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By email: alastair.burdonjones@jacobs.com

Our ref: 065301-01

Dear Alastair

Re: New Primary School at Gregory Hills – SSDA 23.0 Aviation Impact Letter

Jacobs are the project managers facilitating the construction of a new primary school at Gregory Hills for the NSW Department of Education.

Jacobs is seeking a letter of recommendation that the proposed primary school will not impact any flight paths and is not in the vicinity of any helicopter landing sites (HLS).

This GHPS SSDA 23.0 Aviation Impact Letter accompanies an Environmental Impact Statement (EIS) pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act), in support of a State Significant Development Application (SSDA) for the construction and operation of a new primary school at Gregory Hills (SSD-41306367).

This report addresses the Secretary's Environmental Assessment Requirements (SEARs) issued for the project, notably:

SEARs Requirement	*Response*
23. Aviation	
If the development proposes a helicopter landing site (HLS), assess it potential on the flight paths of any nearby airport or HLS.	• The site will not provide for a HLS • No impact on any other HLS • No impact on flight operations at Camden Airport
If the site contains or is adjacent to a HLS, assess the impacts of the development on that HLS.	• No impact upon Cambelltown Hospital or any other HLS.

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1.1. Introduction

The proposed new primary school at Gregory Hills will be located between Wallarah Circuit, Long Reef Circuit and Gregory Hills Drive in Gregory Hills, an outer southern suburb of Sydney to the northeast of Camden. The building itself will be up to three stories high and have a maximum elevation of 128.15 m AHD.

1.2. Proposal

The proposal is for a new primary school at Gregory Hills that generally comprises the following:

- 44 General Learning Spaces.
- 4 Support Learning Spaces.
- Administration, staff hub, amenity and building service areas.
- Library, communal hall and canteen.
- Outside School Hours Care (OSHC) services.
- Sport courts, outdoor play space, a Covered Outdoor Learning Area (COLA) and site landscaping.
- Dedicated bicycle and scooter parking.
- Three (3) kiss and drop spaces for Supported Learning Students (SLS) located on Wallarah Circuit.
- On-site car parking.
- Signage.
- Footpath widening on Wallarah Circuit.

Figure 1 Site plan (source Bennett and Trimble)

1.3. Site Description and Location

The site is located in Dharawal Country at 28 Wallarah Circuit, Gregory Hills NSW 2557, and is legally described as Lot 3257 DP1243285.

The site is located within the Camden Local Government Area and is within the Turner Road Precinct of the South-West Growth Centre.

The site has an area of approximately 2.926ha (by Deposited Plan) and falls from the south-east corner (RL116.5) to the north- west corner (RL113).

The site has three (3) street frontages:

- Wallarah Circuit (southern boundary)
- Gregory Hills Drive (northern boundary)
- Long Reef Circuit (eastern Boundary).

The site is primarily vacant land, with the exception of an existing group of trees that have been retained in the southwest corner of the site that pre-date the subdivision and development of the precinct. There is also an existing electrical substation located on the south-eastern boundary.

There are easements of varying widths located to the northern boundary identified for drainage.

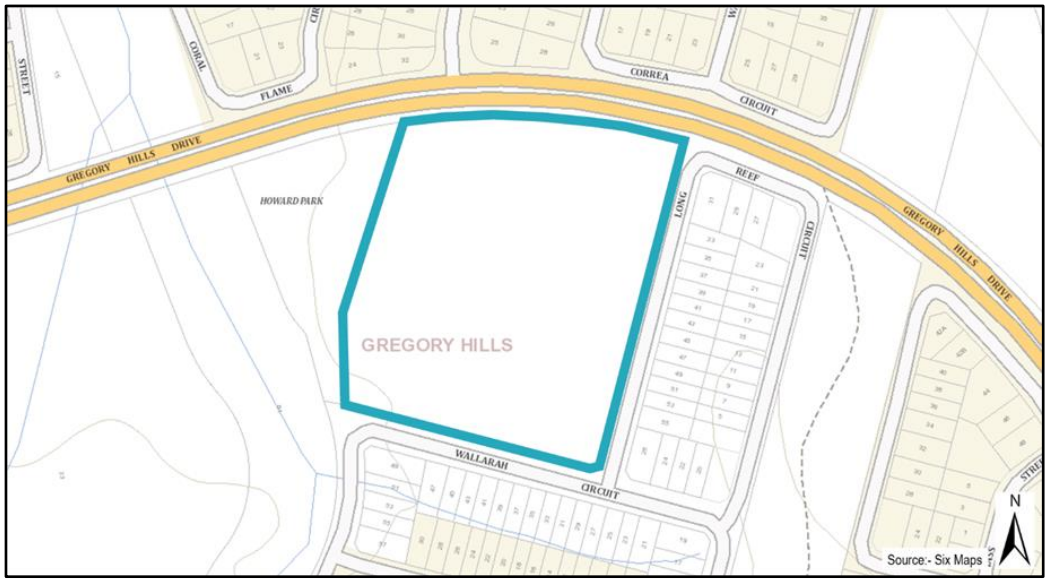

Figure 2 Locality Map (Six Maps)

1.4. Surrounding Development

To the north, east and south of the site is emerging and recently completed residential development.

To the east of the residential area fronting Long Reef Circuit are high voltage power lines within an easement which include pedestrian paths and cycleways.

To the west of the site, beyond Sykes Creek and Howard Park, is the Gregory Hills town centre. A pedestrian bridge links Wallarah Circuit with the town centre across Sykes Creek.

Figure 3 Site Aerial Map (Source: Bennett and Trimble)

Figure 4 Surrounding Development (Nearmap)

Mobile cranes will be used during the construction of the buildings and operate to a maximum height of approximately 15 m above the top of the building, at 145 m AHD.

The development site is located approximately 8 km northeast of Camden Airport and 6.1 km northwest of Cambelltown Hospital, which has a HLS located within its precinct.

The development site has high-tension power lines, with supporting towers that appear to be at least 60 m above ground level within 120 m east of the site and 480 m north of the site.

An aerial image showing the location of the site in relation to Camden Airport and Cambelltown Hospital is provided at Figure 5 (source: Google Earth).

Figure 5 Site location

1.5. SEARs related to Aviation

This report addresses the Secretary's Environmental Assessment Requirements (SEARs) issued for the project, notably:

SEARs Requirement	*Response*
23. Aviation	
If the development proposes a helicopter landing site (HLS), assess it potential on the flight paths of any nearby airport or HLS.	• The site will not provide for a HLS • No impact on any other HLS • No impact on flight operations at Camden Airport
If the site contains or is adjacent to a HLS, assess the impacts of the development on that HLS.	• No impact upon Cambelltown Hospital or any other HLS.

The assessments directly related to the SEARs are detailed in the following sections.

1.6. Camden Airport

Camden Airport, located approximately 8 km southwest of the development site, is a Certified Aerodrome under Civil Aviation Safety Regulations 1998 (CASR 1998), and operated by Camden Airport Limited (CAL).

It is also a "core regulated airport" under the Airports (Protection of Airspace) Regulations 1996 which provides the airport operator, who leases the airport from the Commonwealth Government with airspace protection to ensure the safety, efficiency or regularity of existing or future air transport operations into or out of the airport.

Prescribed Airspace, which is referred in the regulations, in the context of this assessment comprises the airspace above any part of either an Obstacle Limitation Surface (OLS) or Procedure for Navigation Services – Operations (PANS-OPS) surface of the Camden Airport.

PANS-OPS Surfaces

PANS-OPS surfaces are determined by obstacle clearance criteria determined by the International Civil Aviation Organisation (ICAO) and accepted by Australia under CASR Part 173 Manual of Standards, that provide a margin above obstacles and terrain to determine minimum flight altitudes during specific instrument approach procedures at Certified Aerodromes. Instrument approach procedures are used in weather conditions that preclude the pilots being able to navigate by visual reference to the ground or water and need to rely on aircraft instrumentation to navigate to the appropriate runway.

An instrument approach procedure (RNP W) is published for Camden Airport in the Australian Aeronautical Information Publication. The lowest protection surface associated with the instrument approach procedure that exists overhead the development site is a sloping surface at 400 m AHD related to the missed approach segment of the RNP W procedure as indicated on Figure 7.

The development site is located laterally outside all other Instrument approach procedure protection surfaces component of Camden Airport's Prescribed Airspace.

Figure 6 shows the Camden PANS-OPS diagram published in the 2020 Masterplan while Figure 7 is an inset detailing the location of the development site.

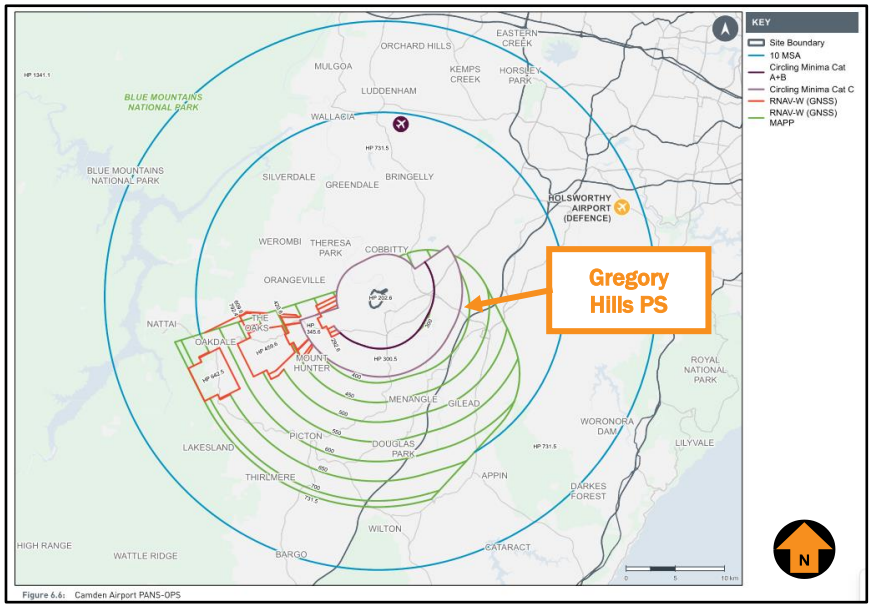

Figure 6 Camden PANS-OPS Diagram

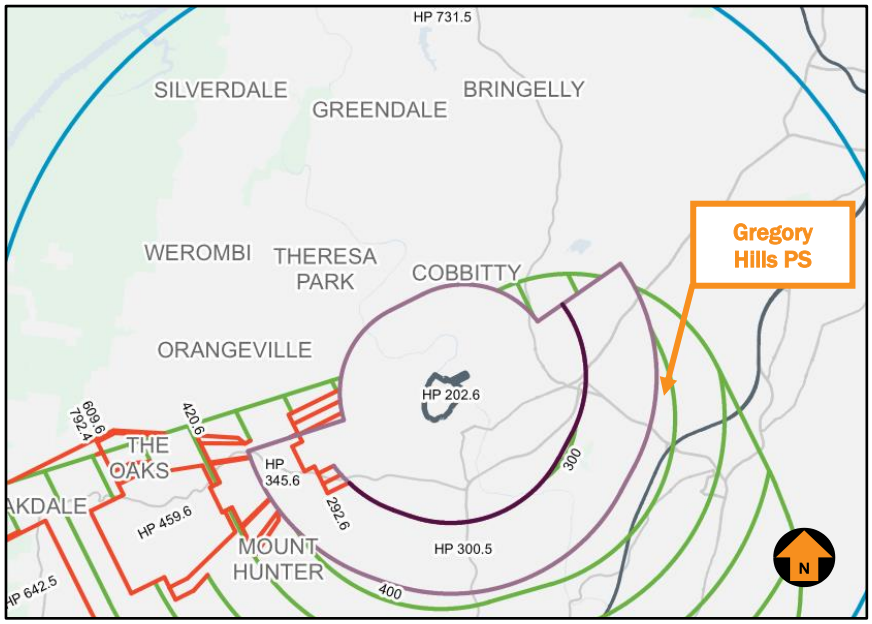

Figure 7 PANS-OPS diagram Inset

The proposed new primary school at Gregory Hills will not infringe any PANS-OPS surfaces associated with Camden Airport.

Obstacle Limitation Surfaces

Camden Airport's OLS is required by and defined under the CASR Part 139 – Aerodromes and established in accordance with ICAO specifications.

The OLS comprises a series of surfaces in the airspace surrounding the airport, which must be kept free and clear of obstructions that could be hazardous to aircraft during visual flight operations. It is intended that these surfaces prevent development of obstructions within the airspace, which could adversely impact air navigation or airport usability.

Figure 8 shows the extent of the Camden Airport OLS from the airport's Masterplan 2020, Figure 6.5.

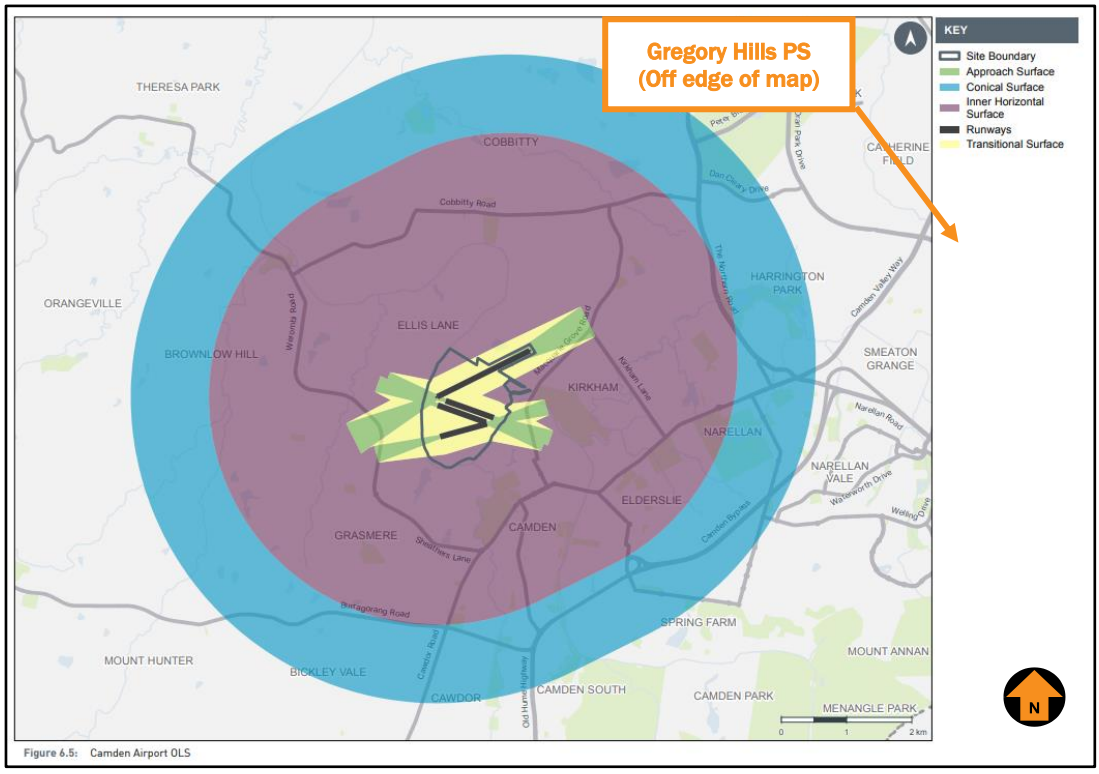

Figure 8 Camden Airport Obstacle Limitation Surfaces

The nearest portion of the OLS to the development site is located west of Camden Valley Way, approximately 4.6 km southwest of the development.

The proposed new primary school at Gregory Hills does not infringe the OLS associated with Camden Airport.

1.7. Helicopter Landing Sites

HLS in the Sydney urban areas are generally provided at hospitals for emergency services operations and at some commercial and private facilities approved by local planning authorities for the operation of helicopters.

The nearest HLS is located at Campbelltown Hospital, approximately 6.1 km southeast of the development site.

This HLS is not provided with instrument approach procedures for operations and therefore is limited to visual flight operations only.

Flight paths to the HLS are not publicly available but, in any case, would not exist at low altitude above the development site.

Should a HLS be proposed for a property nearby to the development site, the high-tension power lines and supporting towers in close proximity to the development site would need to be taken into account. The towers appear to have a maximum height of 60 m above ground and would effectively shield the new primary school at Gregory Hills from flight paths to any likely HLS development.

1.8. Visual flight operations

Regulation 91.265 of the CASR 1998 prescribes the minimum flight altitudes for aircraft being flown over a populous area or a public gathering. This regulation limits aircraft to a minimum height of 1000 ft above the highest feature within a horizontal radius of 300 m of the point on the ground immediately below the aircraft, except during take-off or landing.

The area surrounding the proposed new primary school at Gregory Hills is considered populous which would require aircraft operating in the area to maintain an altitude at least 1000 ft above it.

The development site is located within a designated flying training area – D556A. This training area is extensive and extends to the Great Western Highway approximately 26 km north of the development site. It is used for visual flying training operations for Bankstown based flying schools. All of the flight operations associated with D556A are required to comply with Regulation 91.265.

The new primary school at Gregory Hills will not impact on flight operations in the area.

1.9. National Airports Safeguarding Framework

The National Airports Safeguarding Framework (NASF) covers planning for the larger civilian airports subject to the Commonwealth Airports Act 1996 as well as military airports, smaller regional and general aviation airports, aviation facilities, and strategic helicopter landing sites. The Safeguarding Framework accommodates differences in size, use and local circumstances of individual airports in its application.

The following paragraphs are related to Camden Airport, the nearest applicable airport under the Airports Act 1996.

Public Safety Areas

NASF Guideline I, *Managing the Risk in Public Safety Areas at the Ends of Runways* provides guidance to planning authorities on the assessment and treatment of potential increased to public safety near the ends of runways.

Public Safety Areas (PSA) are areas of land at the end of a runway within which development should be restricted to control the number of people on the ground at risk of death or injury in the event of an aircraft accident on take-off or landing.

PSA are generally 350 m wide reducing to 250 m wide at 1000 m from the end of the runway.

The new primary school at Gregory Hills is located approximately 7.9 km from Camden Airport and therefore outside the PSAs.

Lighting Distractions

NASF *Guideline E, Managing the Risk of Distractions to Pilots from Lighting in the Vicinity of Airports* provides guidance to assist local governments and airport operators to jointly address the risk of distractions to pilots of aircraft from lighting and light fixtures near airports.

Figure 9 shows the Lighting Distraction Area associated with Camden Airport. (2020 Masterplan)

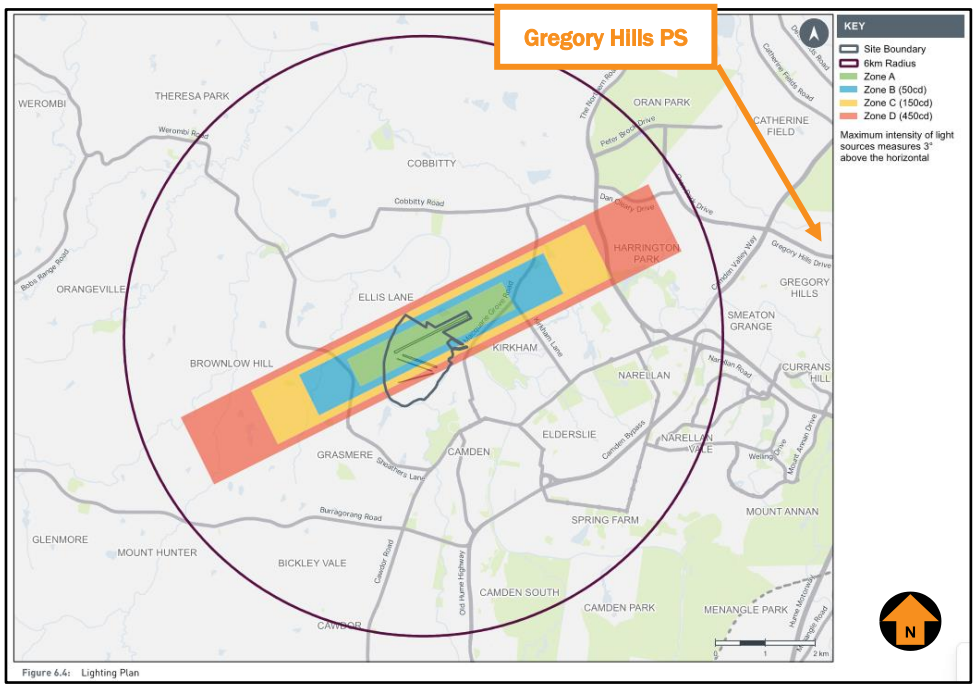

Figure 9 Camden Airport Lighting Distraction Area

The new primary school at Gregory Hills is located outside the lighting distraction zone and therefore any lighting planned within the precinct will not impact upon flight operations at Camden Airport

Building Induced Windshear

NASF Guideline B, *Managing the Risk of Building Generated Windshear and Turbulence at Airports* is designed to assist land use planners and airport operators in their planning and development processes to reduce the risk of building generated windshear and turbulence near runways at airports. The building generated windshear / turbulence issue becomes safety critical when a significant obstacle, such as a building, is located in the path of a crosswind to an operational runway. The wind flow will be diverted around and over the buildings causing the crosswind speed to vary along the runway.

Figure 10 details the Wind Shear Assessment envelopes at Camden Airport (Masterplan 2020).

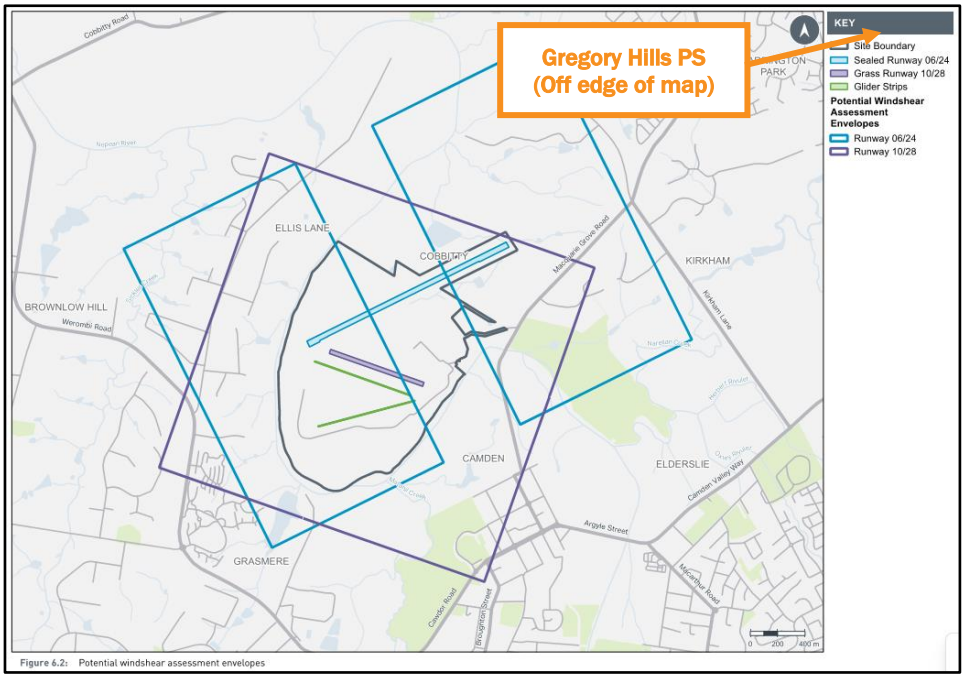

Figure 10 Wind Shear Assessment Envelope

The new primary school at Gregory Hills is located outside the wind shear assessment areas and will not create any windshear across the runways or flight paths at Camden Airport.

Wildlife Strikes

NASF Guideline C, *Managing the Risk of Wildlife Strikes in the Vicinity of Airports* provides guidelines to State/Territory and local government decision makers to manage the risk of collisions between wildlife and aircraft at or near airports where that risk may be increased by the presence of wildlife-attracting land uses.

The wildlife protection buffer zones extend to 13 km from Camden Airport's boundary.

Although the proposed new primary school is located within these buffer zones, the design of the premises and activities at the school are not likely to increase the risk of a "bird strike" considering that aircraft operating overhead the site will be at a minimum of 1000 ft above the site.

1.10. Conclusion

Aviation Projects considers that the proposed new primary school at Gregory Hills:

- will not infringe Prescribed Airspace or impact flight operations at Camden Airport
- will not have an impact on helicopter operations at Cambelltown Hospital or any other HLS
- will not affect visual flight operations in the area
- will not impact any of the NASF Guideline provisions related to:
    - wildlife strikes
    - lighting distractions
    - public safety areas
    - building induced wind shear across runways and flight paths.

Overall, the proposed new primary school at Gregory Hills will not impact on safety of flight operations in the area.

If you wish to clarify or discuss the contents of this correspondence, please contact me on 0424 110 501.

Kind regards

Peter White

Aviation Consultant

30 September 2022