

Ministry of Defence
Defence Equipment and Support (DE&S)

RAFCAM Relocation Project

RAF Cranwell

Site Data Pack

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CONTENTS

1.0 Introduction
2.0 Location and Access
3.0 Site Details and Ownership
4.0 Proposed RAF Cranwell Developments
5.0 Current Station Contracts
6.0 Security (Airfield)
7.0 Host Airfield Activities / Interfaces
8.0 Fire Fighting Cover and Design Guidance
9.0 Utilities
10.0 Environmental and Health and Safety Statements & Reports
11.0 Photographs
12.0 References
Annex A: Abbreviations and Acronyms
Enclosure 1: Location Plans
Enclosure 2: Station Plan and Asset Register
Enclosure 3: RAF Cranwell – Airfield Restrictions Plan
Enclosure 4: Site Access
Enclosure 5: Site Constraints
Enclosure 6: Defence Infrastructure Fire Standards
Enclosure 7: Site Services Plans
Enclosure 8: Project Aquatrine Specifications and Standards
Enclosure 9: Ground Penetrating Radar and Topographical Survey
Enclosure 10: Environmental and Health and Safety Statements

1.0 INTRODUCTION

1.1 General:

1.1.1 This Site Data Pack provides background information for the assistance of Tenderers in respect of the proposed RAF Centre of Aviation Medicine (RAF CAM) development to be located at RAF Cranwell in Lincolnshire.

1.1.2 The information contained within this document is provided purely for the assistance of the Tenderers in compiling their tender or offer. Tenderers are deemed to have satisfied themselves as to the sufficiency, accuracy and completeness of the information provided in this document, describing existing facilities and constraints at RAF Cranwell, and to have allowed in their tender or offer for all possible consequential matters relating to the existing condition of the facilities and site.

1.1.3 This Site Data Pack for RAF Cranwell provides guidance and instruction to Tenderers for the RAF CAM development contract.

1.2 Project Background:

1.2.1 RAF Henlow in Bedfordshire has been identified for closure by the UK Government and consequently it is planned to relocate the RAF Centre of Aviation and Medicine (RAF CAM) from RAF Henlow to a new build facility at RAF Cranwell in Lincolnshire. The RAF has selected a site to the east of Trenchard Hall at RAF Cranwell as the preferred location for this development. See Enclosure 1 for site location details.

1.3 Station Background:

1.3.1 Military aviation was established at Cranwell in April 1916 when the Admiralty established a training establishment on the site for The Royal Navy Air Service. With the establishment of the RAF in 1918 the site became RAF Cranwell.

1.3.2 Over the years Cranwell has developed into the main training establishment, Royal Air Force College, for RAF Officers putting it on a par with Sandhurst (Army) and Dartmouth (Navy).

1.3.3 Until 1959 all flying training was undertaken at Cranwell but with improvements to the academic syllabus in 1959 only basic training continued at Cranwell with advanced training being undertaken at RAF Oakington or RAF Valley.

1.3.4 Famous alumni include T E Lawrence and Frank Whittle. The first flight of the Gloster E.28/39 jet powered aircraft took place at the Station in May 1941.

1.3.5 Further information on the Station and its history can be found on the RAF Cranwell website.

1.4 Current Role:

1.4.1 Today the current functions based at RAF Cranwell are:

- a) RAF Officer Training Academy (RAFOTA)
- b) 45 Squadron
- c) LVII Squadron
- d) No. 3 Flying Training School
- e) No. 6 Flying Training School
- f) 703 Naval Air Squadron
- g) 674 Squadron Army Air Corps

- h) East Midlands Universities Air Squadron
- i) Central Flying School including Smith-Barry academy
- j) Recruiting and selection
- k) Tedder Academy of Leadership
- l) HQ Air Cadets
- m) RAF Disclosures
- n) Band of the RAF College
- o) Royal Auxiliary Air Force Band
- p) Air and Space Warfare School
- q) RAFCAM – High G Training and Test Facility
- r) Robson Academy of Resilience
- s) Military Flying Training System
- t) Homes for Sport
- u) Strategic Support Programme
- v) Defence Logistics School

1.4.2 The following training aircraft operate from RAF Cranwell:

- Phenom T1
- Perfect T1

1.4.3 RAF Cranwell parents RAF Barkston Heath. This is a relief landing ground to RAF Cranwell located four minutes flying time to the south. It is used for the training of pilots from the three services.

1.5 Further Information:

1.5.1 Further background information on RAF Cranwell may be viewed at the following web site:

- <https://www.raf.mod.uk/our-organisation/stations/raf-college-cranwell/>

1.5 Proposed Development Site(s):

1.5.1 The chosen site for the RAF CAM development is to the east of Trenchard Hall on the main technical site. Site Location plans for the site are lodged at Enclosure 1. An aerial view of the site is lodged at the end of this section.

1.6 Contact details:

1.6.1 All enquiries regarding this document are to be directed through:

FOI Section 40(2) – Personal information

Flight Simulation and Synthetic Trainers DT

Defence Equipment and Support

Walnut 2b #1027

MOD Abbey Wood

FOI Section 40(2) – Personal information

Bristol BS34 8JH

**FOI Section 40(2) – Personal
information**

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2.0 LOCATION AND ACCESS

2.1 Location:

2.1.1 RAF Cranwell is situated in Lincolnshire to the north-west of Sleaford and immediately adjacent and to the north of the A17 Newark to Boston road. See Enclosure 1. The city of Lincoln is 14 miles to the north.

2.1.2 The postal code for locating the site on route-finder or mapping/navigation systems is NG34 8HB.

2.2 Access:

2.2.1 Access to RAF Cranwell is from the B1429 which is accessed from either the A17 or A15 by following the signs for RAF Cranwell.

2.2.2 Access to the RAF Cranwell for visitors and non-pass holders is via the 24-hour manned Main Gate and Guardroom accessed from the B1429. A passport or other photographic identification is required to be presented to the Guardroom in order to access the site.

2.2.3 In order to maintain good relations with the local community, access to the Station by the Contractor should be by main roads and the routes specifically signposted, avoiding wherever possible nearby villages and unclassified roads.

2.2.3 A transport assessment study on the impact of the proposed RAF CAM development at RAF Cranwell was undertaken in 2020. Details of this study are at Section 11.0, Reference 04 of this report.

3.0 SITE DETAILS AND OWNERSHIP

3.1 Ownership:

3.1.1 RAF Cranwell is owned by the MOD and the estate is managed by the Station in conjunction with DIO.

3.1.3 The Defence Estates (DIO) Land Management Surveyor with responsibility for providing advice to RAF Cranwell is based at the DIO Wyton office (The DIO LMS poc is - **FOI Section 40(2) – Personal information** Initial contact must be via the FsAST Project Office, which includes a DIO focal point.

3.1.4 The DIO Land Management Surveyor must be consulted on all matters pertaining to any proposed development of facilities on the site. Direct consultation with the Local Planning Authorities is not permitted; see 3.5 below.

3.2 Station Plan and Asset Register:

3.2.1 A detailed site plan of the Station is lodged at Enclosure 2 of this document and shows the layout of and all the main assets on the Station. All assets are identified by a unique number. The Asset Register identifying the function of each of these facilities is also at Enclosure 2.

3.3 Station Restrictions:

3.3.1 The following potential hazards and restrictions to development have been identified within the RAF Cranwell estate.

3.3.2 Constraints due to Airfield Aids: The airfield has a number of navigational aids and communication systems that could be adversely affected by development on the Station. These systems include:

- a) Ground Radio
- b) Watchman Radar
- c) Secondary Surveillance Radar (SSR)
- d) Precision Approach Radar (PAR)
- e) UHF/VHF Receivers
- f) Instrument Landing Systems (ILS)
- g) Tactical Air Navigation System (TACAN)
- h) High Resolution Direction Finder (HRDF)
- i) Distance Measuring Equipment (DME)
- j) Non-Directional Beacon (NDB)
- k) Airfield Identification Beacon (AIB)

3.3.3 The RAF Cranwell Airfield Restrictions Map is at Enclosure 3. For development constraints associated with the airfield restrictions map refer to JSP 846 (formerly AP 100G-03).

3.3.4 Explosive Hazards: No explosives hazard in the vicinity of the proposed RAF CAM development site have been identified. However, the risk of unexploded ordnance (UXO) being present on the RAF Cranwell estate is considered to be low to medium. For further details see References 1, 2 and 6.

3.3.5 Runway and Taxiway Restrictions: The following restrictions have been determined regarding development in the proximity of active runways and taxiways for a Code 3 airfield.

- a) Clearance from runway centreline to a building of height H is $150\text{m} + H/14.3\%$. Thus, the clearance to a 10m high building is $150 + 10/0.143 = 220\text{m}$.
- b) Clearance from the edge of an ASP to a building is 15m.

3.3.6 In addition to the above restrictions military aerodrome design and safeguarding is set out in the Military Aviation Authority (MAA) manuals which are a supplement to the Regulatory Articles RAs). RA 3500-3599 are appropriate to aerodrome design and safeguarding. For further details see the following web site:

• [Manual of aerodrome design and safeguarding \(MADS\) - GOV.UK \(www.gov.uk\)](http://www.gov.uk)

3.3.7 Station Standing Orders: All persons visiting, working or based at RAF Cranwell are required to comply with all Station Standing Orders.

3.3.8 Site Access and FOD: Access to the RAF CAM development site is via the main Station entrance, on the B1429, and the Station internal road system comprising Central Dive and Nursery Road; see plan lodged at Enclosure 4. The following restrictions apply:

- a) A valid Station pass, obtainable from the main Guard Room, is required to access the station.
- b) Foreign Object Damage (FOD) will be a major consideration due to the proximity of the site to the airfield. FOD precautions will need to be agreed with the Station but as a minimum the following will be required:
 - FOD fence/hoarding to perimeter of site
 - Covered skips
 - Wheel washers on exit from site
 - Regular sweeping of access route to site
- c) During construction phase car parking to be controlled and limited to designated areas clear of the airfield and adjacent to site compound and on hardstanding to minimise FOD. No parking on or adjacent to airfield areas will be permitted.
- d) Full provision of car parking for the completed RAF CAM development to be provided as part of the new build complex. Permanent car parking to be at least 25m from inhabited buildings and facilities.
- e) No access to the site during the construction or operational phases will be permitted via the airfield and adjacent taxiways.

3.3.9 Site Constraints Plan: A plan showing an indicative site layout annotated with the main development constraints is lodged at Enclosure 5.

3.3.10 The following initial Counter Terrorism Measures (CTM) have been identified regarding the siting of the RAF CAM facility:

- a) Facility to be at least 50m from the perimeter fence.
- b) Facility to be at least 25m from internal areas where vehicles can park.
- c) Facility to be at least 25m from internal roads where vehicles can park.
- d) Vehicular access to service yards to be controlled by barriers, or similar, to prevent unauthorised vehicular access within 25m of the facility.
- e) Consideration to be given to ditches or banks to prevent vehicles approaching closer than 25m to the building across surrounding landscaped area.

3.4 Estate Development Plan:

3.4.1 The latest Estate Development Plan for RAF Cranwell [Ref 6] was completed in 2021 and does not identify any proposed developments in the vicinity of the RAF CAM development site until the demolition of Trenchard Hall expected at the end of the decade.

3.5 Planning Permission:

3.5.1 The LPA has determined that the building can proceed as permitted development under Part 19, Class E of the GPDO.

3.6 Siting Board:

3.6.1 A Station Siting Board was completed on 10 June 2021, led by OC BSS. This Site Data Pack captures the constraints placed on the RAF CAM Relocation development. The key constraints taken from the siting board minutes are summarised below:

- a) Height: To comply with aerodrome design and safeguarding requirements a constraint to the building height of 10m is to be adhered to by the Project Team.
- b) Construction: The Contractor shall be working under the Considerate Contractors Scheme and shall be bound by Station Standing Orders regarding FOD.
- c) Fire Hydrants: CRN suffers from low water pressure and low water volume, therefore mitigation measures must be facilitated within the scope of the project to ensure CAM assets are adequately protected.

3.7 Usage of Adjacent Areas:

3.7.1 Trenchard Hall, an MOD office complex, is located immediately to the west of the RAF CAM development site. To the north the Station boundary and the B1429 public road which bisects the RAF Cranwell estate. To the east and south the site is bordered by the main operational airfield. The Air Traffic Control Tower is located immediately to the south east of the development site.

3.8 Safeguarding:

3.8.1 In order to protect the interests of the MOD the development of areas in the vicinity of MOD establishments may be restricted or 'safeguarded'. Areas where development is restricted are indicated on Safeguarding Maps lodged with the local planning authority by the Secretary of State for Defence.

3.8.2 Planning authorities are required to consult 'Officially Safeguarded' sites in accordance with ODPM/DfT/NAFW Circular 1/2003 in respect to any development proposed within the safeguarded areas. Defence Estates represent the Secretary of State for Defence with regard to the safeguarding of military sites and further information is available from:

Ministry of Defence (Safeguarding)
Defence Estates
Kingston Road
Sutton Coldfield
B75 7RL
Tel: 0121 311 3847

3.9 Medical Facilities:

3.9.1 The Station Medical Centre (SMC) provides medical support to the Station including Primary Health care to Station personnel, Aviation Medicine Training for Aircrew, Occupational Medicine advice and medicals, and emergency cover (when not flying) to

anyone working at or visiting RAF Cranwell. Outside normal working hours the NHS provides cover.

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4.0 PROPOSED RAF CRANWELL DEVELOPMENTS

4.1 Station Developments:

4.1.1 The only development identified at this stage (November 2021) in the immediate vicinity of the proposed RAF CAM development site is the plan to demolish Trenchard Hall. More details can be found in the EDP plan [Ref 6].

4.1.2 A number of developments are planned for RAF Cranwell in the future including Project Portal. It is understood that these developments will not impinge of the RAF CAM development site.

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5.0 CURRENT STATION CONTRACTS

5.1 General

5.1.1 The following Station contractual arrangements support facilities and infrastructure:

a) Maintenance of Facilities: Currently provided by Amey under the Next Generation Estate Contract (NGEC) until Feb 2022. This will be replaced by FDIS (Future Defence Infrastructure Services).

Water and sewerage, to the external boundary/wall of a facility, is provided by the appointed Project Aquatrine contractor which is Severn Trent Services. For more details on Project Aquatrine see the DIO website.

b) Maintenance of Airfield, Aprons and Airfield Lighting: Currently provided Amey under the Next Generation Estate Contract (NGEC).

c) Navigational Aids including Ground Radio: Equipment maintained by Aquilla. Any supporting structures or enclosures are maintained by NGEC until Feb 2022. This will be replaced by FDIS or Project Marshall.

d) Cleaning Contract: Provided by the HESTIA Programme.

e) Catering: Provided by the HESTIA Programme.

f) Disposal of Waste Oils and Lubricants: Provided by the HADES Project.

g) Grounds Maintenance: Provided by NGEC.

h) Living Accommodation: Provided by DIO.

i) Business Rates: Paid for Station as a whole by MOD. Third parties leasing facilities from the MOD pay rates in accordance with their individual lease/contractual arrangements.

j) General Waste: General waste disposal is under the HESTIA Programme.

6.0 SECURITY (AIRFIELD)

6.1 Airfield:

6.1.1 There is not a secure boundary fence to the full perimeter of the RAF Cranwell estate including airfield areas. The RAF Police supported by the Military Provost Guard Service (MPGS) provide regular vehicular, dog and foot patrols of the establishment.

6.1.2 Vehicular access to the RAF Cranwell technical site and south airfield is via the Main Gate. The Main Gate is manned 24 hours per day.

6.1.3 A Station perimeter fence is present to the north of the RAF CAM development site along the boundary with the B1429 public road that bisects RAF Cranwell.

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7.0 HOST AIRFIELD ACTIVITIES/INTERFACES

7.1 General:

7.1.1 For details of units, activities and lodger units based at RAF Cranwell see the Station website at <https://www.raf.mod.uk/our-organisation/stations/raf-college-cranwell/> for the current situation. Outline details are provided in Section 1 of this document.

7.2 Other Events/Activities:

7.2.1 RAF Cranwell has two flying clubs and a powered gliding club that use the south airfield in evenings and weekends.

7.2.2 The British Model Flying Association use the airfield and hold an annual 'Free Flight Event' on the South airfield area that attracts several hundred participants.

7.2.3 There are no other events that currently impinge on the proposed site area.

8.0 FIRE FIGHTING COVER AND DESIGN GUIDANCE

8.1 Airfield

8.1.1 The Capita Fire Service (CFS) provides firefighting cover to the airfield at RAF Cranwell when the airfield is operational. Two major fire tenders provide this cover.

8.2 Technical and Domestic Sites

8.2.1 The primary fire service for the technical and domestic sites is provided by the Local Authority fire service who should be contacted in the first instance together with the Station fire service. The CFS will provide 24-hour cover to the technical and domestic sites if available but airfield and operational duties and incidents take precedence.

8.3 Technical Specification

8.4 Guidance for meeting the requirements of DFSR (Defence Fire Safety Regulator) and DFRMO (Defence Fire Risk Management Organisation) for the project is given in the following documents lodged at Enclosure 6:

- Defence Fire Safety Regulator's New Works Consultation Process – DSA dated 30th November 2017.
- Defence Infrastructure Fire Standards, Relating to Asset and Property Protection – DFRMO dated 2017.

9.0 UTILITIES

9.1 General:

9.1.1 The following sections briefly describe the current (January 2021) understanding regarding the overall availability of the following services in the vicinity of the RAF CAM development site at RAF Cranwell:

- Electrical Power
- Gas
- CIS (Communication and Information Systems)
- Water Supply
- Foul Water Drainage
- Storm Water Drainage

9.1.2 An extract from the site services plan is lodged at Enclosure 7 and shows the known services in the vicinity of the RAF CAM development site. It should be noted that the location of the services on this plan is indicative and there may be other service present, both live and abandoned, that the Station have no record of.

9.1.3 A copy of the combined Ground Penetrating Radar and Topographical Survey undertaken in March 2020 by Warner Surveys is at Enclosure 7. The underground services identified on this survey, which correlate with the site services plan, have been annotated using the same reference. The survey identifies a number of potential underground services not identified on the site services plan. Some of these services are considered to be from the previous development of the site. The Status of these services has not been determined at this stage and may include live as well as redundant/disconnected services.

9.1.4 . Early maps show the presence of a railway line to the north and north-east of the site. Mapping dated 1947 indicates rows of military accommodation had been constructed. A number of underground air raid shelters were also constructed. This development is understood to have been established in WW2 on and in the vicinity of the site. By 1958, the site has been largely cleared of buildings and a Bulk Fuel Installation (BFI) had been constructed just beyond the eastern boundary. The site has since been landscaped and the current trees planted. The only visible evidence of this development today are the air raid shelter entrances to the south of the site identified as assets S120 to S122 and S134 to S137 on the site services plan at Enclosure 7.

9.2 Electrical Power:

9.2.1 High Voltage Systems (HV): A HV ring main dog legs across the southeast of the site. The location of this main is clearly shown on the services pan lodged at Enclosure 7. This main forms part of the southern airfield ring. Substation DSS 'T' is located immediately to the east of the RAF CAM site area and is linked to this ring main by a loop that that runs north to south and to the east of South Airfield Road, see Enclosure 7.

9.2.2 Substation DSS 'T' is rated at 200kVA and currently supplies the Air Traffic Control Tower complex (Buildings 309 to 311), the foul pumping station, and street lighting to the west and north of the RAF CAM site on Trenchard Drive.

9.2.3 To the north of the site between Trenchard Drive and the Station boundary a number of HV mains are identified on the site services plans. These are a combination of the incoming Station supplies from Western Power and a ring main serving the domestic accommodation to the north of Cranwell Avenue (B1429).

9.2.4 The Station external power supply has recently (2020/2021) been upgraded from 3.2MVA to 5.5MVA of which 4.2MVA supports the current Station power requirements. At the time of updating this report (January 2022) the resultant spare capacity of 1.3MVA is available to support the proposed RAF CAM development or any other site development.

9.2.5 The nearest substation, although not necessarily the most appropriate, to the RAF CAM development is DSS 'T' immediately to the east of the proposed development, see Enclosure 7. Currently this is a 200kVA transformer and primarily serves the Air Traffic Control Tower. Following discussions with the Station it is proposed that the RAF CAM project will replace this transformer with a 1.0MVA unit to serve both RAF CAM and ATC. Thus, RAF CAM will connect to the upgraded DSS 'T' substation located immediately to the east of the development area.

9.2.5 In order to upgrade DSS 'T' the current Station Power Grading Study will require to be rerun to include the upgraded DSS 'T' substation.

9.2.6 Replacement of DSS 'T' will need to be carefully managed to limit outages and disruption to air traffic control.

9.2.7 Medium Voltage Systems (MV): An MV supply from DSS 'T' crosses the site from east to west to supply street lighting to the western and northern boundaries of the RAF CAM site on Trenchard Drive. The cabling to the streetlights runs within the RAF CAM site in the verge to Trenchard Drive.

9.2.8 The cross-site cable has been picked up on the site services plans at Enclosure 7 that supplies the street lighting to the perimeter of the RAF CAM development area.

9.2.9 A foul water pumping station is located centrally within the southern section of the RAF CAM site and has a power supply. This supply has not been identified on the site services plan at Enclosure 7.

9.2.10 All MV supplies will require to be diverted around the RAF CAM development as part of the enabling works for the project.

9.3 Gas:

9.3.1 There are no gas mains on or in the immediate vicinity of the RAF CAM development site. The nearest distribution mains are the gas mains that run along, and immediately to the south, of Cranwell Avenue. These gas mains are shown on the site services plans at Enclosure 7. These mains are managed by the District Network Operator (DNO) Cadent Gas.

9.3.2 RAF Cranwell has an uninterruptible gas supply. The supply to RAF Cranwell is reported to have spare capacity.

9.3.3 It is proposed that the RAF CAM development is connected to the gas main in Cranwell Avenue immediately to the north of the RAF CAM development area, see Enclosure 7. This will require a connection to be made to the gas main and a governor/meter installed as it is a direct connection to the DNO managed distribution system.

9.3.4 A formal application will be required to the DNO Cadent Gas for this connection.

9.4 CIS (Communication and Information Systems):

9.4.1 Existing CIS Infrastructure: A CIS duct system enters the RAF CAM site at the northwest corner and dog legs down the site to exit on the southern boundary where it runs in a south-easterly direction towards the ATC tower. The route appears to follow the former road network of the previous development on the site. Site works in 2020 established that this duct contains key operational cables to the Air Traffic Control Tower (ATC). See Enclosure 7.

9.4.2 This pit and duct system will require to be diverted around the RAF CAM development area and the operational cables within it diverted by the Station C4i Squadron.

The cable diversion works will require to be coordinated with the Station in order to manage any outages/loss of connectivity to ATC.

9.4.3 At the southwest corner of the RAF CAM site a pit and duct system encroaches into the site, see Enclosure 7. This system runs from the southeast corner of Trenchard Hall to a duct system on the airfield to the south. The C4i Squadron have confirmed that this is an active CIS system.

9.4.4 The Station CIS equipment rooms for MODNet and BT systems are located within Trenchard Hall immediately to the west of the RAF CAM development site. The hub for secret telephones is located elsewhere on the Station.

9.4.5 Proposed CIS Connections: The following potential points for connection of the RAF CAM development to the Station CIS infrastructure have been identified.

9.4.5.1 MODNet: The existing MoD pit and duct system that encroaches onto the RAF CAM site adjacent to the southeast corner of Trenchard Hall. A new pit and duct system will be required from the RAF CAM Building Entry Point (BEP) to connect with the existing MoD pit located within the RAF CAM site and opposite Trenchard Hall. See Enclosure 7 for location.

9.4.5.2 Telephones and External Broadband: The existing telephone system and external internet/broadband connectivity is managed by BT. Generally, BT prefer to use a separate pit and duct system within the Station that they own. Although, with the agreement of the Authority they can duct share with MOD systems.

9.4.5.3 No BT duct systems have been identified within the vicinity of the RAF CAM development site at this stage. Connectivity for telephones and external internet/Broadband will be either be via the MoD duct system detailed above for MODNet or by a new BT pit and duct system connecting the RAF CAM facility to the BT equipment room within Trenchard Hall.

9.4.5.4 Secret phones will be connected via a new cross site fibre optic link to the secret hub. This will utilise existing secure pit and duct routes and share the MODNet link for the final connectivity to the RAF CAM facility.

9.4.5.5 VTC Systems: The external connectivity for the proposed video conference systems (VTC) within the RAF CAM development will utilise, as appropriate, the MODNet and BT connectivity detailed above.

9.5 Water Supply:

9.5.1 Under Project Aquatrine water and drainage services external to buildings are managed by Severn Trent Services (STS). STS specifications and requirements are lodged at Enclosure 8.

9.5.2 Existing Water Services: The following combined domestic and firefighting water mains have been identified on the site:

- a) A 100mm diameter main runs east-west across the northern section of the site and serves fire hydrants FH147 and FH 148. Severn Trent Services (STS) have advised that this main has been disconnected/capped at its western end. This is marked as point 1 at Enclosure 7.
- b) A 75mm diameter main crosses the southern section of the site in an east west direction and serves the ATC Tower including FH149. This main is shown Enclosure 7. This supply may require to be diverted as part of the enabling works for the RAF CAM project due to its proximity to the development footprint.
- c) A further 75mm diameter main runs north-south down the western edge of the site and connects the two mains noted above and serves fire hydrant FH143. The northern end of this main is fed from the west by a 150mm diameter supply which

includes fire hydrant FH142. The southern end is also fed from the west but the size of this main has not been determined. STS have confirmed that it is currently planned to cap the north-south main immediately to the north of fire hydrant FH 142, see point 2 Enclosure 7, so that FH 143 is fed from the south only.

d) STS have confirmed that as of 2019 the following flow rates have been recorded at the fire hydrants:

- FH142: 20.5l/s Located to northwest of RAF CAM site
- FH143: 3.6l/s Located centrally on western edge of RAF CAM site
- FH147: Disconnected Located on northern edge of RAF CAM site
- FH 148: Disconnected Located on northeast edge of RAF CAM site
- FH 149: 2.5l/s Located to southeast of RAF CAM site at ATC

9.5.3 It should be noted that the water main diameters quoted are based on record information and will need to be verified.

9.5.4 Proposed Water Connection: The 150mm water main adjacent to FH142 (see Enclosure 7) has been identified as the potential supply point to the RAF CAM development and associated fire hydrants. To meet Defence Infrastructure Fire Standards a booster set is proposed adjacent to Fire Hydrant 142, to provide sufficient flow when the demand from the building or fire hydrants demand it.

9.5.5 All installations are to comply with the Severn Trent Services specifications under their Project Aquatrine contract. Firefighting water supplies and number and location of hydrants to be agreed with the Defence Fire Safety Regulator through the DIO Building Regulations consultation process. STS specifications are lodged at Enclosure 8.

9.6 Foul Water Drainage:

9.6.1 Existing Foul Water Drainage: A gravity foul water drain from the ATC Tower enters the RAF CAM site at the southeast corner and discharges into a below ground pumping station located centrally within the southern half of the site. A pumping main then runs in a north westerly direction to discharge into a gravity system immediately to the east of Trenchard Hall. This system then runs in a north easterly direction to the Anglian Water sewage treatment works to the north of Cranwell Avenue (B1429). In doing so it crosses the northeast corner of the RAF CAM site under the existing Trenchard Hall car park. The foul water system is shown on the site services plans lodged at Enclosure 7.

9.6.2 Under Project Aquatrine the foul water system is managed by Severn Trent Services and the pumping Station is designated as an Aquatrine asset. As noted in the MV section above the route of the power supply to the pumping station has not been identified.

9.6.3 RAF Cranwell is located on a major aquifer.

9.6.4 Proposed Foul Water Drainage Connection: The existing foul water sewer, pumping station and pumping main that cross the site are within the RAF CAM development footprint and will need to be diverted around the RAF CAM development. The gravity sewer beneath the Trenchard Hall car park is outside the envisaged RAF CAM development footprint and may not require to be diverted.

9.6.5 It is proposed that foul water drainage from the RAF CAM development will discharge into the new foul pumping station. Consultation with Severn Trent Services confirmed this approach and indicated that there is currently (January 2021) sufficient capacity within the Station sewer network for the additional foul flows.

9.6.6 All foul water systems are to be designed to adoptable standards in accordance with Severn Trent Services specifications and standards. See Enclosure 8.

9.7 Storm Water Drainage:

9.7.1 Existing Storm Water Drainage: Surface water from existing built-up areas on the Station is drained to ground via soakaways.

9.7.2 On the RAF CAM development site surface water drainage is evident within the Trenchard Hall car park and to the perimeter roads by the presence of road gullies. The site services plan at Enclosure 7 indicates a local piped storm water system to the northeast corner of Trenchard Hall which encroaches onto the RAF CAM site. There is no indication of any soakaways being present on the site.

9.7.3 Proposed Storm Drainage: A local piped drainage system specific to the RAF CAM development site is proposed that discharges to ground via new soakaways. All soakaways are to comply with STS specifications and standards.

9.7.4 All storm water systems are to be designed to adoptable standards in accordance with Severn Trent Services specifications and standards. See Enclosure 8.

9.8 Unidentified Services:

9.8.1 In addition to the services noted above the GPR survey, at Enclosure 7 and 9, recorded a number of unidentified linear features that appear to be underground services. These are considered to be redundant services that supported the previous development of the site. It is feasible that some of these services/utilities may still be connected, and the works contractor will need to verify the status of these services as part of the site clearance and preparation works. Any cables will need to be checked by the Station electrical Approved Person (AP) before removal to ensure that they are not live. If they are live, then they will need to be terminated at source or if still required diverted.

9.9 Metering:

9.9.1 It is Station and DIO policy that any new or refurbished facilities are to be provided with individual metering to enable the Station Energy Manager to accurately monitor consumption.

10.0 ENVIRONMENTAL AND HEALTH AND SAFETY STATEMENTS & REPORTS

10.1 Introduction:

10.1.1 The following environmental and health and safety related information has been gathered in respect to RAF Cranwell.

- a) Organisation and Arrangements (O&A) for Safety Health Environmental Protection and Sustainable Development (SHEP&SD)
- b) SHEP&SD Induction and Information for all visiting workers in acc/w JSP 375, Vol 2, Leaflet 34.
- c) RAF Cranwell Guidance for Visitors leaflet
- d) RAF Cranwell Waste Disposal Policy

Copies of the above documents are lodged at Enclosure 10.

10.1.2 Environmental and Health and Safety at RAF Cranwell is managed by the Total Safety Section.

10.2 Asbestos:

10.2.1 The Control of Asbestos at Work Regulations 2002 set out a duty under Regulation 4 for the management of asbestos in non-domestic premises. This legislation places a duty on the persons responsible for the repair and maintenance of premises to:

- a) Identify if asbestos is present and if found determine its condition.
- b) Assess the risk of asbestos fibre release.
- c) Make a plan to manage the risk of fibre release.

10.2.2 In accordance with this legislation Type 2 surveys have been undertaken and Asbestos Management Plans prepared for the management of identified asbestos within the RAF Cranwell estate.

10.2.4 The asbestos register for the Station can be viewed on written request through the Project Office - Contact details at Section 1.6.

10.2.5 The proposed RAF CAM development site does not contain any above ground facilities and thus there is no risk of asbestos being present within existing buildings. However, previous facilities or activities on the site, including utilities, may have contained asbestos which has migrated into the ground. See the Supplementary Phase II Ground Investigation at Reference 02 for further details.

10.3 Pollution and Contamination:

10.3.1 RAF Cranwell is located over a Major Aquifer. Any building work and subsequent activities must be designed so that no pollution enters the aquifer and contaminates water systems.

10.3.2 For details of site investigations and details of any pollution or contamination found consult References 01, 02 and 06.

10.3.3 The works contractor will be required to demonstrate that appropriate measures are in place to prevent pollution and contamination including but not limited to the following:

- a) Safe storage of fuel
- b) Spill prevention procedures
- c) Spill remediation measures

d) Safe vehicle parking

10.4 Land Quality Assessment (LQA):

10.4.1 A Phase 1 non-intrusive LQA has been undertaken by Wood Environment and Infrastructure Solutions UK Limited in 2020. Based on the findings of this report a Supplementary Phase II Ground Investigation was undertaken in August 2020. These reports are at References 01 and 02.

10.4.2 Copies of these references will be made available under separate cover following application in writing to the Project Office - Contact details at Section 1.6.

10.5 Ecology and Environmental Reports:

10.5.1 A preliminary ecological survey was undertaken in April 2020. This report is at Reference 3 and will be made available under separate cover following application in writing to the Project Office - Contact details at Section 1.6.

10.6 Geotechnical Information:

10.6.1 A geo-environmental and geotechnical interpretive report was published in December 2018 at Reference 06. Further investigations were undertaken in 2020 as part of the LQA Phase 1 study (Reference 01) and the Phase II Supplementary Ground Investigation (Reference 02).

10.7 Surveys:

10.7 In addition to the reports referenced in Section 11.0 a Ground Penetrating Radar (GPR) Survey and Topographical Survey of the proposed RAF CAM development area were undertaken in March 2020. The results of these surveys are lodged at Enclosure 9.

11.0 PHOTOGRAPHS

11.1 Photographs of the RAF CAM development site are included in the GPR Report lodged at Enclosure 9.

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12.0 REFERENCES

12.1 The following documents are referenced in this Site Data Pack. Copies of these references will be made available under separate cover following application in writing to the Project Office - Contact details at Section 1.6.

12.2 Wood Environmental & Environmental Solutions UK:

Ref 01: RAF Cranwell "Site 07" Land to the East of Trenchard Hall
Phase 1 Land Quality Assessment
May 2020

Ref 02: RAF Cranwell "Site 07" Land to the East of Trenchard Hall
Supplementary Phase II Ground Investigation
November 2020

Ref 03: RAF CAM Relocation to RAF Cranwell
Preliminary Ecological Survey
April 2020

Ref 04: RAF CAM Relocation to RAF Cranwell
Transport Assessment
November 2020

Ref 05: RAF CAM Relocation to RAF Cranwell
Utilities Survey and Review
July 2020

Ref 06: RAF Cranwell and RAF Barkston Heath Development Study
Executive Summary
July 2021

12.3 Card Geotechnics Limited:

Ref 07: RAF Cranwell, Lincolnshire
Geo-environmental and Geotechnical Interpretative Report
Revision 2, December 2018

ANNEX A:**ABBREVIATIONS AND ACRONYMS**

The following abbreviations and acronyms have been used in this document:

AIB	Airfield Identification Beacon
ASP	Aircraft Servicing Pan
ATC	Air Traffic Control
CFS	Capita Fire Service
DIO	Defence Infrastructure Organisation
DME	Distance Measuring Equipment
DRDF	Digital Resolution Direction Finding
ESA	Explosive Storage Area
FOD	Foreign Object Damage
GI	Ground Investigation
GPR	Ground Penetrating Radar
HRDF	High Resolution Direction Finder
ILS	Instrument Landing System
JSP	Joint Services Publication
LMS	Land Management Surveyor
LPA	Local Planning Authority
LQA	Land Quality Assessment
MAC	Multi Activity Contract
MPGS	Military Provost Guard Service
NGEC	Next Generation Estates Contract
ODPM	Office of the Deputy Prime Minister
PAR	Replacement Precision Approach Radar
PD	Permitted Development
POL	Petrol, Oil, Lubricants
RAF	Royal Air Force
RPC	Regional Prime Contract
SER	Site Estate Representative
STS	Severn Trent Services
TACAN	Tactical Air Navigation Aid
VTC	Video Teleconferencing

ENCLOSURE 1:

- **RAF CRANWELL – SITE LOCATION PLAN**
- **RAF CRANWELL – EXISTING SITE LAYOUT**

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ENCLOSURE 2:

- **RAF CRANWELL – STATION PLAN**
- **RAF CRANWELL - ASSET REGISTER**

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ENCLOSURE 3:

• RAF CRANWELL – AIRFIELD RESTRICTIONS PLAN

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ENCLOSURE 4:

• RAF CRANWELL – SITE ACCESS PLAN

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ENCLOSURE 5:

• RAF CAM SITE CONSTRAINTS PLAN

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ENCLOSURE 6:

- **DEFENCE FIRE SAFETY REGULATOR'S NEW WORKS CONSULTATION PROCESS - subject to amendment by 2021DIN04-041 issued April 2021 regarding process for the BCRS DIO Form 1.**
- **DEFENCE INFRASTRUCTURE FIRE STANDARDS, RELATING TO ASSET AND PROPERTY PROTECTION**

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ENCLOSURE 7:

- **STATION SERVICES PLAN EXTRACT**
- **SITE SERVICES PLAN (ANNOTATED)**

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ENCLOSURE 8:

• PROJECT AQUATRINE SPECIFICATIONS AND STANDARDS

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ENCLOSURE 9:

- **GROUND PENETRATING RADAR SURVEY REPORT**
- **TOPOGRAPHICAL SURVEY**

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ENCLOSURE 10:

• ENVIRONMENTAL AND HEALTH AND SAFETY STATEMENTS

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