease in performance over time.

- The applicant has suggested a self-imposed restriction on the amount of high power testing that may take place in any one hour/day. Compliance with this will serve to ensure that the noise effects on the surrounding residential properties is minimalized, however there would be no way of the Local Planning Authority independently verifying compliance without recourse to NIA, as there would be no way of knowing what the engine power of any one test was without asking.

- Notwithstanding the above and the requirement for further details, I would recommend at this time that if permission were granted consideration should be given to conditioning the permission in the following areas.

    1. Engine testing should only take place with the aircraft entirely within the confines of the GRE.

    2. Aircraft types should be limited, in particular no military aircraft.

    3. Only one engine tested at a time (although 2nd engine may be on idle).

    4. An independently verifiable method of controlling the amount of high power engine testing/limitation on noise emissions.

77. Further comments were provided by the Council's EHO following receipt of the MAS Noise Assessment August 2012 and the applicants ES Addendum (including updated EIA noise

and BS4142 assessments) October 2012:

- If permission was granted for the proposal in its current form, it may allow for an almost continuous noise. In practical terms this is unlikely to be the case.

- The BS4142 assessment submitted by the applicant and by the local resident should be viewed in conjunction with other noise assessment methodologies for this application given that it is aimed at being used for more continuous noise sources, or ones that cycle on and off within the period of an hour and continue like that throughout the day. BS4142 would be more appropriate to assess the more continuous nature of low powered engine testing. It is not a sufficient method for rating noise where there are bursts of higher levels of noise that may only occur a few times a day, and not at all on some days.

- The background noise levels (BNL) at Quaker Farm are likely to be more typical of those presented in the noise report prepared on behalf of the residents of Quaker Farm. The applicant has presented data in the ES from measurements taken in the vicinity of the farm but some way from it. One set of data is taken from the monitor at the edge of the airport boundary near to the farm and this is likely to be more dominated by the noise generated by the airport. The other data is from some shorter term measurements taken in Quaker Lane close to Buxton Road. These may have been influenced by the greater level of traffic on Buxton Road, which may not be so apparent at the farm.

- In their BS4142 assessment the applicant has used a figure of 37dB LA90, which is their lowest recorded level. Although the MAS data shows a lowest level of 31.3dB there is a wide range of values up to 42dB and therefore the 37dB used by the applicant is a reasonable typical reflection of the BNL at the farm.

- The GRE will perform differently depending on the frequency of the noise it has to deal with. In general terms it will deal less effectively with lower frequency sound as this will have a tendency to bend around/over the barrier created by the GRE and also the absorptive material will be less effective. The higher frequency sound will have a lesser tendency to travel around and will more easily be absorbed by the material in the GRE. This is why the data presented by the applicant gives different levels of sound attenuation by the GRE depending on the orientation of the aircraft. When the aircraft is facing into the GRE the higher frequencies of noise generated at the front will be better dealt with than the lower frequencies generated to the rear if the aircraft was 'backed in'. This difference is shown to its greatest effect at Quaker Farm because the overall effectiveness of any sound barrier is better the closer the receiver is to the barrier.

- Unless the frequency spectrum of the noise generated at either the front or rear varies greatly depending on whether the engine is at low or high power, which I have no reason to believe that it will, then the amount of attenuation provided by the GRE will be the same at low or high power for the same aircraft orientation i.e. the proposed attenuation of 7dB provided at Quaker Farm when the aircraft is facing out of the GRE and on high power, will still be in the region of 7dB when the same aircraft is run at low power.

- Given the very short nature of the high powered element of an engine test I am satisfied that the methodology used by the applicant to quantify the impact at the various locations in the vicinity of the airport gives a reasoned assessment and that the mitigation proposed by way of the GRE and the 90 minute limit in any one day justifies the impact proposed given that the engine testing is and has been an integral part of the operation of the airport.

- Of greater concern I believe is the impact of the low powered element of the engine testing. Although the noise generated is at a lower level, theoretically the noise could be generated for 12 hours a day, every day. The 5dB penalty is more than likely to be appropriate for this type of noise and the BS4142 assessment provided by the applicant shows that the noise is likely to give rise to complaints for some residents. The level of impact generated by the low powered testing for the theoretically possible amount of time could be adverse. This theoretical level of use is highly unlikely, however, if permission is granted the numbers of tests possible should be restricted to ensure that the theoretical level of use is nowhere near achievable.

- For operational reasons I would understand that the engine testing may not be able to function effectively if the number of tests on any one day were overly restrictive, given that the average over the year is likely to be less than 1 per day but alternatively there could be several on one day and then none for a significant period. Additionally, it would be difficult to nominate specific days being set aside as non-testing days, however, it would be useful for the residents in the vicinity to be able to plan around the disturbance if they could be given a clear understanding of when testing is likely (or not) to take place.

Air Quality

78. The assessment is clear and follows the form as suggested in the EIA scoping report. Suitable assessment methods and factors for determining significance have been chosen, along with reference to appropriate technical and policy guidance etc. The Council's own monitoring has been referenced in the report, along with that of BDC, which is also appropriate. The conclusion is that the impact on relevant receptors for contributions of nitrogen dioxide and pm10 by the proposed development will be insignificant. The conclusion that no exceedances of the air quality objectives are predicted as a result of this development are accepted.

79. **Norwich City Council, Landscape Officer**: No objection. Potential for visual mitigation should be explored.

80. **Natural England**: No objection.

81. **English Heritage**: No objection. Appropriate conditions to be imposed to monitor noise levels following construction.

82. **Historic Environment Service Norfolk County Council**. No comment.

83. **Environment Agency**: No objection. Recommend the imposition of a conditions relating to SUDS drainage and standard contamination conditions.

84. **Norfolk County Council, Highways**: No objection subject to implementation of the applicants Construction Traffic Management Plan (CMTP) which proposes the construction of passing bays on Bullock Hill through Horsham St Faith. The CMTP and associated works are to be secured through the imposition of conditions and a Section 278 Highways agreement between the developer and the Highways Authority.

85. **Broadland District Council (BDC)**: BDC initially reported the application to their Planning Committee on 10th October 2012. The report states that at no property was there considered to be a significant adverse impact on health from noise associated with high powered engine testing. However, at the nearest sensitive property (Quaker Farm) there is likely to be a significant adverse impact on quality of life during high powered testing of up

to 90 minutes per day, with the potential for moderate impacts on residents in Spixworth and Horsham St Faith (depending upon variable factors such as wind direction). Notwithstanding, the report concluded that the need for NIA to undertake engine tests was a crucial aspect of its commercial operations and the economic benefits associated with this outweighed the significant adverse impact on the quality of life of the residents of Quaker Farm. The Council resolved to delegate to the Head of Planning the authority to raise no objection to the application, subject to:

- The satisfactory assessment of the anticipated addendum to the ES (which BDC noted would include a BS414 assessment of noise from low powered engine testing).

- Imposition of conditions restricting the operation of the engine testing facility to the parameters set out in the application and in addition, no engine testing on Bank Holidays.

86. Following receipt of the ES addendum, the application was reported to BDC Planning Committee again on the 7th November. BDC noted the +2dB increase in predicted noise levels at receptors based on an engine test of the louder 737-400. This would bring Quaker Farm into the moderate adverse impact on health category during periods of high powered testing. In addition, the BS4142 assessment concluded there would be a likelihood of complaints arising at Quaker Farm as a consequence of noise emissions from low powered testing. NIA had also asserted that placing the Bank Holiday restriction on engine tests would have a potentially significant adverse impact on the commercial operation of the airport. In concluding, BDC maintained their earlier position in that the economic benefits outweighed the adverse impacts on amenity and that the Bank Holiday restriction should not be imposed. BDC resolved to raise no objection to the application subject to the imposition of conditions restricting the operation of the development to the parameters set out in the application.

87. **Norwich Airport Consultative Committee:** No objection.

ASSESSMENT OF PLANNING CONSIDERATIONS

Relevant Planning Policies

National Planning Policy Framework (NPPF) - March 2012
Paragraphs 19, 21, 23, 33, 123, 197, 203.
Noise Policy Statement for England, March 2010
Paragraphs 2.23 and 2.24.
The Future of Air Transport (The Aviation White Paper) 2003
Paragraph 11.97
The Air Transport White Paper Progress Report 2006
Annex A
The Draft Aviation Policy Framework, July 2012
Paragraphs 2.2 and 4.1.
Joint Core Strategy (JCS) for Broadland, Norwich and South Norfolk 2011
JCS Objective 3: Economic growth and diversity (NIA is listed within a range of key locations in the Norwich Policy Area for strategic employment growth)
5 The Economy
6 Access and transportation
9 Strategy for growth in the Norwich Policy
10 Locations for major new, or expanded, communities in the Norwich Policy Area
12 The remainder of the Norwich urban area, including the fringe parishes

15 Service Villages
17 Smaller rural communities and the countryside

Saved policies of the adopted City of Norwich Replacement Local Plan 2004

TRA1 Norwich Airport development
TRA2 Airport operational boundary
EP5 Air Pollution emissions and sensitive uses
EP8 Noise amelioration measures at Norwich Airport
EP16 Water conservation and sustainable drainage systems
EP17 Protection of watercourses from pollution from stored materials, roads and car parks
EP22 High standard of amenity for residential premises
EMP2 Growth of existing businesses
HBE12 High standard of design, relationships with surroundings, analysis of visual impact

Norwich Local Plan: Development management policies, development plan document, Regulation 19 pre-submission, draft plan for consultation, August 2012

DM27 Norwich airport. Development will be permitted for a) airport operational purposes b) uses ancillary to the function of the airport; and c) facilities providing improved transport links.

Principle of Development

88. Section 38(6) of The Planning and Compulsory Purchase Act 2004 requires that the determination of planning applications must be in accordance with the adopted development plan unless material considerations indicate otherwise.

89. The JCS and saved policies of the City of Norwich Replacement Local Plan (RLP) 2004 constitute the development plan governing this proposal. Whilst less weight can be afforded to the Development Management policies of the emerging Norwich City Local Plan, some weight can be attached to them and they remain of relevance.

90. The JCS sets out the strategic planning context for NIA, identifying it as a principal provider of international connections from the area. It supports improvements at the airport to expand business and leisure opportunities and provide for expansion of services to a wide range of international and domestic destinations.

91. Policies within the JCS and saved policies of the City of Norwich Replacement Local Plan (RLP) 2004 strongly support the continued operation of the Airport and make provision for employment growth to occur subject to certain criteria.

92. Policy TRA1 of the RLP states *'Norwich Airport will continue to develop as a regional airport of significant importance to the local economy. Proposals for the growth of the Airport will be assessed against: … consistency with the national airports policy…… the environmental impact of its development….'*.

93. Policy EMP2 of the RLP states that *'Proposals for expansion of existing businesses will be permitted, provided that…. there is no adverse environmental or visual impact'*

94. Engine tests are an essential part of the operation of the airfield and specific reference to this activity is made within saved policy EP8 of the RLP. The retention of KLMUKE at the airport is understood to be dependent upon the continued ability to undertake engine tests in connection with their MRO operations at the site.

95. In particular saved Policy TRA2 of the RLP states *'….operational development for Airport purposes and for the purpose of transport interchange with other modes of travel will be*

acceptable…'.

96. However, policies within the RLP and JCS also refer to environmental considerations and there is a need to balance these considerations with those outlined above. Reference to emissions, noise and residential living conditions are referred to specifically within the RLP. Saved Policy EP8 of the RLP states *'Development at Norwich Airport will be subject to the implementation of appropriate measures for noise amelioration in relation to aircraft movements and testing. In addition the implementation of the noise amelioration scheme agreed between Norwich Airport, Norwich City Council and Broadland District Council will be required to be updated to include any significant new airport development at Norwich Airport.'*

97. In addition, saved policy EP22 Policy (high standard of amenity for residential premises) states *'Development, including alterations and extensions to existing buildings, will only be permitted if it provides for a high standard of amenity to existing or potential residential premises in the vicinity. This will include…. avoidance of noise, odour, air or artificial light pollution…. Where existing amenity is poor, improvements will be sought in connection with any development.*'

98. The NPPF requires that local planning authorities should apply the presumption in favour of sustainable development in assessing and determining development proposals (para. 197). When planning for ports, airports and airfields that are not subject to a separate national policy statement, plans should take account of their growth and role in serving business, leisure and training (para. 33). Significant weight should be placed on the need to support economic growth through the planning system (para. 19) and that *'…investment in business should not be over-burdened by the combined requirements of planning policy expectations'(para. 21).*

99. Paragraph 123 of the NPPF states that planning decisions should aim to *'.. avoid noise from giving rise to significant adverse impacts on health and quality of life as a result of new development….'* and *'mitigate and reduce to a minimum other adverse impacts on health and quality of life arising from noise from new development, including through the use of conditions'*.

100. Paragraph 123 of the NPPF also recognises that some development will create noise and existing businesses wanting to develop in continuance of their business should not have unreasonable restrictions put on them because of changes in nearby land uses since they were established. It is stated that planning decisions should identify and protect areas of tranquillity which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason. Paragraph 123 of the NPPF is addressed in detail in the conclusions of this report (see paragraphs 170 and 171).

101. Local planning authorities should consider whether otherwise unacceptable development could be made acceptable through the use of conditions or planning obligations (para. 203). Planning obligations should only be used where it is not possible to address unacceptable impacts through a planning condition.

102. The NPPF also refers the user to the Noise Policy Statement for England (NPSE) for guidance on making decisions relating to development and noise impacts (para. 23). Whilst neither the NPPF or the NPSE provide advice on decibel levels and acceptable / unacceptable noise thresholds, they both require decision makers to give consideration to impacts from noise on health and quality of life, and whether those impacts are significant adverse or adverse.

103. The aims of the NPSE are:

- to avoid significant adverse impacts on health and quality of life from environmental, neighbour and neighbourhood noise taking into account government policy on sustainable development.

- For all reasonable steps to 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.

- Where possible, positively to improve health and quality of life through the pro-active management of noise while also taking into account the guiding principles of sustainable development, recognising that there will be opportunities for such measures to be taken and that they will deliver potential benefits to society.

104. The NPPF recognises that some development will generate noise and where possible, significant adverse impacts should be avoided when making planning decisions. The NPPF also recognises that Planning Conditions can be imposed to reduce impacts and these should be weighted against the other benefits (and dis-benefits) of a proposal such as economic impacts.

105. The aviation White Paper, *'The Future of Air Transport'* (Department for Transport 2003) acknowledges that there is scope for Norwich airport to help meet local demand and its growth is supported in principle (subject to relevant environmental considerations). The progress report into the White Paper (Department for Transport 2006) continues to acknowledge NIA as a major airport in the region.

106. The aviation White Paper is now out of date and government is committed to a new aviation policy. *The Draft Aviation Policy Framework July 2012* indicates that aviation generates a direct economic output of £9 billion and is of significant importance as an enabler of activity in other sectors of the economy. However, the Government wants to strike a fair balance between the negative impacts of noise (on health, amenity and productivity) and the economic benefits of flights.

107. Given the status of NIA as a licenced aerodrome, it is considered that the principle of the use proposed in the application, namely to provide a facility to test engines at the airport in connection principally with the repair and maintenance of aircraft, is in accordance with the development plan. Clearly there is some tension between the operation of the development as proposed and policy EP22 of the RLP. Notwithstanding that tension, the importance to the local economy of the airport is referred to within saved policies TRA1, TRA2 and EP8 of the RLP and objective 3 and policy 6 of the JCS. The economic growth of the NIA is specifically addressed and supported in numerous development plan policies and on balance, despite the conflict with policy EP22 the development is considered to be in accordance with the development plan when considered as a whole. The application raises several other material planning matters, however, it is considered that many of these issues can be dealt with comparatively simply and most aspects of what has been proposed have had very little if any representation made on them. There have been no objections made to the building of the facility proposed, its location or the principle of the use. However, there has been very considerable representation over the extent of testing and how this could be controlled through the planning system. These matters are addressed below.

Impact on Living Conditions

Noise Disturbance

Context

108. Clearly, the principle impact on living conditions of local residents associated with the proposed development is noise. Noise is considered in full in this section of the report. Other environmental impacts are addressed in later sections of this report.

109. Whilst low powered testing is less noisy than high powered, it is more predominant and longer in duration. High powered testing is undertaken for short periods of time (5 - 30 mins) to avoid damage to the engines. Low and high powered testing of an aircraft will often be undertaken in combination i.e. the engine will essentially be 'put through its paces' starting from low power running up through to high powered (70% of full power) to ensure it is functioning correctly. The duration of a low and high powered engine test in combination could vary between 15 minutes and 5 hours depending on the nature of the test (i.e. if it is routine or engine problem related) although the average over the last six years has been for 76 minutes.

110. Engine tests are limited to 0600-2300 at the authorised testing site (Site B) through the planning condition imposed on 05/00697/F approved in 2006 and through the recently revised and agreed airport Operating Framework Agreement August 2012 (OFA) which limits this further to 0800-2000 (Monday-Saturday) and 0900-2000 (Sunday). The OFA limits the numbers of aircraft permitted to use the high-powered testing area at any one time to two.

111. The OFA states that it details the operating procedures adopted by NAL which are regulated by the government through the Civil Aviation Authority, Department of Transport and other regulatory authorities. Where any such regulations do not exist, NAL will adopt industry best practice as company policy. The OFA is a non-statutory document which both Norwich City Council and Broadland District Council are signatories to. The OFA does provide for the airport to operate outside of the hours referred to above under certain circumstances (delayed / late flights, emergency need for engine testing or other emergencies for example).Where the airport exceeds the parameters in the OFA, NAL will advise the City Council of this promptly.

112. As with any noise source generally, the further you are from the source, the less noise impact you experience as not only does the volume of the noise decrease over distance, but other noise generators may also 'interrupt' or 'mask' the noise source concerned. Engine tests have the potential to cause noise and disturbance due to the different engine power levels at which it can occur, the duration of testing and the uncertainty as to when it may happen. The City Council's EHO notes that the noises generated by low and high powered engine testing are quite different. High power noise contains a greater low frequency element but is more intrusive due purely to the higher dB level. Although the low powered part of the test is far less noisy, it is more tonal with a higher pitched element that is noticeable.

113. Based on the parameters set out in the application as described previously, NIA are seeking approval for high powered engine tests to be carried out for up to 12 hours a day 6 days a week and for 11 hours on Sundays, all year round with the exception of Christmas Day. On the face of it, this could amount to 4,316 hours high powered engine tests in 1 year (albeit the high powered engine testing would be limited to 90 minutes per day). Whilst this scenario is unlikely, if the application was permitted in its current form, the consent would

allow for it.

114. The application is supported by an EIA which assesses noise impacts on sensitive receptors. Both the City Council and BDC's EHO's have questioned certain aspects of the original noise assessment and further work has been carried out. These assessments have been described previously. In addition, an objector who is a resident living close to the airport has also commissioned a professional noise consultant (MAS Environmental) to undertake a noise assessment on their behalf (this is addressed below). It is considered that these assessments in combination constitute sufficient information for Officers to draw conclusions about the nature of the existing noise environment around the airport and at sensitive receptors, and the potential levels of noise impact that could be experienced at those receptors arising from the operation of the GRE.

Relevance of different noise assessment methodologies

115. A Planning Authority is not bound by any particular noise assessment methodology in regard to this type of development. The Council must have regard to the NPPF (and other planning policies) which does not set out a noise assessment methodology but requires planning decisions to aim to avoid noise from giving rise to '*significant adverse impacts on health and quality of life'*.

116. The World Health Organisation (WHO) *Guidelines for Community Noise* consider noise impacts in terms of *serious annoyance* (which can lead to adverse effects on both health and quality of life). The *BS 4142:1997 Method for rating industrial noise affecting mixed residential and industrial areas* refers to adverse noise impacts and the likelihood of *complaints*. These are both relevant to the assessment of this application. Further, there is no industry standard or specific method for assessing engine testing noise. In such circumstances it is normal to consider a variety of methodologies to make an assessment of the impacts on both health and quality of life are taken into account by the Council when considering the application.

117. The applicant's assessment adopts baseline noise conditions excluding the unauthorised engine test noise to seek to show a representative indication of the actual impact. The assessment uses a noise model to predict noise emissions from the source and has identified their level at sensitive receptors. However, the assessment methodology sets noise impact thresholds for adverse impacts higher than all other established noise assessment methodologies (including 10dB higher than the WHO guidelines). It is therefore not sufficient for the Council to rely on this assessment alone.

118. The applicants EIA does not include the BS4142 assessment. The Council in its EIA Scoping Opinion requested that a BS4142 assessment was carried out as part of the EIA as this would be appropriate for assessing impacts from low powered engine testing which is more constant. It is arguable that airport / aircraft noise does have some similarities with industrial noise. BS4142 essentially identifies background noise levels and compares this with a predicted noise impact (at a particular location) arising from the noise source. A 5 dB change is of marginal significance. If a 10dB change is experienced beyond the background then this indicates that complaints are likely at the receptor.

119. It is accepted that BS4142 is aimed at being used for more continuous noise sources, or ones that cycle on and off within the period of an hour and continue like that throughout the day. It is not a sufficient method alone for rating engine test noise where there are bursts of higher levels of noise that may only occur a few times a day, and not at all on some days. Notwithstanding, the applicant has reluctantly prepared and submitted a BS4142 assessment relating to low powered engine testing (i.e. the more constant) associated with

the GRE.

The MAS noise BS4142 noise assessment (August 2012)

120. In addition to the noise assessments submitted by the applicant, a local resident commissioned MAS Environmental to critique the applicants original noise assessment provided in the May 2012 ES and prepare an independent noise assessment of the development using the BS4142 methodology.

121. This report is critical of the methodology adopted by the applicants in their ES and suggests that BS4142 is the more appropriate assessment methodology to be adopted. The MAS report provides a BS4142 assessment of predicted noise impacts from the operation of the GRE (i.e. with mitigation), with the aircraft at 240 and 60 degrees, in the garden of Quaker Farm.

122. Background noise surveys were undertaken in the garden of Quaker Farm in April 2010 and indicate a range of noise levels of 31.3dB to 48.5dB (LA90 1 hour) over an 8am-8pm period. These are compared against noise predictions using data from the ES relating to the first engine test described in the ES (i.e. the less noisy aircraft). This data sets a level of 55.3dB LAeq1hr at Quaker Farm. The assessment highlights periods throughout the day where noise impacts would exceed the background by 10dB or more, by 15dB or more and by 20dB or more. For example, the tables show a period of 09:00 to 16:00 on Friday 9th April 2010 where the noise prediction exceeds the background by 20dB or more (up to 23dB). This does not include the tonal penalty (which would be applicable) which would add an additional +5dB to these figures. As stated these predictions are based on the first engine test and, therefore, an additional +2dB needs to be added to these findings to accommodate the louder aircraft.

123. Whilst this scenario does show significant noise intrusion over a lengthy period of time, it must be noted that the application parameters as applied for would only allow for 30 mins of high powered testing in any one hour and an aggregate of 90 minutes in one day. This highlights the shortcomings of solely adopting the BS4142 methodology for assessing the limited duration of high powered engine testing. Notwithstanding, the methodology does help to inform the Council of the potential impact that would be associated with high powered testing in combination with low powered testing as applied for in the application, where the airport could, if the application were approved in its current form, undertake continuous engine tests for 12 hours a day Monday to Saturday and for 11 hours on Sunday. In this scenario and based upon the conclusions of the applicants and the MAS BS4142 assessments, this continuous impact would be significant and warrants some form of restriction.

Conclusions on noise impacts

124. The lack of an established methodology for assessing noise impacts from aircraft engine tests means that the Council needs to consider a range of issues including historical information relating to engine tests, background noise data and a number of different types of noise assessment.

125. Noise attenuation associated with the construction of the GRE will bring an improved situation to that which currently operates in the open on the northern apron. However, whilst this must be acknowledged, Council's consideration of the proposal must not be based on the noise attenuation resulting from the development in comparison to an unauthorised operation. The main consideration must be based on the overall potential impact arising from the operation of the proposed development on the amenity of local residents.

126. What is clear is that areas to the north at Horsham St Faith and the east of the airport have particularly low background noise levels at certain times of the day. The background noise data presented by the applicant measured close to the junction of Quaker Lane and Buxton Road of 43.5 to 50.6 dB (LA90) is not considered to be truly representative of the noise background environment at Quaker Farm on the basis that it could be affected by traffic noise from Buxton Road. Data from the fixed noise monitor on the eastern boundary of the airport, which is in close proximity to Quaker farm, shows background noise levels during the day time as low as 31.1 dB and 28dB in the evening. Further, the MAS BS4142 report presents data that shows background noise levels in the garden at Quaker Farm as low as 31.3dB and this should be accepted by the Council.

127. If the Council were to take the precautionary approach and accept the WHO and BS4142 threshold of 55dB beyond which noise experienced could amount to a serious community annoyance, based on data measured from an engine test of the loudest aircraft that would use the GRE, in certain conditions there is the potential for significant adverse noise impacts from high powered engine testing to occur at residences at Spixworth, Old Catton, isolated houses at Catton and the greatest, at Quaker Farm. However, noise emissions associated with high powered engine testing are not continuous and under the parameters of the application, will be limited to no more than 30 minutes in any 1 hour and cumulatively no more than 90 minutes in any one day. In addition, it should be noted that due to the prevailing wind direction (which is from the west / south west and based on 2009 / 2010 data would appear to blow in this direction over 40% of the time) engine tests will take place more frequently with the aircraft facing into the wind and out of the GRE with its nose at 240°, than facing into the GRE at 60° (where wind from the north east blows in the region of 15 - 20% of the time). Quaker farm will therefore experience more frequent noise emissions in excess of 60dB. Conversely, noise emissions in excess of 60dB will be experienced less frequently at those properties situated to the south east of the Airport (Catton isolated houses) given that these are predicted to occur only when the aircraft is facing into the GRE at 60°.

128. The issue of low powered engine testing as applied for is also of concern to the Council. The applicants BS4142 assessment acknowledges the likelihood of complaint at Quaker Farm from low powered engine testing from the new facility and if the more representative background noise levels provided by MAS were applied, this impact would be even greater at Quaker Farm. This gives rise to the potential scenario under the application parameters that lengthy periods of disturbance (between 8am and 8pm) could arise at the Quaker Farm properties all year round. Notwithstanding, the levels of testing (both low and high powered) sought by the applicant are significantly greater than that which has taken place since 2007 and which merits some consideration by the Council of placing restrictions on the combined amount of testing that can take place in any 1 year, to offer periods of respite to local residents. This should be considered in combination with improvements to the way in which NIA communicate to local residents the periods when it is anticipated engine testing is unlikely to take place.

129. Based on the above assessment of the noise impacts the development would not necessarily conflict with saved Policy EP8 of the RLP given that noise amelioration forms part of the proposal. The development does, however, come into conflict with policy EP22 of the RLP which seeks the avoidance of noise pollution on residential premises in the vicinity. In addition, the NPPF seeks the avoidance of significant adverse impacts on health and quality of life as a result of new development. Notwithstanding these conflicts, they need to be balanced against development plan and NPPF policy support for the proposals in regard to the safeguarding of jobs and the contribution to the local economy of MRO operations (of which engine testing is an integral part), and it is considered that that those policies carry

significant weight. As stated above, it is officer's view that the proposal is in accordance with the Development Plan when considered as a whole.

Potential alternative locations for the GRE

130. Given the potential adverse noise impacts that would arise from the development, it is appropriate for the Council to consider whether there are any reasonable alternative locations within the NIA operational area where operation of the GRE could feasibly take place and where a lesser impact would arise.

131. As set out above, NIA have described in their application the potential alternative locations for engine testing within the confines of the operational area of the airport. The EIA Regulations state that an ES should include *'An outline of the main alternatives studied by the applicant or appellant and an indication of the main reasons for the choice made, taking into account the environmental effects.'* (Schedule 4, Part 1(2)). The Regs. do not expressly require the applicant to consider alternatives nor do they state that the choice made must have the least environmental impact, rather it requires the reasons for the choice to be set out having taken into account environmental effects. In addition it should also be noted that any assessment of alternatives in this case needs to take into account the operational requirements of NIA, the costs of developing any alternative, as well as the social and environmental issues.

132. The assessment presents a clear justification as to why engine tests cannot revert to the currently consented site due to the operations of Bristow Helicopters and the cost to relocate them. Whilst it would be theoretically possible for the airport to move Bristow Helicopters, it would not be reasonable to do so on economic grounds and there is indeed, no real prospect that NIA will revert to this site. It would also be reasonable to conclude that the airport would wish to locate engine testing away from the south eastern part of the airport where there is greater potential for conflict with other operations and adverse impacts on businesses adjacent to the boundary of the airport and residences beyond the boundary.

Design

133. Different types of acoustic barrier for reducing noise from engine testing were considered by the applicant including soil bunds, second hand GRE's, and different types of GRE's in terms of materials, height and orientation. Selection of a larger GRE would allow aircraft to be rotated to take account of different wind directions but the noise attenuation benefit reduces with size in relation to the aircraft. Cost also increases with size. It was determined that a GRE that would offer the tightest fit around the largest aircraft to be tested, would provide the greatest noise attenuation but still allow some rotation room. Whilst some visual impacts will arise due to the height and scale of the GRE, this has to be considered against the noise attenuation benefits that arise.

Transport and Access

Surface Vehicle Impacts

134. **Construction** – Access will be via Crash Gate 4 via Bullock Hill where a security gate will be established. The route from the airport to the A140 involves exiting the site via Bullock Hill, passing along Spixworth Road and turning north onto the Old Norwich Road and then the Norwich Road. The Route leads onto Manor Road and then onto the A140 South of Newton Street. Passing bays will be provided on Bullock Hill to accommodate construction traffic (Ref: Drawing No. 102, Appendix B of Construction Management Plan,

Prepared by Create Consulting Engineers Ltd. October 2012 as contained in the ES Addendum). This is at the request of Norfolk County Council Highways, who raise no objection subject to implementation of the applicants Construction Traffic Management Plan (CMTP) which addresses the above. The CMTP and associated works are to be secured through the imposition of conditions and a Section 278 Highways agreement between the developer and the Highways Authority.

135. **Operation** - The proposal seeks to relocate an existing activity which operates at the airport. The development is considered unlikely to lead to a significant change in surface transport accessing the airport site and on this basis the proposal is considered acceptable.

Other Environmental Issues

Water Resources, Site Contamination and Remediation

136. No objection is raised by the EA. The EA seek the imposition of conditions relating to contamination investigation and remediation, SUDS drainage and appropriate storage of fuels and oils during construction. As such, the development would not be in conflict with policy EP17 of the Norwich RLP.

Air Quality

137. Specialist advice has been provided by the Council's Environmental Health Officers that indicates that the proposal is unlikely to lead to any deterioration of air quality compared with the existing. On this basis, it is considered that taking into account the nature of the application, the proposal is acceptable in this respect.

Flood Risk

138. A Flood Risk Assessment (FRA) was submitted with the application which is considered acceptable, subject to conditions, by the Environment Agency. The proposal is therefore not considered likely to increase the risk of flooding within the area and is considered acceptable in this respect.

Archaeology and Built Heritage

139. The Horsham St Faith Conservation Area is situated to the north of the airport and a number of listed buildings and Registered Parks and Gardens are located in the wider environs beyond the NIA operational area. Whilst there is some potential for currently unrecorded archaeological remains to occur within the site the construction of two taxiways through the site are likely to have adversely affected any potential archaeological remains within the Site.

140. There are not considered to be significant adverse impacts on these features, arising from the development and on the basis that the Norfolk Historic Environment Service and English Heritage have not raised an objection to the scheme, it is considered acceptable in archaeological and built heritage terms.

Landscape and Visual

141. There will be adverse landscape and visual effects associated with the development and particularly for some receptors on St Faiths Road and Quaker Lane, although the effects are less significant on other receptors and viewpoints including at the edge of the Conservation Area at Horsham St Faith. Notwithstanding, the development will contribute to the functioning of an operational airport and is one which could be typically associated with the existing land use.

142. As the development is within an operational airport, there are restrictions regarding

landscaping including the need to avoid birdstrike which includes limiting vegetation that could encourage birds within the airport. Therefore no landscape or visual mitigation measures have been proposed. The Council's landscape officer raises no objection to the proposal. On this basis and given the operational nature of the development, the impacts are considered to be acceptable and the development does not conflict with Policy HBE12 of the Norwich RLP.

Ecology

143. The site is of low ecological value and the EIA has stated that no 'Key Ecological Receptors' have been identified in respect of the Development, with all potential ecological receptors having been 'scoped out' as being either of less than District / Borough value and / or as not being subject to any significant effects. No objection to the proposals has been raised by Natural England.

144. Whilst the potential for Great Crested Newt, reptiles, nesting birds and wild mammals to use the site is low, it is considered appropriate for a Construction Environmental Management Plan to be prepared which details a precautionary non-licensed mitigation strategy for these species during the short construction phase. The mitigation strategy will assume that these species are present. This will be sought by way of condition. Subject to the imposition of such a condition, the proposal is considered acceptable in terms of ecology.

Cumulative Impacts

145. Other potential developments in the area are:

- A proposal for 93, 400 sq m of airport related commercial floorspace (referred to as 'Area 4' or 'Norwich Aeropark') in the northwestern portion of the airport. The Council issued an EIA Scoping Opinion on 8th February 2013 for this proposal and it is anticipated that a planning application will be submitted at the end of March 2013.

- The Northern Distributor Road (NDR). This is not yet committed nor does it benefit from Planning Permission.

146. Buildings to a height of 17m could be accommodated in the Area 4 development. Noise emission levels from such industrial or storage/distribution uses are usually relatively low compared to noise emission levels from other aviation activity, particularly helicopters. Moreover, such buildings have the potential to reduce noise emission levels from the proposed engine testing facility through their barrier effect.

147. The construction of the NDR would likely generate some changes to the existing noise environment in the area. Both of these proposals would also create a very different landscape and visual baseline for the area.

148. There is the potential for other MRO operations to utilise the GRE but none have been identified at this stage. In addition, there is the potential for aircraft activity to intensify at the airport in the future but this cannot be defined at this stage.

Economic Impacts

149. As stated previously, NIA is a significant direct employer and through this and its supply chain activities makes a contribution to the local economy. The continuation and enhancement of this position is supported throughout the Development Plan policy

hierarchy.

150. The proposed engine testing facility is principally used by KLMUKE as part of its MRO activity. The facility could feasibly be used by other operators and customers of NIA in the future but there is no certainty of this. Therefore, whilst the wider economic benefits of the presence of NIA must be acknowledged, for the purposes of this application, the detailed consideration of economic benefits has been restricted to the operations of KLMUKE.

151. Clearly KLMUKE is a multimillion pound business. Based on the detailed information provided by KLMUKE relating to the labour requirements associated with a single MRO operation and the person hours expended on MRO activities involving engine tests in 2012 (850,000 hours), it is possible to put into context the employment and economic benefits of engine testing. Officers have assessed the engine logs provided by NIA to the Council which show that KLMUKE undertook 168 hours of engine testing in 2012. This would equate to 5, 059 of paid hours for every 1 hour of engine testing (albeit only a minor proportion of these hours are spent on the engines).

152. It is concluded that engine testing with a high powered element is integral to MRO activities. Although the applicant states in its ES that enforcement action would be undertaken against the currently unauthorised engine tests if the GRE is not permitted, the Council have not adopted a position on this matter. Notwithstanding this uncertainty, it is officer's view that if engine testing cannot lawfully take place there is the potential that MRO operations would relocate to another airport with the potential for there to be a loss of local jobs as a consequence of this. Clearly there are a significant number of employees associated with the MRO many of whom will reside in the greater Norwich area. In terms of the development plan, the GNDP Joint Core Strategy seeks to focus jobs growth at NIA. Policies TRA1, TRA2 and EMP2 of the saved Norwich Local Plan support operational development and economic growth at NIA. This must be given significant weight in the determination of this application.

Human Rights Issues

153. It is acknowledged above that the proposed development would give rise to a degree of noise disturbance to residential properties in the vicinity of the development site. To that extent, the question of whether the grant and implementation of planning permission would give rise to a breach of Article 8 of the Convention (right to respect for private life) and / or Article 1 of the First protocol (entitlement to the peaceful enjoyment of possessions) should be considered.

154. Both Article 8 and Article 1 are qualified rights. In the context of Article 8, the courts have noted that the planning regime involves the exercise of discretionary judgement in the implementation of policies adopted in the interest of the community, and that public authorities enjoy a wide margin of appreciation in weighing up a range of local factors as applied to planning policy and in exercising their discretion on a given application. In the context of the Article 1, the courts have held that diminution in property value in itself is not generally to be regarded as a planning consideration, though it may be a reflection of loss of amenity.

155. Having regard to the conclusions on the noise impacts of the proposal below it is accepted that the above rights are engaged when considering the effect on residential amenity at Quaker Farm and the isolated dwellings in Catton. However, it is officers' view that there would be no interference with the right to respect for family life and / or the peaceful enjoyment of possessions by this proposal. The worst case scenario would give rise to a significant degree of noise disturbance in relation the exterior environment of

Quaker Farm, and even then dependent on the type of aircraft tested, and the wind speed and direction. Further, the level of noise disturbance likely to be produced under the parameters of the application would be further restricted by the conditions which the applicant agree should be attached to any permission, together with additional conditions which officers consider are both appropriate and necessary.

156. Even if, contrary to officers' view, there were considered to be a breach of the right to private life or entitlement to the peaceful enjoyment of possessions, any interference is justified in the circumstances of this case. The most serious noise impacts would be on only a limited number of dwellings at Quaker farm and isolated properties in Old Catton. By contrast, the employment and economic benefits of engine testing, the fact that engine testing with a high powered element is integral to MRO activities, and the potential for there to be a loss of jobs if permission is not granted all carry significant weight in striking the balance against any interference. These considerations indicate that any interference would be in accordance with the law and necessary in a democratic society in the interests of the economic well-being of the country under Article 8(2). The restrictions on the proposal brought about by agreed and imposed conditions further indicate that any interference would be no more than necessary and proportionate in the circumstances. For the same reasons, any interference with the entitlement to peaceful enjoyment of possessions would be in the public interest and subject to conditions provided for by law.

Conclusions

157. High powered engine testing associated with MRO activities at the airport has been taking place at various locations on the airport in the open and with no effective restriction on its intensity and little control over the hours that testing could take place for more than 20 years. Previous consents on the airport had identified an area where engine tests could take place. However, by virtue of the airport moving the location for engine tests without any consent and then developing the area where the activity was consented for such purposes to conduct helicopter operations, they have effectively put this aspect of their consent beyond any reasonable prospect of implementation.

158. Notwithstanding that, the ability to test aircraft engines is a fundamental and necessary part of airport operations and a significant number of high powered tests are required to allow the continued operation of KLMUKE's MRO activities (the largest single employer on the airport). High powered engine testing needs planning permission and it is officer's view that there is no reasonable prospect of this activity taking place as authorised under the current consent (situated at Site B – See **Figure 1**) . Therefore, the local planning authority is in the unusual position of considering an application for a long established use linked to a major established employer effectively on the same basis, as if it were a newly proposed use.

159. From a policy perspective, consideration of the application is fairly straightforward. The use proposed is considered to be operational and appropriate to take place on the airport. There is also strong support for the continuance and expansion of the airport in planning policy. The material received in support of the application is considered to demonstrate that the particular location proposed for the testing facility is appropriate when considered against the reasonable alternatives and that the scale of facility proposed is considered appropriate to mitigate the level of noise disturbance proposed. None of the representations received on the application has sought to question any of these aspects in relation to the application received.

160. Although the application does have a number of material issues associated with it. It is

a sizeable development, will be clearly visible from outside the airport, have transport impacts during construction and will result in development on a sizeable area which is currently grassland. All these impacts have been appropriately addressed in the ES that accompanies the application. It is considered that all these aspects of the application are either acceptable or can be adequately controlled through the imposition of appropriate conditions. There are also no representations seeking to object to the application on these grounds either.

161. The issue of most significance relating to this application is undoubtedly noise and particularly, whether the degree of noise disturbance that would result from the development as proposed is acceptable. Aircraft engine testing is undoubtedly a very noisy activity and has the potential to generate noise levels that are harmful to human health in addition to being detrimental to residential activity.

162. The application has been subject to a number of different noise reports and some dispute between the applicant's noise advisor, a noise consultant representing nearby residents and the EHOs of both Norwich and Broadland Councils, about the appropriate methodology to assess the impacts of the application. No consensus has been reached between the various professionals concerned but it is not considered by officers that this dispute prevents a decision being made in relation to the application as it is considered that sufficient information is available to the local planning authority to determine it.

163. It should be noted that the application seeks consent for testing that would be limited in a number of ways (except for various critical situations):

- Engine tests to be limited to 8am – 8pm Mon – Sat and 9am – 8pm on Sun.

- No tests to be allowed on Christmas Day.

- Maximum length of time of high powered testing to be limited to half an hour in any one hour and one and a half hours in any one day.

164. In proposing these restrictions, the applicant is seeking a consent that would allow in theory a massive intensification of engine test activities to those that have historically taken place at the airport although it should be noted that for various operational reasons it is highly unlikely that the theoretical maximum applied for would ever be approached. However, the application is seeking consent that would allow up to a total of 4, 316 hours of engine tests in any one year (of which 546 hours could be testing at high power). Total levels have fluctuated over the last 6 years but range between 134 – 227 hours per year (and the proportion of testing which is done at high power is not known to the local planning authority).

165. The noise information summarised below is drawn from various of the submitted noise reports and is considered by officers to present a reasonable summary of worst case noise levels associated with the two different aspects. The first scenario is based on the WHO guidelines but where higher significance thresholds for adverse impacts have been used as informed by the NPL report. This is based on the ground running of a single engine, from the noisiest aircraft being tested for which consent is sought, for an hour during which there are periods of the engine held at low power and at high power (>70%) and up to maximum power (100% of thrust). This data was then used to calculate an average noise emission level over a period of 1 hour expressed as 'LAeq1hr'. In all cases an assumption is made that the wind speed is 2 metres /second and the wind direction is from the test facility towards the receptor.

166. The second scenario presented is that of the same engine being tested throughout the entire hour at low power (69% of engine thrust). This data has been produced using the BS4142 methodology the application of which to assessing noise impacts associated with engine tests has been questioned by the applicant but is the methodology commonly adopted for assessing relatively continuous sources of noise. In accordance with standard practice for the BS4142 methodology various additions have been made to predicted noise levels to reflect the tonality of the noise source (+5dB).

167. In both scenarios the predicted noise level is compared against the lowest recorded background noise levels at the receptor locations and the difference is presented.

Summary of Likely Noise Impacts of the Proposal - High Powered Testing

Location of Receptor	**Noise emission level 240° with GRE (LAeq1hr dB)**	**Noise emission level 60° with GRE (LAeq1hr dB)**	**Typical Background Noise Level (LA90) (Lowest figures presented in application and representations)**	**Change in the Noise Environment**
Quaker Farm	60.3	56	35 (MAS)	25.3
Spixworth	55.1	50.1	37 (Applicants BS4142)	18.1
Horsham Saint Faith	53.6	53.6	39.8 (Applicants ES)	13.8
SE of Airport (Catton isolated houses)	53.3	61.3	44 (Applicants BS4142)	17.3
Hellesdon	50.4	50.3	53 (Applicants BS4142)	-2.6*
Old Catton	56.0	54.1	44 (Applicants BS4142)	12

*Note – a negative figure does not imply a reduction in the noise environment.

Summary of Likely Noise Impacts of the Proposal – Low Powered Testing

Location of Receptor	**Noise emission level 240° with GRE (LAeq1hr dB)**	**Noise emission level 60° with GRE (LAeq1hr dB)**	**Typical Background Noise Level (LA90) (Lowest figures presented in application and representations)**	**Change in the Noise Environment**
Quaker Farm	51 (+5dB)*	47	35 (MAS)	16
Spixworth	46 (+5dB)*	41	37 (Applicants BS4142)	9
Horsham Saint Faith	40	40	39.8 (Applicants ES)	0.2
SE of Airport (Catton isolated houses)	39	47	44 (Applicants BS4142)	3
Hellesdon	36	36	53 (Applicants BS4142)	-17**
Old Catton	42	40	44 (Applicants BS4142)	-2**

*Note – The applicants BS4142 assessment implies that a tonal penalty of 5dB should be applied at locations where the specific noise levels (emission) exceed the typical background noise levels.
** A negative figure does not imply a reduction in the noise environment.

168. The results presented identify that two noise receptor locations (Quaker Farm and isolated dwellings in Catton) are the most severely affected by the noise that would be generated. However, it should be noted that by virtue of the prevailing wind direction (which is from the west / south west and based on 2009 / 2010 data, would appear to blow in this direction in the region of 40% of the time) that the properties at Quaker Farm would be more severely affected than the isolated properties in Catton.

169. In terms of describing the noise impact a number of conclusions can be drawn about the worst case noise impacts of the proposals in relation to their impact on Quaker Farm:

1. That during the worst case hour when high powered testing is taking place there will be

a significant degree of noise disturbance experienced by the residents of Quaker Farm in relation to their exterior environment. This level of noise would be introduced into what is normally a relatively quiet environment and its impact is increased due to this. It is reasonable to expect that this level of noise would reduce the enjoyment of the gardens of the properties at Quaker Farm. Even during this worst case situation noise levels produced are unlikely to result in significant disturbance to people inside affected properties assuming windows and doors are shut and meet modern standards.

2. Even when engine testing is taking place (with no element of high powered testing) the noise experienced at Quaker Farm will be at a level that would cause disturbance. By virtue of the nature of the noise source this may cause some degree of annoyance and disturbance to residents but it should be noted that it is below the levels which you would expect if you live close to a busy road in an urban environment. For example, noise measurements associated with a residential planning application considered by the City Council at Friends Road / Earlham Road in Norwich ranged between 61.9 dB – 62.4 dB (LAeq 16 hr). The measurement location was approximately 17 metres from the carriageway of the road. Notwithstanding that, whilst the level of impact could be compared to noise in an urban environment, what is important to consider at Quaker Farm is the degree of change from the background noise level, as a result of engine tests.

3. That due to the likely nature of the tests, that they would be conducted over a period of a year, the type of aircraft engine being tested and the wind direction and speed when the test is conducted, average noise exposure experienced during engine tests will be some way below the worst case scenarios outlined.

4. However, even allowing for point 3 above, the level of noise disturbance likely to be produced under the parameters of the application is easily within the range that ordinarily, and without reference to other restrictions, could be considered sufficient to justify refusal of a planning application.

170. In assessing the acceptability of this impact regard should be had in particular to para 123 of the NPPF. This states:

"Planning policies and decisions should aim to:

- *avoid noise from giving rise to significant adverse impacts on health and quality of life as a result of new development;*

- *mitigate and reduce to a minimum other adverse impacts on health and quality of life arising from noise from new development, including through the use of conditions;*

- *recognise that development will often create some noise and existing businesses wanting to develop in continuance of their business should not have unreasonable restrictions put on them because of changes in nearby land uses since they were established; and*

- *identify and protect areas of tranquillity which have remained relatively undisturbed by noise and are prized for their recreational and amenity value for this reason."*

171. In relation to this it should be noted that:

- Introduction of the proposed use in the manner as proposed by the applicants, into a relatively quiet area, would undoubtedly lead to a significant adverse impact on quality of

life, and potentially health, of nearby residents;

- The nature of the GRE proposed is considered appropriate and does significantly mitigate noise levels reducing them to the level of impact summarised above. Levels of testing proposed without this mitigation would clearly be unacceptable albeit to a small group of people;

- Notwithstanding the level of mitigation, residual adverse noise impacts could still occur. Quaker Farm and the isolated houses in Catton fall into the moderate adverse impact category in relation to serious annoyance (which encompasses impacts on health and quality of life) as defined by the applicant, falling between 60-65dB, with Quaker Farm attracting 60.3dB and the isolated houses attracting 61.3dB. Having said that, these calculated figures are based on worst case predictions using the noisiest engines and favourable sound travel conditions. In the case of Quaker Farm the impact only falls into the moderate impact category by 0.3dB and the frequency of such an impact is limited by the parameters of the application (no more than 30 minutes of high powered testing in any hour and no more than 90 minutes of high powered testing in any one day).

- In relation to the isolated Catton houses, although the noise is slightly greater at 61.3dB, it is again a worst case prediction and will very often be lower, and also only occurs when the aircraft faces 60 degrees. For this to happen, the wind direction would have to be coming from approximately the north east direction (which is understood to blow in that direction for only 15-20% of the time). The wind predominantly comes from the opposite west/south west direction and the aircraft will therefore be most often facing into the prevailing wind at 240 degrees, and the noise experienced at the location will, for the majority of the time be at a maximum of 53.3dB which falls into the low impact on health and quality of life category.

- The nature of the parameters proposed by the applicant in the application only go so far in effectively minimising the likelihood of serious annoyance;

- The third bullet in para 123 of the NPPF is not relevant as this is not a case where sensitive receptors have encroached on the airport since it was established.

- Although some of the recorded background noise levels indicate that the area around the airport may be considered to be tranquil, the nature of the assessment methodology is likely to have filtered out noise of overflying aircraft and it is not considered reasonable to describe the areas around the airport as being generally *"prized for their recreational and amenity value"*.

172. In terms of reaching a decision on the application submitted this is a matter for planning judgement. There is nothing in the information submitted that would suggest that the noise levels that could result from the application would be such that the application could never be justified. There is no established level of noise exposure that can be considered to set the maximum acceptable level of noise exposure in these circumstances.

173. Therefore, it falls to balance up the degree of environmental disturbance caused by the operation of the development against the economic benefits of the proposals. The application contains considerable information about the level of economic benefit associated with engine tests at the airport and further information has been sought from officers to understand and clarify this. The information available is very largely based on the MRO activities of KLMUKE who currently account for the vast majority of all high powered engine testing at the airport (in 2012 KLMUKE's activities accounted for 97% of all the tests with a high powered element).

174. Because KLMUKE are currently operational at the airport it is possible to access more information about their impacts than would ordinarily be known at this point in considering a planning application. The information available shows that in relation to KLMUKE activities there is a very considerable level of economic activity associated with their activities particularly in relation to the amount of engine testing they conduct. Information only recently made available from KLMUKE's suggests that in 2012 for each hour of testing, in excess of 5000 person hours are spent in relation to the MRO activities (albeit only a minor proportion of these are actually spent in relation to work on the engines).

175. It is considered that, in view of the strong policy encouragement for growth of the airport and scale of the economic impact relative to the length of time of disturbance, considerable weight should be afforded to the economic benefits associated with engine tests in determining the application. However, it should be borne in mind that other and future users of the testing facility may not have a similar ratio of economic benefit to engine test hours that KLMUKE currently do, and that increased levels of testing that may be associated with specialist engine activities or more generally with an increased level of flying from the airport may have a much lower ratio of associated hours of employment.

176. It also should be noted that it is considered appropriate to clarify the current planning situation regarding engine tests when determining the application. As currently worded, the only place on the airport engine tests can take place is that defined in application 05/00697/F. This suggests that all fixed wing aircraft engine tests and engine testing should take place in this location but this has not historically been the case as pre-flight tests and idling at low power etc. are carried out as a matter of routine and largely without complaint. Any environmental benefits that would arise from all low powered testing being carried out within the proposed GRE would be outweighed by the operational disruption this would cause to the airport and the disbenefit of concentrating all testing activities in one location. Therefore it is considered appropriate to only require engine running with high powered elements to be carried out in the GRE.

177. Overall, on balance, and having regard to all material planning considerations officers regard the proposed facility as acceptable. However, in view of the levels of noise disturbance that could result from the proposed activities within the parameters of the application, officers are concerned that towards the upper end of the level of use proposed by the applicant, the level of environmental disturbance may be considered to be unacceptable.

178. Officers have worked proactively with the applicant, in accordance with paragraph 187 of the NPPF, to secure a development that meets sustainable development objectives. The analysis presented above (and consideration of the representations seeking restrictive conditions on the application) has led to a discussion with both the airport and KLMUKE about the nature of further planning conditions and any that they would be prepared to accept being imposed on the proposal. As a result of these discussions, the applicant has indicated that they would be prepared to accept the following additional conditions being attached to any consent to further mitigate any adverse impact on local residents:

- a condition providing for at least 100 days in any calendar year when no use is made of the testing facility to provide nearby residents with some element of respite from any engine tests;

- a condition restricting the total number of hours of engine tests within the facility to no more than 1300 hours in any calendar year to provide some surety that the nature of engine tests carried out will remain an occasional/periodic occurrence and not introduce

a continuous source of noise into the environment. The level of restriction identified here was based on the acceptance that testing would take place for no more than around 30% of the total available hours within the application parameters (4316 hours a year - 8am-8pm Mon-Sat and 9am-8pm Sun, 83 hours a week times by 52 weeks per year); and

- a condition requiring information to be published about when engine tests are not expected in the future to help local residents manage the impact on the enjoyment of their properties.

179. There were some other possible restrictions requested by various respondents that were discussed, that the applicant resisted and which officers are of the opinion that (notwithstanding the benefits to affected residents) are not necessary for the application to be approved and would have a disproportionate impact on operators at the airport. These included possible conditions further restricting the hours of operation or number of tests at weekends or on bank holidays to provide greater certainty of affected residents being able to use their gardens at these times.

180. There were, however, some discussions with the applicant about possible conditions which have not been able to be agreed to by the applicant. Nonetheless, Officers consider it both appropriate and necessary to impose conditions:

- to address the requirement for the publication of information about the anticipated times when engine tests will take place to help local residents manage the impact on the enjoyment of their properties (in addition to the requirement for information to be published about when engine tests are not expected to take place, which the applicant has agreed to as referred to above).

- for the hours of operation allowed on bank holidays to be the same as that on Sundays. No information has been submitted demonstrating that if a restriction preventing testing before 9am on every Sunday is acceptable why this same restriction is not acceptable on a far more limited number of public or bank holidays;

- limiting the noisiest aircraft to be tested in the facility to be no louder than the aircraft on which the possible implications of the application was assessed. This is needed to ensure compliance with the comments of Norwich's EHO and also to ensure that the submitted ES is a reasonable assessment of the impacts of the proposal; and

- that any testing done under the 'critical' situations described in Condition 21 below (which is designed to cover a very limited number of instances where due to emergencies, wind conditions or different aircraft types the GRE cannot be used) counts towards the total number of hours testing allowed in any one year (Condition 26) and any day when such testing takes place does not count towards the 100 days in any calendar year when testing is not to take place (Condition 27). This is considered necessary to ensure that both conditions 26 and 27 remain reasonable and effective in protecting residential amenity.

181. In overall terms, despite the conflict with policy EP22 of the Norwich Replacement Local Plan, in light of other development plan policies, the proposals are considered to be in overall accordance with the Development Plan. Matters relating to economic growth as set out in the NPPF are a significant material consideration that weighs in favour of the proposal. In accordance with the NPSE, reasonable steps have been taken by the Council to mitigate and minimise adverse effects on health and quality of life through the recommended conditions to be imposed on any approval. Officers regard the level of noise

disturbance that may be caused by the application to be justified by reference to the parameters of the application, the conditions agreed with the applicant, and those additional conditions felt by officers to be appropriate and necessary to be imposed, as well as by the economic benefits that result from the activity proposed. In coming to this recommendation, officers have had regard to all of the principles of sustainable development (environmental, economic and social factors). The application is therefore recommended for approval subject to the imposition of conditions.

182. It is not considered that the proposal will give rise to an interference with the right to respect for private life under Article 8 of the Convention nor an interference with the entitlement to peaceful enjoyment of possessions under Article 1 of the First Protocol. Even if there were any interference, it is considered that any interference would be both justified and proportionate by reference to the qualifying terms of those Articles.

183. It should be noted that despite the planning permission having been quashed, application 09/00679/F still remains live and effectively undetermined. Notwithstanding that, in either scenario of the Council approving or refusing the subject application, it is considered very unlikely that such an application will be pursued further by the applicant or there being any likelihood of it being granted consent. Further, in the event of the subject application being approved and implemented, it would likely mean that the development subject of 09/00679/F would not be implementable due to physical and operational conflict with the GRE.

RECOMMENDATIONS

To approve Application No 12/01172/F Norwich Airport Amsterdam Way Norwich NR6 6JA and grant planning permission, subject to the following conditions:-

1. Time limit 3 years.

2. Development to be in accordance with submitted details.

3. Within 4 months of the date of the permission a scheme specifying the details of the hard-standing and a timetable for the construction and implementation of the engine test site, including the provision of the Ground Run Enclosure is to be submitted and approved by the local planning authority. 4 months is recommended to allow for the period for Judicial Review to lapse.

4. No use of the approved development is to take place until a scheme for the cessation of the use of high powered engine tests elsewhere on the airport has been submitted and approved by the local planning authority.

The condition will also include a definition of a ‘high powered engine test’ for the purposes of the permission as, the ground running of the aircraft engine where an element of the ground running of the aircraft engine is at high power being 70% of full power or above (with the exception of testing immediately prior to take-off) in combination over a period of time with the aircraft engine at less than 70% of full power. This definition will apply to recommended conditions 5, 21, 22, 23, 25, 26 and 27 below.

5. It is proposed to include a condition that addresses those circumstances where high powered engine tests or high powered engine testing can take place outside of the GRE. On commencement of use of the engine test facility:
(i) All ‘high powered engine testing’ (as defined below) or ‘high powered engine tests’ (as

defined above) to be carried out in accordance with the Norwich Airport Operating Framework August 2012 (or as amended) and the conditions specified in this permission.
(ii) all 'high powered engine testing' or 'high powered engine tests' shall take place from the engine test site hereby approved and shown outlined in red on Site Context Plan ref Drawing No. C-0177064-01 received on 15th June 2012 attached to this permission and no other site within the airport shall be used for that purpose unless:

- An unforeseen engine test is necessary for an aircraft larger than a B737-900 or B757-300.
- Wind conditions do not allow an engine test to take place within the GRE and failure to test would cause adverse and unacceptable logistical disruption to aircraft and airport operation.
- The GRE is unavailable and failure to test would cause a risk to public or aircraft safety.

(iii) a publicly viewable log of all high powered engine tests to be provided by the airport. Verifiable details of the power levels used during the tests undertaken to be made available within a maximum period of seven days to the local planning authority on request at no less than 24 hours notice.

This condition will also include a definition of 'high powered engine testing' (which is distinct from a 'high powered engine test' as set out at condition 4 above) for the purposes of the permission as, the ground running of the aircraft engine at high power being 70% of full power or above (with the exception of testing immediately prior to take-off). This is particularly relevant to recommended Condition 24 which seeks to restrict the amount of testing at 70% of full power or above to no more than 90 minutes in total in 1 day and no more than 30 minutes in total in 1 hour.

6. Details of surface water drainage scheme.

7. Contamination. Requirement for a preliminary risk assessment, site investigation scheme, remediation strategy and verification plan providing details of the data that will be collected in order to demonstrate that the works set out in the remediation strategy are complete.

8. Prior to occupation of the development a verification report demonstrating completion of the works set out in the approved remediation strategy in condition 9 and the effectiveness of the remediation shall be submitted to and approved, in writing, by the local planning authority. The report shall include a "long-term monitoring and maintenance plan" for longer-term monitoring of pollutant linkages, maintenance and arrangements for contingency action.

9. Reports on monitoring, maintenance shall be submitted to the local planning authority.

10. If, during development, contamination not previously identified is found no further development to take place (unless otherwise agreed in writing with the local planning authority) until a remediation strategy detailing how this unsuspected contamination shall be dealt with. The remediation strategy shall be implemented as approved.

11. During construction work, all fuels, oils and chemicals will be stored in appropriate containers within bunded compounds.

12. Scheme detailing the provision for on-site parking for construction workers to be approved.

13. Construction Traffic Management Plan required with proposals to control and manage construction traffic to minimise impacts on local roads.

14. Development to comply with the Construction Traffic Management Plan.

15. Wheel cleaning facilities for construction vehicles.

16. Wheel cleaning facilities to be used for the duration of the construction period.

17. Detailed scheme for passing bays for construction traffic on Bullock Hill to be submitted and approved.

18. Passing bays and off-site highway improvement works referred to in condition 17 to be provided prior to commencement of development.

19. Details of lighting to be submitted.

20. Details of fixed plant and machinery to be submitted.

21. Scheme of publicly viewable log of all engine tests (including in critical situations) and for the prior notification of testing and periods when it is anticipated that no engine tests are to be carried out. The log to include details of: the date and time of the start of the test; the aircraft type; the reason for the test; the duration of the test; the engine power levels used during the test; and the wind direction during the test; and the information on prior public notification to be kept up to date. This is to be submitted to and approved by the local planning authority prior to the use of the development.

This condition will also include a definition of 'critical situations' to be:

(i) ground running consisting of an engine test which is required urgently and could not have been foreseen; and
(ii) is necessary as a matter of public or aircraft safety.

Engine tests in a critical situation are to be subject to the control and agreement of a Director of Norwich Airport Limited in accordance with an agreed set of procedures. No use of the engine testing site to take place until the procedures have been submitted to and approved in writing. This definition will apply to conditions 22, 23, 24 and 25 below.

22. The loudest aircraft that is permitted to be subject to an engine test within the Ground Run Enclosure is to be a 737-400, unless the engine test is required to be carried out in a critical situation.

23. No engine tests are to be undertaken outside the hours of 0800-2000 Monday-Saturday and 0900-2000 on Sundays, public and / or bank holidays or at any time on the 25th December, unless the test is required to be undertaken in a critical situation.

24. The maximum duration of any high powered engine testing (i.e. with no element of low powered testing) is to be as set out below unless a critical situation arises:

- No more than 30 minutes in total in any 1 hour
- No more than 90-minutes in total in any 1 day.

25. No more than 1 aircraft to be subject to an engine test at any one time within the operational airport, unless in a critical situation.

26. No more than 1,300 hours of engine tests (i.e. high powered testing with associated low powered elements as defined above) shall take place in any one year. The time associated

with any tests undertaken in a ‘critical situation’ is also to be included in the 1,300 hours.

27. There shall be no engine tests on at least 100 days in any 1 calendar year.

28. A yearly external visual maintenance inspection of the Ground Run Enclosure is to be undertaken and reported to the local planning authority providing evidence that the integrity and operation of the structure is being maintained. If degradation of the structure is found to be occurring this must be rectified by Norwich International Airport to the satisfaction of the local planning authority.

29. Environmental Management Plan setting out a programme of ecological mitigation during construction and operation to ensure no adverse impact to protected species.

30. Materials for the GRE to be approved.

(Reasons for approval: The environmental information submitted with the application has been taken into account in the determination of the application and the decision has been made with particular regard to the policies 5, 6, 9, 10, 12, 15,and 17 of the adopted Joint Core Strategy for Broadland, Norwich and South Norfolk 2011, saved policies TRA1, TRA2, EP5, EP8, EP16, EP17, EP22, EMP2, and HBE12 of the adopted City of Norwich Replacement Local Plan 2004, the National Planning Policy Framework and other material considerations. It is considered that the development as proposed is acceptable in principle and would be in accordance with the relevant policies regarding the use of the airport. It is considered that the development will result in a materially detrimental impact on the living conditions of a relatively limited number of residents and conflict with saved Local Plan policy EP22. This impact is such that the extent and frequency of the use should be limited by conditions which will be of benefit to all those affected. Subject to the imposition of these conditions, and in view of economic benefits associated with the proposed use the proposal is considered acceptable in terms of design, transportation, noise, other emissions, water quality, drainage, visual impact, the re-use of materials, energy efficiency and all other material considerations and is therefore considered to meet the relevant policy requirements of the NPPF and the Development Plan.)

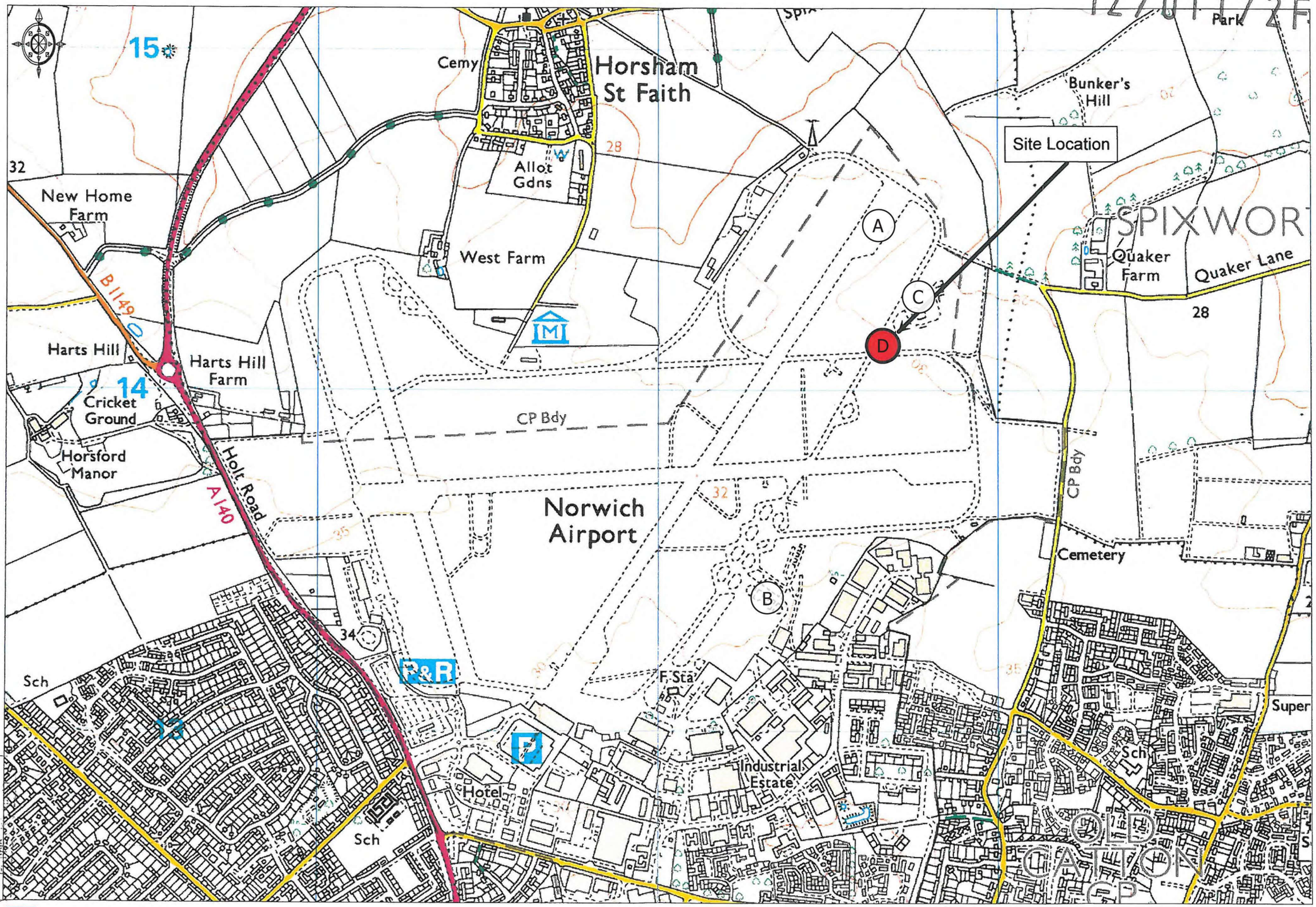
Article 31(1)(cc) Statement

The local planning authority in making its decision has had due regard to paragraph 187 of the National Planning Policy Framework as well as the environmental information submitted, the development plan, national planning policy and other material considerations, following negotiations with the applicant and subsequent amendments to the Environmental Statement the application has been approved subject to appropriate conditions and for the reasons outlined above.

Norwich International Airport - Engine Testing Facility
Site Location

Figure 1

12/01172F

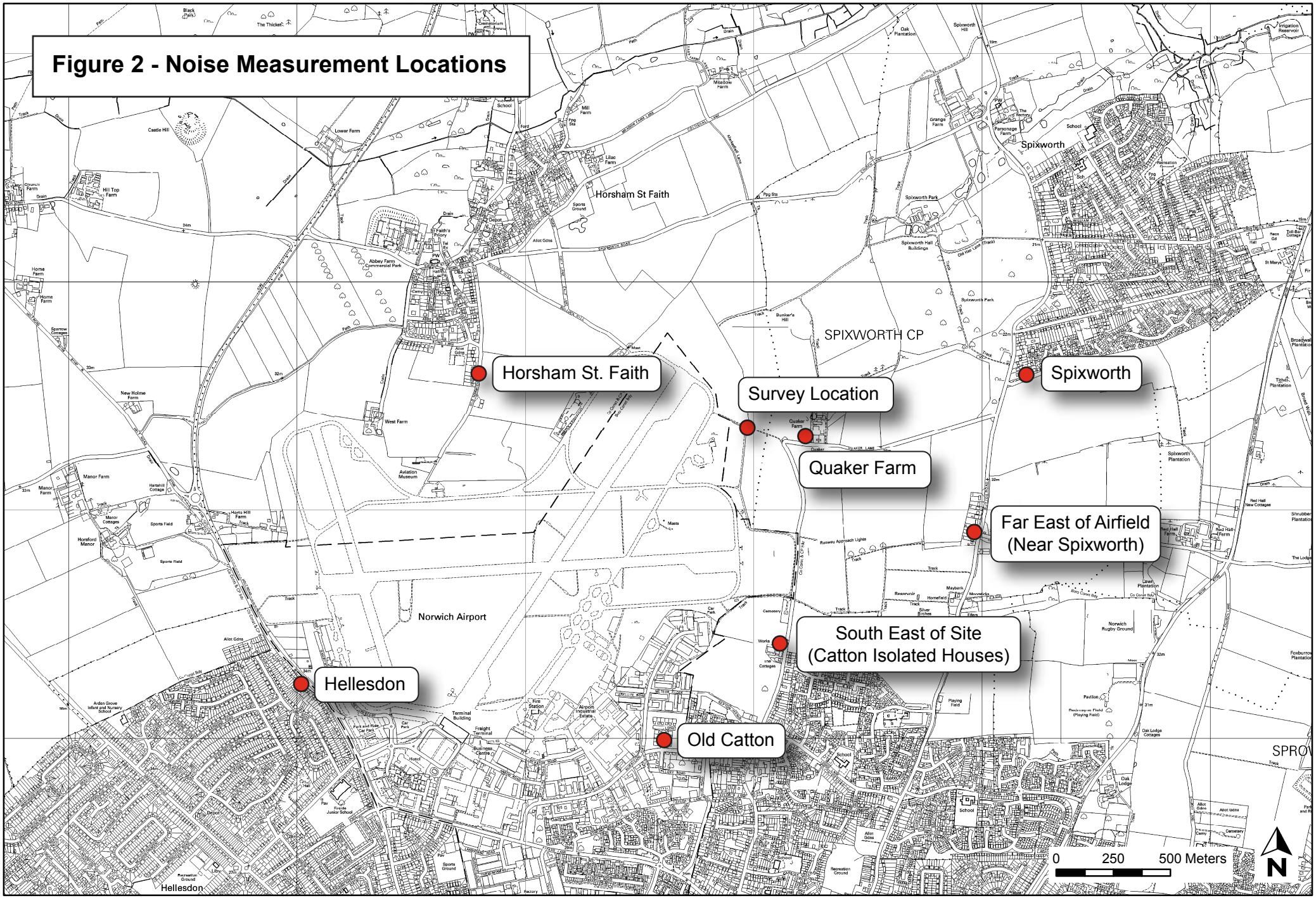


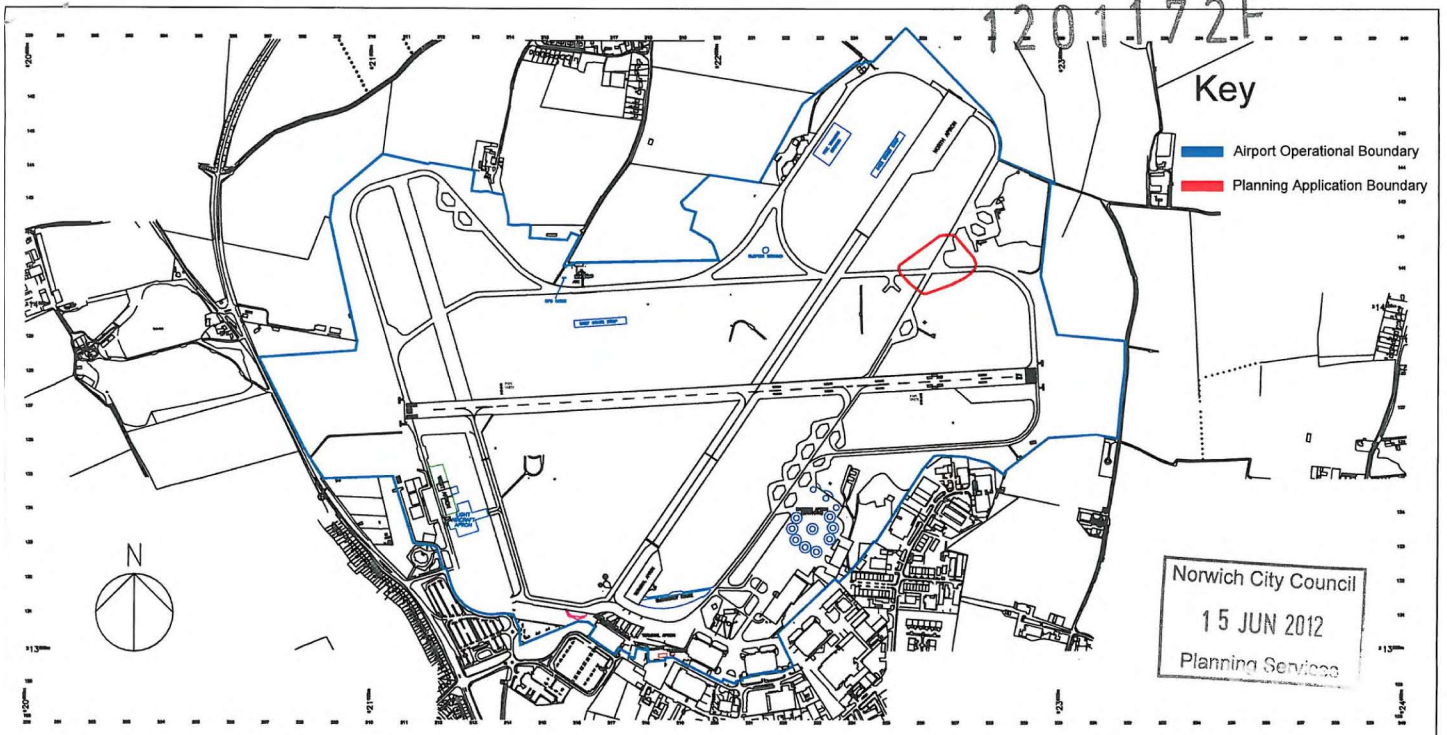
Promap®

1:15000

Drivers Jonas Deloitte.

Figure 2 - Noise Measurement Locations





For identification purposes only. All dimensions to be checked on site and used in preference to those given or scaled from the drawing, and must be brought to the attention of the Surveyor.

Address. Norwich International Airport

Title. Site Context Plan
Norwich International Airport

Client. Norwich Airport Ltd

Date 12/06/12

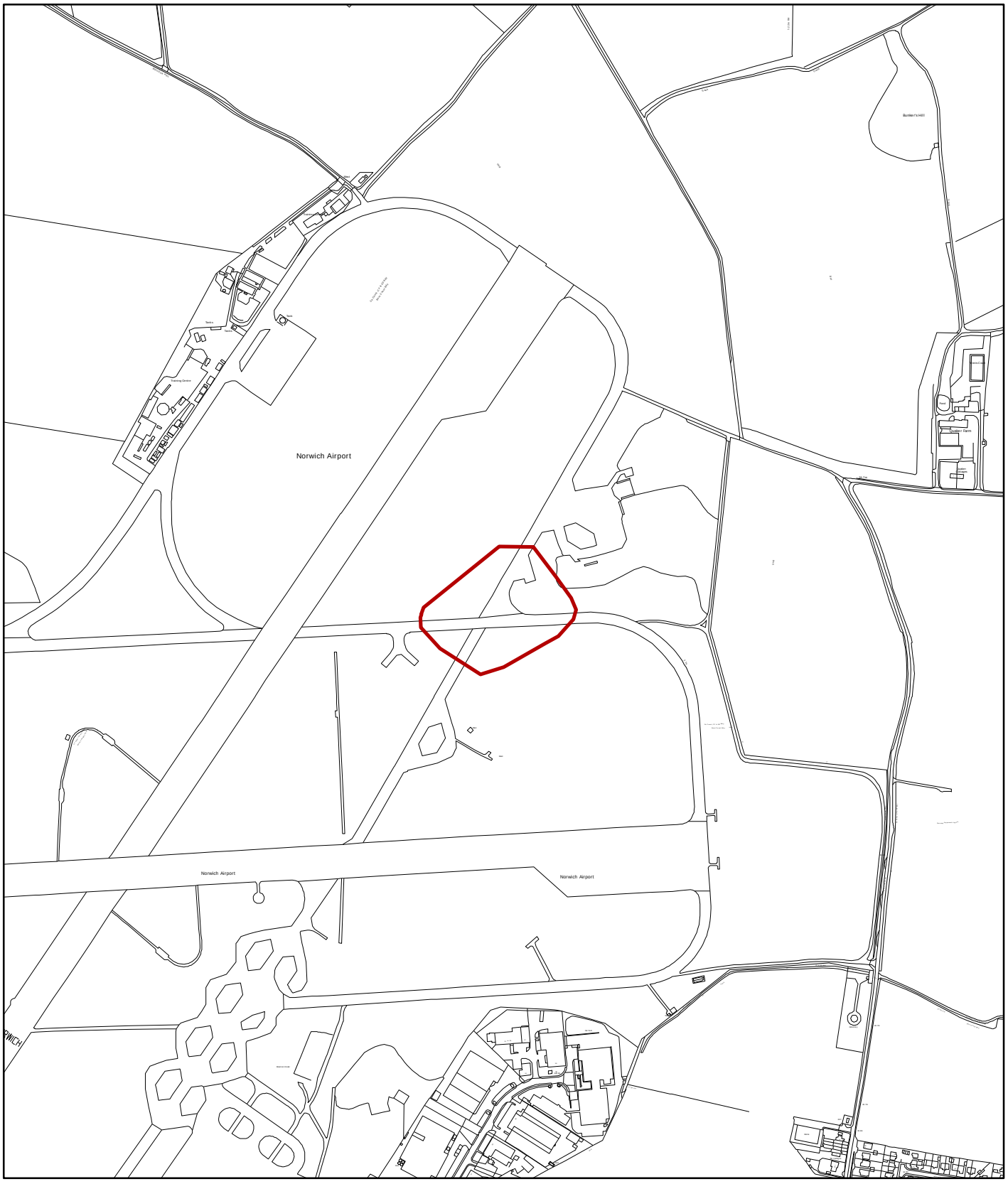
Drawing No. C-0177064-01

Drn by. AJ

File Ref. C-0177064

Scale A4 @ 1:15000
Scale A3 @ 1:8500

Drivers Jonas Deloitte.
FOR DELOITTE LLP
Athene Place, 66 Shoe Lane, London EC4A 3BQ
Telephone 020-7007 9000 Fax 020-7583 1198



Planning Application No 12/01172/F
Site Address Norwich Airport Amsterdam Way
Scale 1:7,500

NORWICH
City Council

PLANNING SERVICES

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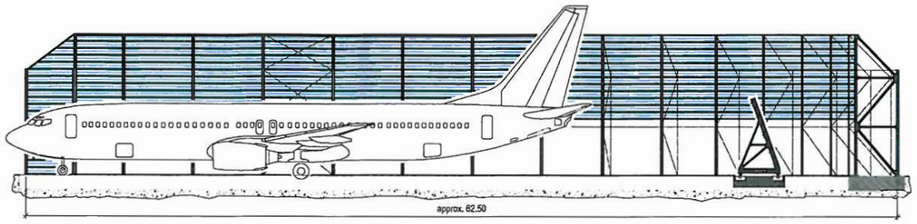
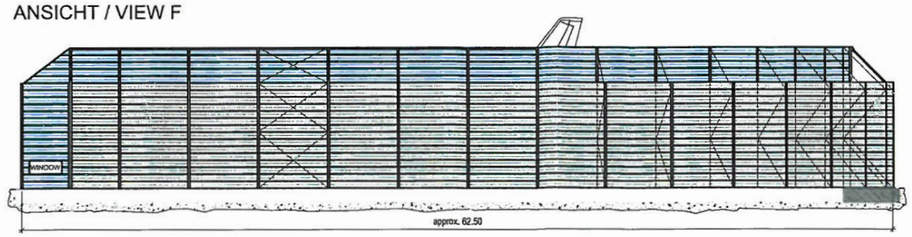
1201172F

SCHNITT / SECTION B-B



ANSICHT / VIEW F



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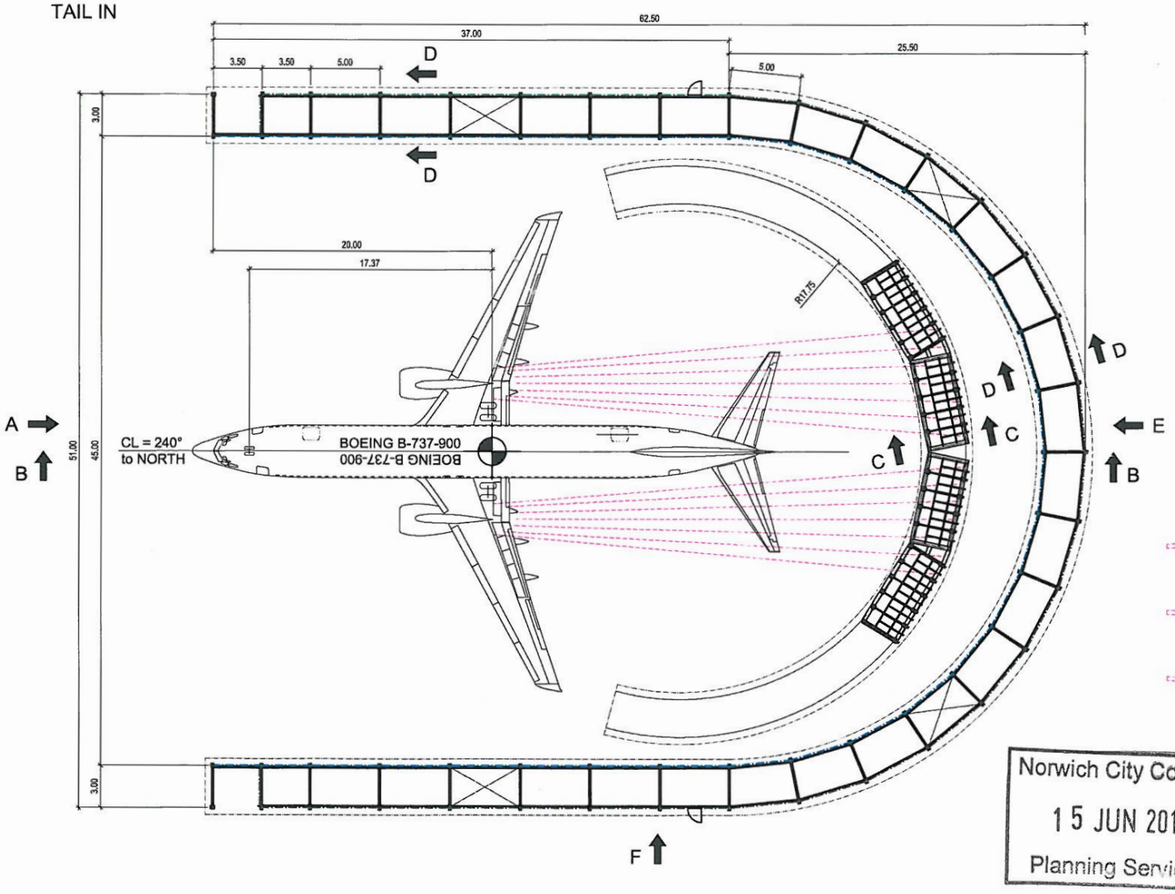
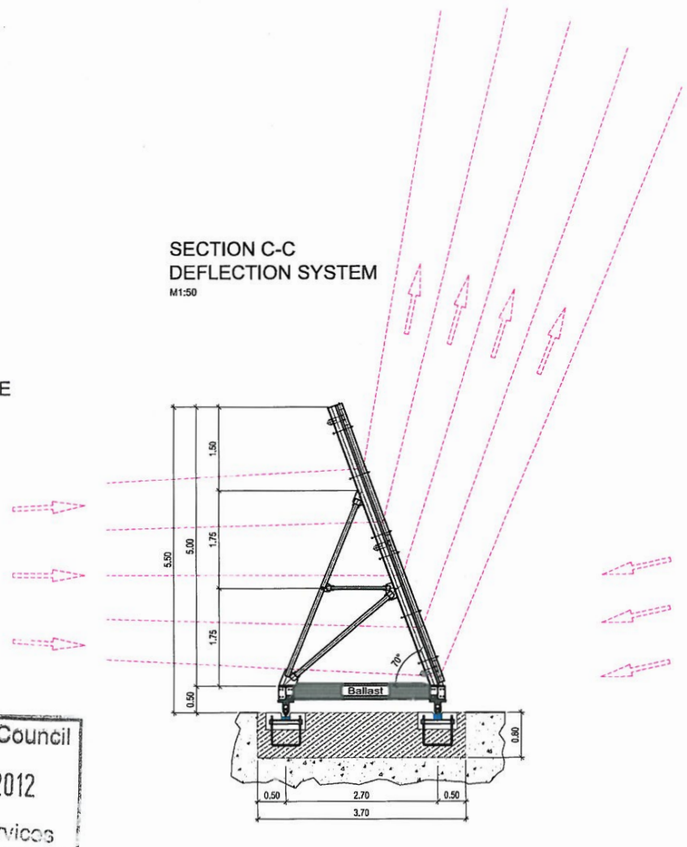
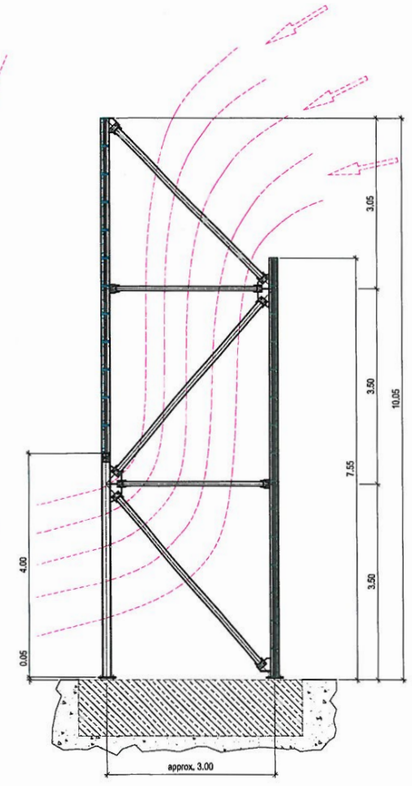


SECTION C-C
DEFLECTION SYSTEM
M1:50

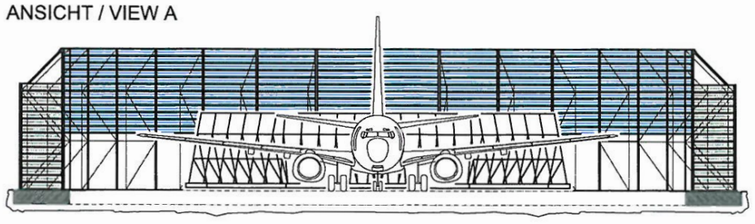


SECTION D-D
REAR AND SIDE NOISE WALL
M1:50
Inlet air flow only for AC nose in position

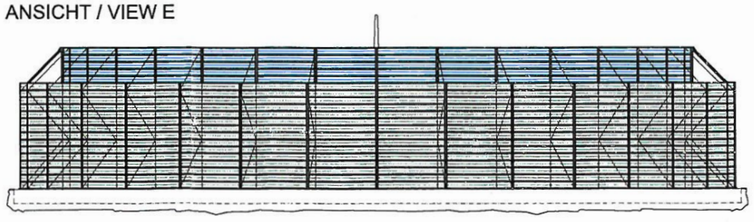


Norwich City Council
15 JUN 2012
Planning Services

ANSICHT / VIEW A



ANSICHT / VIEW E



Rev.	Reason of change	Date	Prepared	Date	Approved
C	View E and F added	15.06.2012	Metz	15.06.2012	Schalfhaupt
B	Revised Sections Description	14.06.2012	Metz	14.06.2012	Schalfhaupt
A	First Issue	04.05.2012	Metz	04.05.2012	Schalfhaupt

APS
Airport Protection Systems

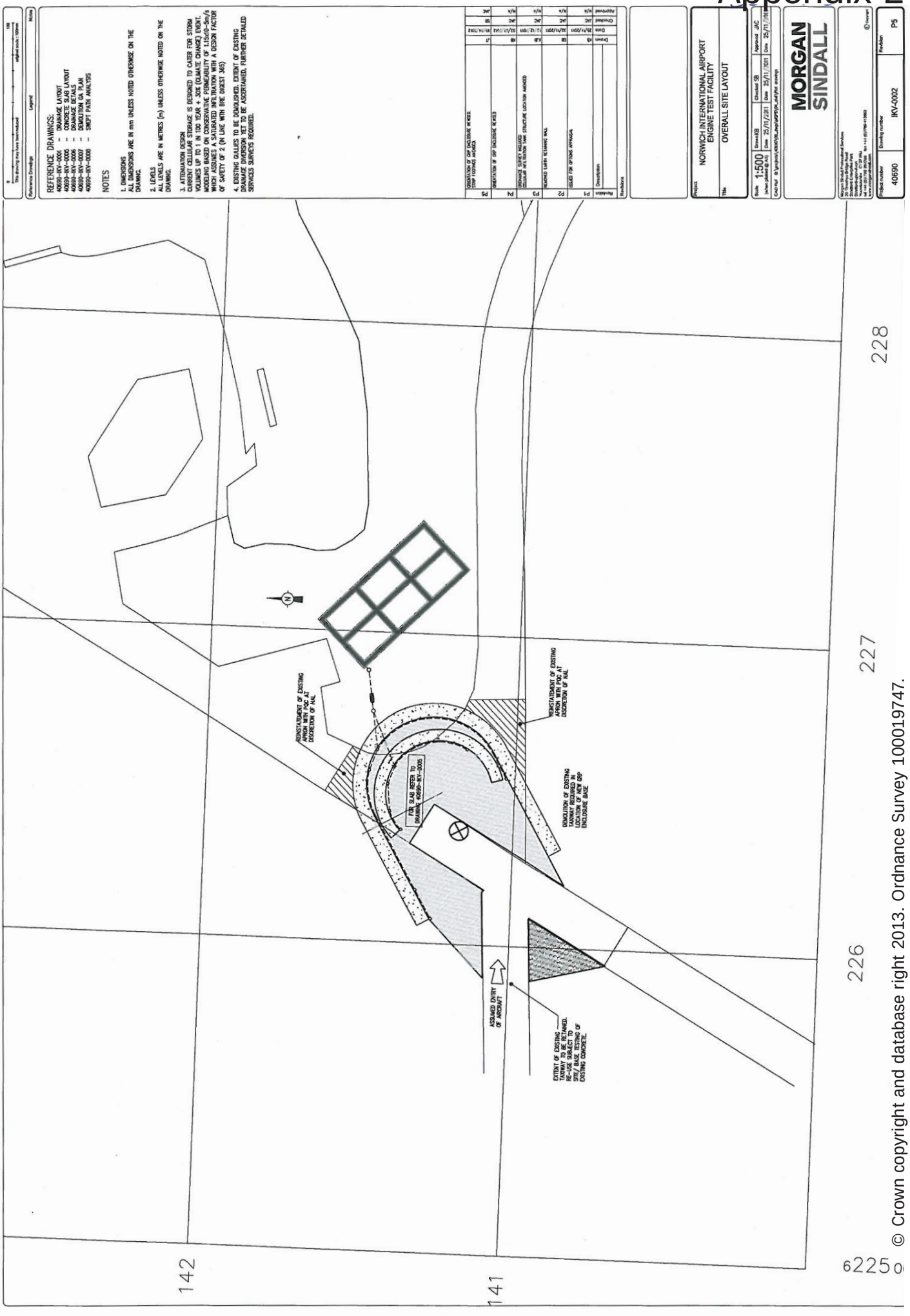
	Date	Name
Prepared	04.05.2012	Metz
Approved	04.05.2012	Schalfhaupt
	-	-

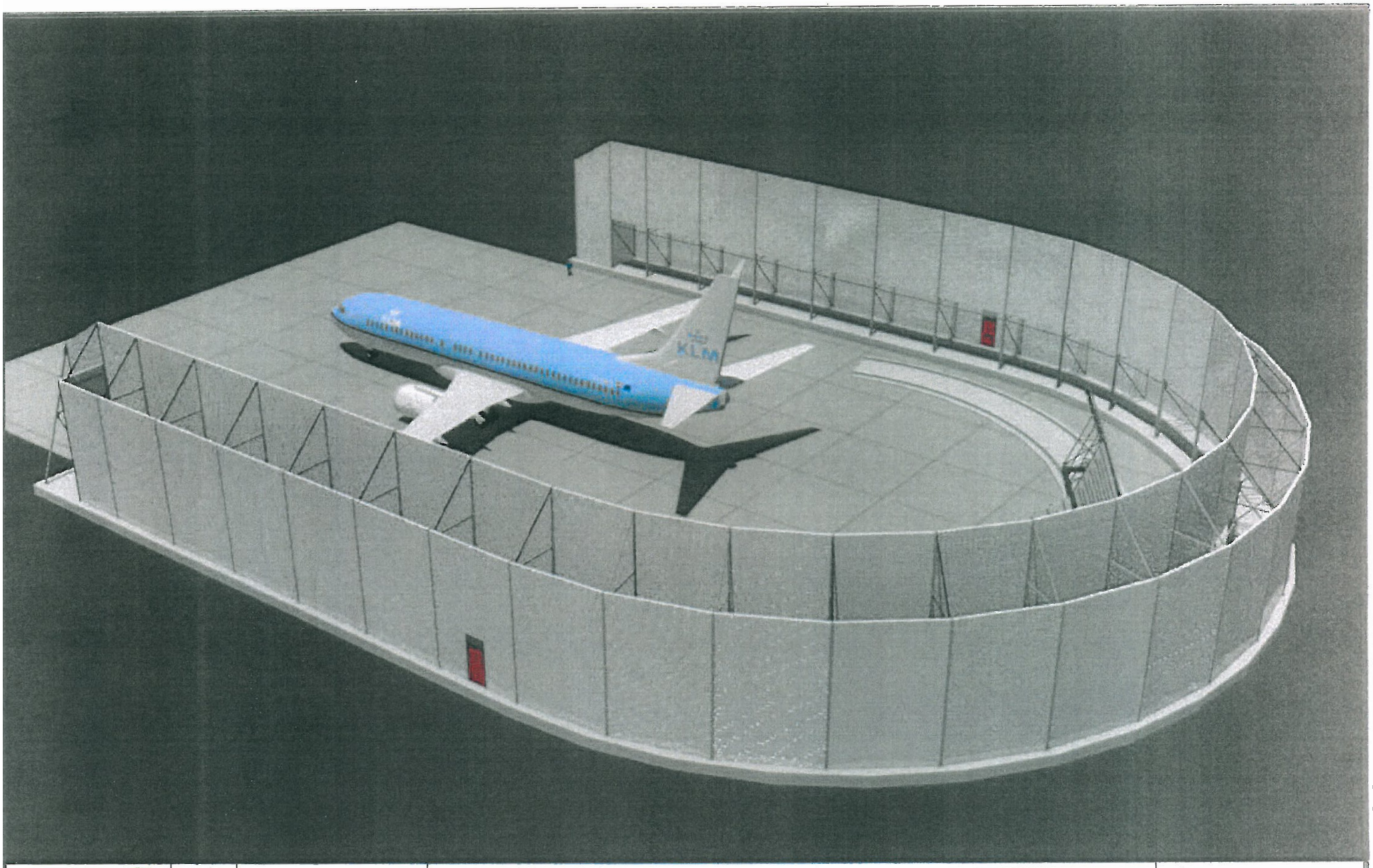
Project:
NORWICH AIRPORT
ENGINE TESTING FACILITY

Scale: 1:200 1:50

Title:
GENERAL ARRANGEMENT DRAWING
TAIL IN POSITION
NOISE WALL HEIGHT - 10M

Drawing-No.: P 10028.02 C
Project-No.: P 10028
Client: NORWICH AIRPORT
File-Name: P 10028.02.C
A1





Project	*Norwich International Airport*
Date	*8 May 2012*
APS Ref	*Norwich GRE, 10m version*

APS Airport Protection Systems

Rendering Description

View of the proposed facility with a B737-900W. The facility is designed for aircraft to placed in the facility and removed from the facility with tug operations.

For more information about this conceptual rendering, please contact APS Germany Gm... hschafhaupt@apsgermany.de www.apsgermany.com T... 49 (0) 89 /80 06 84-11

Appendix 2A: Percentage of wind directions at NWI

Nil Wind = 0.8%
VRB Wind = 5.3%

Appendix 1 Aircraft On-Wing Acoustic Attenuation and Operational Restrictions

On-wing acoustic control options available

- Soil bund
- Ground Run Enclosure (GRE)
- Hush House

Soil Bund

This is an engineered soil structure, usually horseshoe-shaped to attenuate noise by deflection. Lack of air circulation means that it can only be used in certain wind conditions. A soil bund does not incorporate acoustically treated walls.

Ground Run Enclosure (GRE)

This is a cost effective solution comprising a three sided open air run-up pen, typically referred to as a Ground Run Enclosure (GRE). This facility is open on one end, to allow the aircraft to be installed and removed, and typically includes a rear blast deflector and acoustically treated sidewalls. It attenuates noise during the test of in frame aircraft engines, while providing a stable aerodynamic profile which does not inhibit proper engine operation and test. The GRE has to be designed for the range of aircraft sizes and designs that a particular commercial aerodrome may handle.

Hush House

The Hush House is primarily designed for military fighter aircraft use or aircraft design testing. It provides an enclosed, acoustically treated environment to run various aircraft types with the engines installed or to test un-installed engines. The Hush House provides an enclosed work area for preparing the aircraft or un-installed engine, also equipment rooms and an environmentally controlled, acoustical control room for test operators to work in during engine operation.

Hush Houses generally include facilities for on-wing and off- wing advanced data acquisition systems for accurate engine data capture, as well as a control room. The Hush House is a more specialist facility than the GRE and designed for more enhanced data capture.

Ground Run Acoustic Mitigation in Current Operation

Airport	Acoustic Mitigation
Cambridge	Three sided soil bund for high powered ground runs.
London Heathrow	Two GREs at their East and West Base for high power engine testing.
Exeter	Operates a full power run-up deflection system (no acoustic walls)
Stansted	Operates a GRE.

Manchester	Operates a GRE
Lisbon, Portugal	Circular run-up deflection system for high power engine tests that allows ground running in any orientation (no acoustic walls)
Hannover, Germany	Three sided GRE with 2 gates.
Aeronavali Airport, Naples	Operates a GRE.
Madrid Airport, Spain	Operates a GRE.
Toulouse Airport, France	Circular GRE built with moving walls and rotating deflection system for A380.

Ground runs are undertaken in the open at all commercial airfields if no engineered structure is provided.

Operational Restrictions

The following information on London Heathrow and Amsterdam Schipol is taken from published sources online:

London Heathrow

Operational instructions for ground running can be found in full here:

http://www.boeing.com/commercial/noise/LHR11_OSI_03_11.pdf

Two engine power settings are defined: ground idle; and high power (for anything above ground idle).

- During the day (0700 to 2300) all high power ground runs must take place in a GRE or in another designated area on the airport.
- During the night, all high powered runs must take place in a GRE.
- No restrictions on the duration of high powered ground runs between 0700 and 2300.
- Between 2300 and 0700 the total ground running exposure must not exceed 150 minutes. Within the 150 minutes, the total period at high power may be no greater than 60 minutes in one night or exceed a rolling 30 day average of 20 minutes.

The restrictions on high power engine testing proposed at NIA are therefore greater than those at London Heathrow.

Schipol Airport, Amsterdam

Full details of the engine testing restrictions can be found here:
http://video.schiphol.nl/intranet/handboeken/en/Bijlage-X-EN.pdf

Key points are as follows:

- High powered engine tests undertaken within an enclosure with a 6m high GRE.
- Maximum power tests with 2 engines are allowed between 0700 and 1900.
- Between 1900 and 2300 tests are allowed with one engine at max power and one at part power (defined as above idle, up to 80% of max power).
- Between 2300 and 0700 max power tests are not permitted, however part power tests are.
- Testing is further controlled by restrictions on durations of tests through a complex system of "noise budgets". Each aircraft type is attributed a percentage of the total daily noise budget (100%) according to the type of test undertaken and how many engines are tested at a particular power level.
- A B737 is permitted to run for an unlimited time with both engines on maximum power between 0700 an 1900 and this uses 1% of the total daily budget. However, a 10 minute test with both engines on max power between 1900 and 2300 uses 15% of the total daily budget.

Aircraft of a similar specification to the largest and noisiest aircraft tested at Norwich International Airport (NIA) are therefore permitted to test their engines within a GRE with lower walls, for an unlimited period between 0700 and 1900. This is far greater than is proposed at NIA, which is a maximum of 90 minutes of testing above 70% power on aggregate between 0800 and 2000.

The following information has been provided by the Applicant based on its knowledge of operations at other airports and conversations with their operators:

<u>Lasham Airfield, Hampshire</u>

- The Maintenance, Repair and Overhaul (MRO) company ATC has its headquarters at Lasham Airfield. It conducts a full MRO operation of a similar size to KLMUKE at Norwich International Airport.
- All engine testing takes place in the open, with no noise attenuation technology.
- There are no planning restrictions on engine testing.
- The airfield voluntarily restricts testing to between 07:00 and 20:00 each day. This is breached if there is a commercial/operational need to do so.

<u>Southend Airport</u>

- Engine testing is undertaken between 07:00 and 20:00 Monday to Saturday and between 09:00 and 20:00 on Sundays and bank holidays.

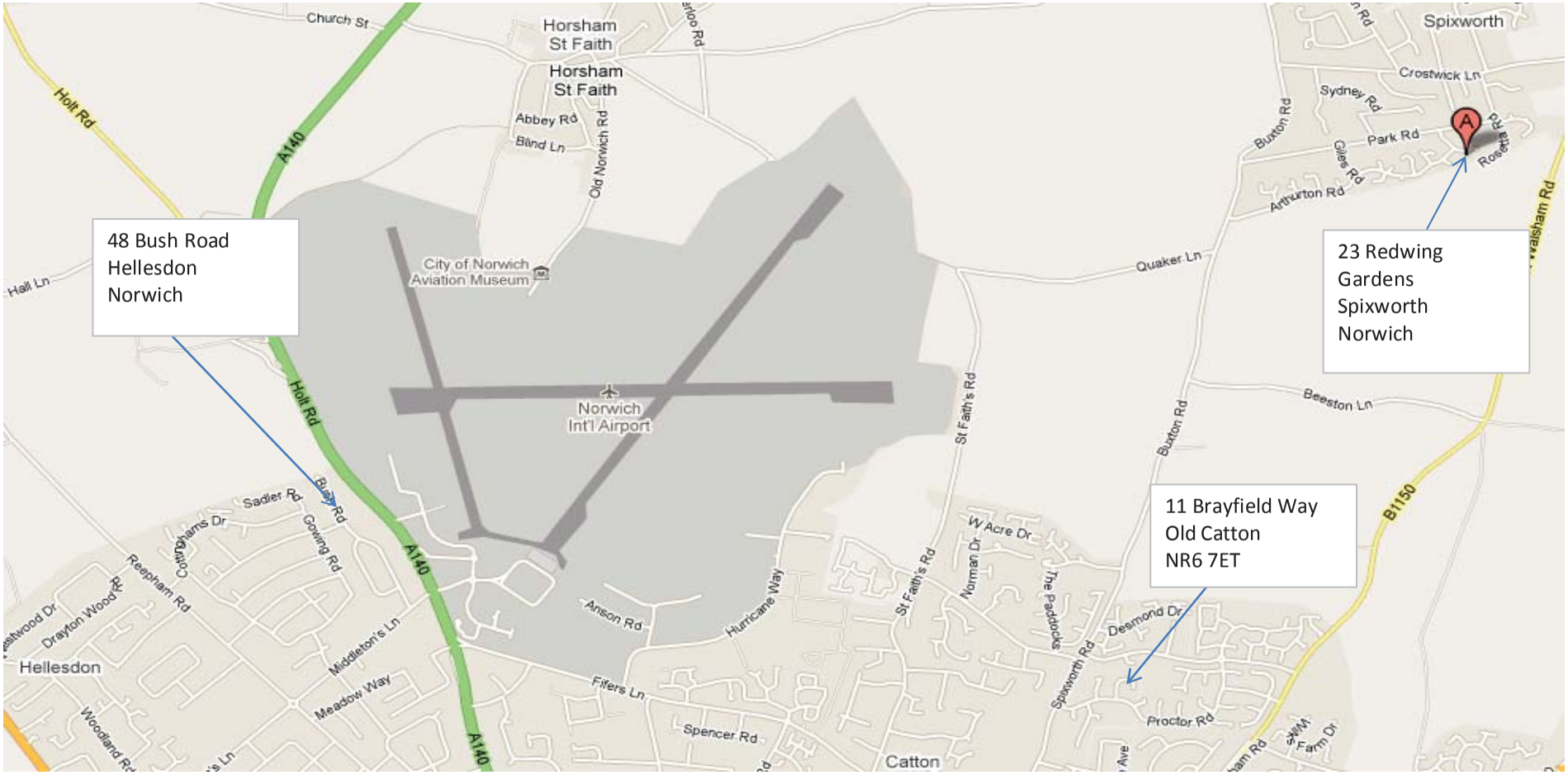
<u>Exeter Airport</u>

- Engine testing is undertaken between 06:00 and 22:30 7 days a week.

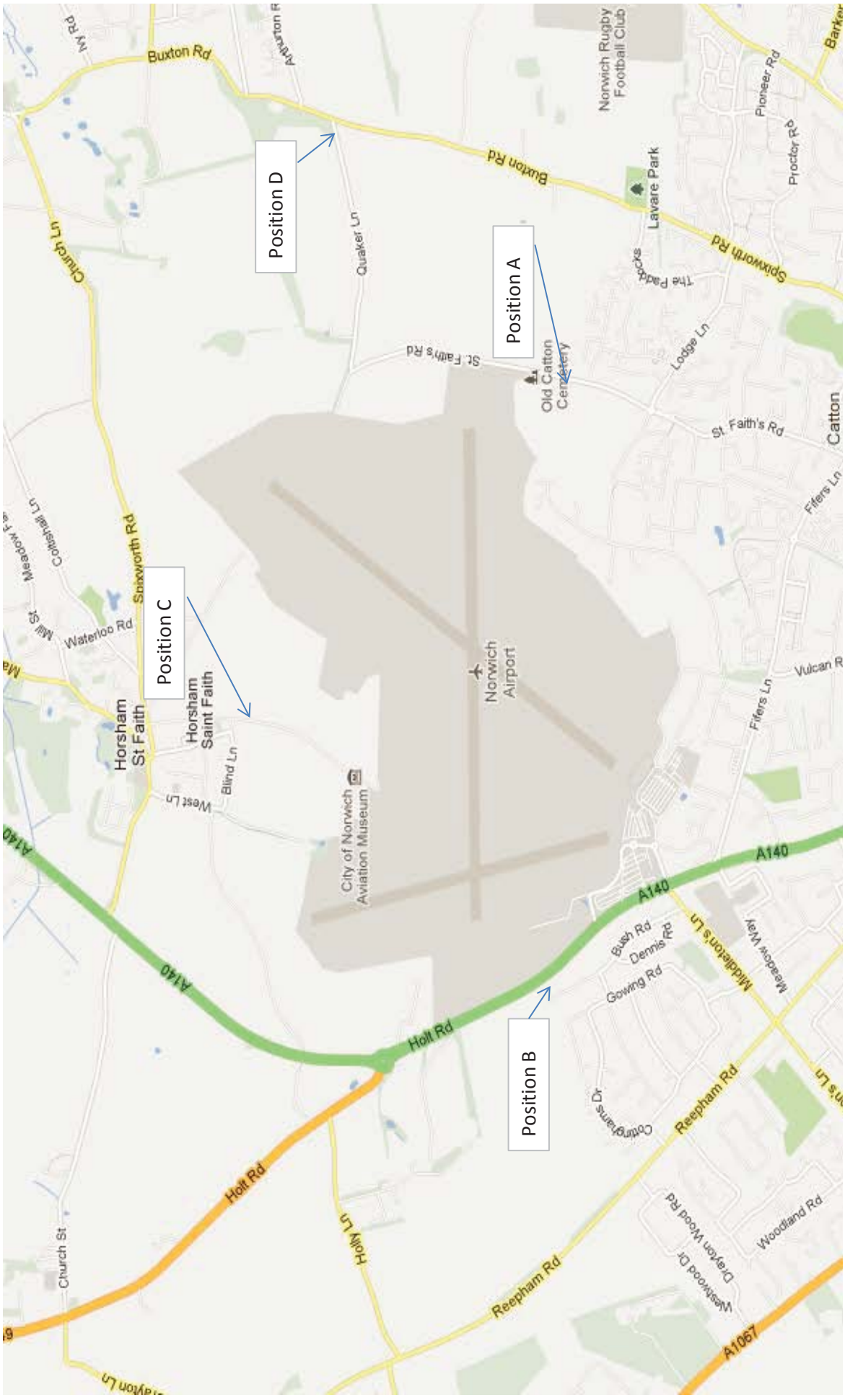
<u>Luton Airport</u>

- Engine testing is undertaken between 06:00 and 23:00 Monday to Friday and between 07:00 and 23:00 Sundays and bank holidays

Norwich Airport - Survey locations



Measurement locations



Site options