PLANNING COMMITTEE **17th June 2020**

Application Number	19/1763/FUL	**Agenda Item**	
Date Received	20th December 2019	**Officer**	Yole Medeiros
Target Date	20th March 2020		
Ward	Newnham		
Site	Department of Engineering, Whittle Laboratory, 1 J J Thomson Avenue		
Proposal	Full planning permission for extension of the Whittle Laboratory, including new National Centre for Propulsion and Power (4,251 sq metres of Academic (D1) Floorspace), demolition of 1,149 sq metres of D1 floorspace, and all associated Infrastructure including landscaping, drainage, substation and car and cycle parking.		
Applicant	Chancellor, Masters and Scholars University of Cambridge c/o agent		

SUMMARY	The development accords with the Development Plan for the following reasons: 1. The proposal is in accordance with Policy 19 of the Cambridge Local Plan 2018 which supports the proposed use and the densification of the site. 2. The proposed new building is of high-quality design and will successfully integrate in the context of surrounding buildings and the emerging outline masterplan strategy, forming an important 'gateway' with the new Cavendish Laboratory to the wider West Cambridge campus. 3. There will be no significant adverse visual impact from or to neighbouring residential properties, the historic environment, or the views from the

	west along Madingley Road into the City. 4. Noise, lighting, and amenity impacts arising from the development are not significant and can be addressed by imposition of appropriate conditions. 5. The proposal is acceptable in transport terms. A two-way cycleway will be provided on Clerk Maxwell Road, as mitigation to the impacts from development.
RECOMMENDATION	APPROVAL subject to planning conditions.

A.1 BACKGROUND

West Cambridge

A.1 The application site is a 1.32hectare (ha) area in the north-eastern portion of the West Cambridge site, a major new academic campus undertaken by the University of Cambridge. The wider campus covers 66ha situated between Madingley Road to the north and the M11 to the west. The site area is wholly within proposals site M13 of the Cambridge Local Plan adopted in 2018.

A.2 An extant 1999 outline planning permission ('OPP' ref. C/97/0961/OP) relating to the West Cambridge campus has been partially implemented. This related to a scheme of 244,212m^2 floorspace, which includes pre 1999 developments. The principal roads through the site have been implemented along with numerous key buildings including the Civil Engineering building, the Centre for Physics of Medicine, the Maxwell Centre, a new academic research building for Materials Science and Metallurgy and new academic research buildings for the University's Electrical Engineering Division. In addition, the East and West Forums and lake area have been developed, which are the main areas of public realm on the campus.

A.3 An outline planning application ('OPA' ref. 16/1134/OUT) was submitted in June 2016 by the University for a new masterplan

for the West Cambridge site. It seeks permission for up to 383,300m^2 of development comprising academic and commercial/research institute floorspace and other ancillary uses, which remains undetermined. Since submission of the outline in 2016, the Council has approved three new buildings at West Cambridge: the new Cavendish Laboratory (ref. 17/1799/FUL); the Shared Facilities Hub (ref. 17/1896/FUL) and the new Civil Engineering Building (ref. 16/1811/FUL). These developments came forward as separate full planning applications.

1.0 SITE DESCRIPTION/AREA CONTEXT

Whittle Laboratory

1.1 The existing Whittle Laboratory site is located on the eastern side of JJ Thomson Avenue and southern side of Madingley Road and currently is occupied by a research facility for turbomachinery aerodynamics built in 1971, comprising 2,840m^2 of D1 floorspace. The Whittle Laboratory comprises a group of single storey buildings, with the testing halls being double storey heights. The entrance to the site is from the access road which spurs off JJ Thomson Avenue from south of the site, where there is both car and cycle parking as well as utilities infrastructure and servicing entrances. Access to the laboratory comes between the testing halls into the offices to the rear of the site.

1.2 At the northern boundary of the site is a substantial tree belt, approximately 5m deep, of mixed species. Beyond this is Madingley Road, one of the main radial routes linking the M11 with Cambridge City centre. On the northern side of Madingley Road are the closest residential properties including those along Conduit Head Road and forming the Conduit Head Conservation Area (CA), at approximately 150m north-west of the site. At a closer distance (approximately 50m) north-east of the site is the West Cambridge CA, including the University observatories and the Institute of Astronomy.

1.3 Immediately east of the site is University's Park and Cycle facility which leads to Clerk Maxwell Road, with residential properties further east. Across JJ Thompson Avenue west of the site is the recently approved Cavendish Laboratory building which was granted full planning permission in August 2018 for

37,160m^2 of D1 floorspace, currently under construction. Opposite the southern access road is currently a car parking which once development of this area is completed will become the Engineering Square, framed by the Whittle Laboratory, the existing William Gates and the Civil Engineering building.

1.4 The site is not covered by any statutory or non-statutory wildlife site designation and is not in close location to any statutory designated site. It also falls outside the Cambridge City's Air Quality Management Area (AQMA). The central-western portion of the site is mostly at high to medium risk of flooding from surface water. JJ Thompson Avenue is a private road and therefore the site falls outside of the Controlled Parking Zone.

2.0 THE PROPOSAL

2.1 Full planning permission is sought for the demolition of existing 1,063m^2 of D1 floorspace, and the erection of a new extension to accommodate the National Centre for Propulsion and Power (NCPP) laboratory and offices consisting of 4,251m^2 of D1 floorspace, with associated infrastructure. The new extension is proposed to the west of the existing buildings, between these and JJ Thomson Avenue. In total, the proposed Whittle Laboratory will have a total floorspace of 6,014m^2.

2.2 The existing high and low speed laboratories will be retained with continued operation. A new substation will be constructed to the east of the existing buildings, and new cycle parking provision will be added onto the new east elevation where the offices will be demolished.

2.3 The central external area which currently accommodates utilities infrastructure, cycle and car parking will no longer be accessible from the southern access off JJ Thomson Ave and will be reconfigured to be accessed from the rear, via Clerk Maxwell Road, with the relocation of the existing car and cycle parking.

2.4 A net number of eight car parking spaces will be provided on-site, including two accessible parking spaces in an existing area to the north of the William Gates Building. Servicing for medium sized vehicles and larger heavy goods vehicles (HGVs) will be able to access the rear of the new building from Clerk Maxwell

Road. The proposal will include drainage works as well as new landscaping on all sides of the building.

2.5 The extension to the west fronting JJ Thompson Avenue will accommodate the NCPP with a three storeys void and will be the tallest element of the buildings at 35m above Ordnance Datum (AOD). The buildings step down slightly (approximately 0.5m) towards south and further down towards east, to approximately 32m AOD. For later reference, the Cavendish Laboratory will be at approximately 38m AOD once completed.

2.6 The final configuration of the site layout will be a 'U' shape and comprised of the existing high-speed and low speed labs, with the additional NCPP testing hall, workshops and offices with central atrium. The office and atrium area consists of two storeys with maximum depth of 9 metre per floor plate. The ground floor is made up of a central atrium and staircase and public exhibition areas, as well as a library. The tea table, considered to be the 'heart' of the existing Whittle Laboratory where visitors, staff and students congregate, will be brought to this new part of the building and will be located on the first floor, breaking out into the first-floor terrace garden.

Application documents

2.7 The application was accompanied by the following supporting information:

- Planning Statement
- Design and Access Statement
- Energy Strategy
- Flood Risk and Drainage Strategy
- Noise Report
- Arboricultural Impact Assessment
- Woodland Maintenance and Management Plan
- Ecological Assessment
- Statement of Community Engagement
- Lighting Report
- Site Investigation Report
- Servicing and Operational Management Plan
- Transport Assessment

Amended Plans and Additional Information

2.8 The following supplements the original submission:

- Existing and proposed development overland flow routes

- Assessment of road noise propagation
- Anglian Water Pre-Planning Assessment Report
- CGI extracts
- DEFRA/Natural England Biodiversity Metric 2.0 spreadsheet
- GCP Madingley Rd proposal option 1 overlay
- GCP Madingley Rd proposal option 2 overlay
- Revised Woodland Management and Maintenance Plan
- Revised Illustrated Terrace GA
- Revised Trees to be removed and retained
- Revised Site levels GA
- Revised Planting to NW Woodland
- Revised Site wide Topsoil and Seeding Plan
- Revised Site Wide Planting Plan
- Revised Landscape GA - Public Realm
- Revised Illustrated Landscape Plan
- Revised NW Woodland Elevation
- Revised Site Section 01
- Revised Site Section 03

3.0 SITE HISTORY

Reference	Description	Outcome
C/97/0961/OP (OPP)	Outline application for the development of 66.45ha of land for University academic departments (73,000sq.m), research institutes (24,000sq.m), commercial research (41,000sq.m) and associated [infrastructure].	Approved with conditions on 06 Oct 1999
16/1134/OUT (OPA)	Outline planning permission with all matters reserved for up to 383,300m2 of development comprising up to 370,000m2 of academic floorspace (Class D1 space), commercial/research institute floorspace (Class B1b and sui generis research uses), of which not more than 170,000m2 will be commercial floorspace (Class B1b); up to 2,500m2 nursery floorspace (Class D1); up to 1000m2 of retail/food and drink floorspace (Classes A1-A5); up to 4,100m2 and not less than 3,000m2 for assembly and leisure floorspace (Class D2); up to 5,700m2 of sui generis uses, including Energy Centre and Data Centre; associated infrastructure including roads (including	Awaiting decision

	adaptations to highway junctions on Madingley Road), pedestrian, cycle and vehicle routes, parking, drainage, open spaces, landscaping and earthworks; and demolition of existing buildings and breaking up of hardstanding.	

3.1 Further to the specific application site history as above, the table below shows relevant planning history for the immediate context and West Cambridge campus, which will be referenced along this report:

Reference	Description	Outcome
17/1896/FUL	Mixed use building 4907 sq m in total, comprising 3411 sq m of D1 academic floor space on the first and second floors; 1421 sq m of A3 (Café and restaurant) space on the ground floor; 75 sq m of A1 (retail) on the ground floor; all associated infrastructure, including drainage, service yard area, utilities, landscape and cycle parking; modifications to JJ Thomson Avenue to provide disabled car parking and a substation building. [Shared Facilities Hub]	Granted Permission on 4 Jan 2019
17/1799/FUL	Development of 37,160 sqm for D1 academic floor space to accommodate the relocation of the Cavendish Laboratory, namely; all associated infrastructure including drainage, utilities, landscape and cycle parking; strategic open space to the south and west of the new Cavendish; modifications to JJ Thomson Avenue to provide disabled parking and changes to road surface materials; alterations to the existing access to Madingley Road to the north west to enable servicing; and demolition of Merton Hall Farmhouse and removal of existing Vet School access road from JJ Thomson Avenue.	Granted Permission on 17 Aug 2018
16/1811/FUL	Full planning permission for 4,376sqm of D1 (Academic) floorspace, along with external landscape, cycle parking, temporary parking area and associated infrastructure including	Granted Permission on 01 Mar 2017

	new service road connecting to existing entrance from Clerk Maxwell Road. [Civil Engineering building]	
C/99/0042	Erection of three storey building to form Computer Sciences Faculty with associated parking and landscaping. [William Gates Building]	Approved with conditions on 17 Jan 2000

4.0 PUBLICITY

4.1 Advertisement: Yes
Adjoining Owners: Yes
Site Notice Displayed: Yes

5.0 POLICY

5.1 Relevant Cambridge Local Plan 2018 policies

PLAN	POLICY NUMBER
Cambridge Local Plan (October 2018)	Section 2 – Policies 1, 2, 4, 5, 8 Section 3 – Policy 19 Section 4 – Policies 28, 29, 31, 32, 33, 34, 35, 36, 37, 38 Section 5 – Policies 42, 43 Section 7 – Policies 55, 56, 57, 58, 59, 60, 61, 64, 65, 69, 70, 71 Section 9 – Policies 80, 81, 82, 85

5.2 Relevant Central Government Guidance, Supplementary Planning Documents and Material Considerations

Central Government Guidance	National Planning Policy Framework February 2019 National Planning Policy Framework – Planning Practice Guidance from 3 March

	2014 onwards Circular 11/95 (Annex A) Community Infrastructure Levy (CIL) Regulations 2010 (as amended)
Development Plans	The Cambridgeshire and Peterborough Minerals and Waste Plan (2011)
Supplementary Planning Documents	Sustainable Design and Construction SPD (2020) Cambridgeshire Flood and Water SPD (2018) RECAP Waste Management Design Guide (2012)
Material Considerations	Cambridgeshire County Transport Assessment Guidelines (2019) Cambridge City Air Quality Action Plan (2018-2023) Cambridge City Citywide Tree Strategy 2016-2026 (October 2015) Cambridge City West Cambridge Conservation Area Appraisal (2011) Cambridge and South Cambridgeshire Strategic Flood Risk Assessment (November 2010) Planning Obligations Strategy SPD (2010) Public Art SPD (2010) Cambridge City Contaminated Land - Developers Guide (2009) Cambridge City Conduit Head Road Conservation Area Appraisal (2009) Cambridge Suburbs and Approaches:

	Madingley Road (2009) Cambridgeshire Quality Charter for Growth (2008)

6.0 CONSULTATIONS

Developer Contributions Monitoring Unit

6.1 No objection. Do not propose contributions are sought through the application as the Council's Planning Obligation Strategy SPD 2010 does not seek S106 financial contributions from developments such as the proposed.

Highways England

6.2 No objection given the remote location of the site from the strategic road network (SRN), therefore unlikely to be of any severe impact.

Cambridgeshire County Council (Highways Authority – Highways Development Management)

6.3 No objection. As JJ Thompson Avenue is a private road the only modifications to the existing adopted public highway could occur at the junction of JJ Thompson Avenue and Madingley Road. The nature, scale and complexity of any such modifications will be determined by the outcomes of the Transport Assessment.

Cambridgeshire County Council (Highways Authority – Transport Assessment)

<u>Comments on application as submitted</u>

6.4 No objection subject to mitigations to transport impact from development, including the provision of a mandatory two-way cycleway along Clerk Maxwell Road, agreed and secured prior to approval and with design and layout to be discussed with the Highways Development Management team. A Travel Plan is to be secured through by condition and approved by the LPA prior to occupation.

6.5 All other aspects of the Transport Assessment submitted with the application are agreed, including its description, study area, traffic data, trip generation, distribution and assignment, assessment scenarios and traffic growth, and junction modelling.

Comments on application as amended

6.6 Required a condition to any permission requiring that prior to the occupation the developers agreed with the LPA the layout, design and programme of delivery of mandatory cycle lanes on Clerk Maxwell Road and that the design be fully implemented by the developer prior to fifty percent (50%) the proposed buildings being occupied for their intended use.

6.7 On further correspondence with the applicants and the LPA, the Highways Authority (Transport Assessment and Development Management teams) have expressed their preference to have the cycleway along Clerk Maxwell Road implemented by the applicants via S278 agreement (Highways Act 1980) and secured by condition, should permission be granted. Due to the complexity of the process and the difficulties of booking road space, condition should require that within 12 months of the commencement of development the scheme is approved by the LPA and implemented prior to occupation, with flexibility for an alternative timeframe to be agreed in writing with the LPA.

Cambridge International Airport

6.8 No objection. Any intended crane usage should be referred to the Airport for assessment.

Natural England

6.9 No comments as the proposal is unlikely to result in significant impacts on statutory designated nature conservation sites or landscapes.

Environment Agency

6.10 No objection in principle, highlighting the site is not located within a groundwater source protection zone (SPZ). Recommend conditions and informative regarding contaminated

land, sustainable urban drainage, pollution control, foul water drainage and wildlife conservation.

Cambridge City Council Sustainable Drainage Engineer

Comments on application as submitted

6.11 Pre-construction and post-construction modelling of this surface water flooding needs to be submitted to ensure it is fully taken into consideration in the design proposals.

Comments on application as amended

6.12 No objection. Following submission of the required information and further clarification, is satisfied that these clarify as required and are acceptable. Recommends additional information and the existing and proposed flow land routes plans to be appended to the FRA and Drainage strategy report.

Local Lead Flood Authority (LLFA)

Comments on application as submitted

6.13 Objects the application and requests additional information, as the surface water flood risk should be addressed further. Informative regarding green roofs and pollution control are recommended.

6.14 One of the new buildings is in an area of high flood risk, and if its location in lower flood risk areas is not feasible, the finished floor level should be set an appropriate level above the maximum anticipated flood depth.

6.15 The central section of the site is at a high to medium risk of surface water flooding (300-900mm during a Medium Risk scenario), and this needs to be further addressed. The proposed form of discharge of surface water would require a principle agreement prior to discharge at an agreed rate into an existing Anglian Water surface water network.

Comments on application as amended

6.16 No objection, following review of the amended documents and further clarifications through correspondence exchange, the

LLFA concluded that it would be unreasonable to ask for floor levels to be raised any further, on the basis that the modelled surface water flooding against the buildings would only be during events exceeding a 1 in 100 year event plus 40% climate change.

6.17 The LLFA is satisfied that exceedance flows from the proposed attenuation basin will be contained to the north of the proposed building, with flows only being directed south-eastwards and towards buildings when storage in these areas is also exceeded.

6.18 Recommended conditions relating with surface water drainage scheme to be approved by the LPA prior to commencement of ground works and details of the surface water drainage system (including all SuDS features) to be approved by the LPA prior to the first occupation of the building.

Anglian Water

6.19 No objections subject to a condition that no hard-standing areas are to be constructed until the works have been carried out in accordance with the approved surface water strategy. Recommend informatives including regarding the need for notification of intention to connect to the public sewer under S106 of the Water Industry Act Approval, noting consent will be required by Anglian Water, under the Water Industry Act 1991.

Cambridge City Council Sustainability Officer

6.20 No objection. Supports the proposals in sustainable construction terms, highlighting they incorporate sustainable design and construction features in response to planning policy and the Sustainability Assessment Matrix that has been prepared for the West Cambridge site overall.

6.21 Further note the energy strategy, includes the use of air source heat pumps to provide heating and cooling and provision of a photovoltaic panel array of 210m^2, which would cover around 25% of the roof area. This strategy would lead to a 37% reduction in carbon emissions compared to Part L 2013 and achieves 5 credits under Ene01 of BREEAM, which is supported.

6.22 Requests conditions for BREEAM and energy strategy.

Cambridge City Council Arboricultural Officer

Comments on application as submitted

6.23 Objects the proposal and require amendments to the Woodland Management Plan, and confirmation of services to be installed in the Root Protection Area (RPA) within the submitted Arboricultural impact Assessment.

6.24 Disagrees that an Arboricultural Method Statement (AMS) is not required on this site, given the limited space for construction and storage within the site, therefore agreement is necessary in relation to site access, site facilities, site storage and the installation of services within the RPA. Notes it may be necessary to adjust the location of protection barriers and install ground protection to ensure reasonable construction space without damage to retained trees.

6.25 Further notes in relation to the replacement of the T1 to T14 trees are located too close to the southern boundary and appropriate relocation of those trees are necessary to ensure their long-term retention/survival.

6.26 Conditions are requested for an AMS and a Tree Protection Plan (TPP) to be approved by the LPA; for a site meeting to discuss details of the approved AMS; and for the implementation of the AMS and TPP.

Comments on application as amended

6.27 No objections as concerns raised previously have been satisfied with the submission of the amended application. This is subject to the imposition of the suggested conditions.

Cambridge City Council Landscape Officer

Comments on application as submitted

6.28 No objection. Suggestions/comments were made regarding terrace planters, handrails and cycle hoops, flowering hedge, planting densities, planting specification and the need for a

landscape management plan to be submitted. All matters to be addressed by condition.

6.29 Requests conditions regarding terrace planter automatic irrigation, soft landscaping specifications, rain garden detail, implementation of hard and soft landscaping, green (biodiverse) roof detail, planting replacement, landscape maintenance and management plan, and terrace planting irrigation system.

Comments on application as amended

6.30 No further comments noting comments previously made are still relevant and should be covered within the landscape conditions.

Cambridge City Council Biodiversity Officer

Comments on application as submitted

6.31 Requests further information with base line and proposed habitats to be entered into the Defra biodiversity impact metric (V2) to establish whether a measurable net gain will be achieved by the proposal. Recommends a condition for bird and bat box specifications to identify and secure further species-specific enhancement. Support landscape condition for detailed specification for green roofs and programmed works and monitoring to secure the proposed woodland enhancements.

Comments on application as amended

6.32 No objection. Following submission of the biodiversity impact calculations as requested, officers are content with the metric assessment, with the assurances on management to be secured by the landscape condition, with specific reference made to the meadow management.

6.33 Acknowledges that the site is relatively small and constrained is content that onsite gain was achieved with the proposal, noting that further ecological interventions proposed and those to be captured within the previously requested condition, will provide additional ecological enhancements not yet measurable within the Defra metric.

Cambridge City Council Urban Design Officer

6.34 No objection. The proposed scheme is supported in Urban Design terms and will create a distinctive new building that responds to both its setting and the constraints of the site. Overall, the scheme is compliant with the emerging West Cambridge framework. Recommend conditions regarding external materials and details of the rooftop plant and solar panels.

Cambridge City Council Public Art Officer

6.35 No objection. Requires each application that comes forward [within the West Cambridge campus] to set out the status of the PAS implementation and include which phase of the strategy it relates and a timeline for implementation.

6.36 In further correspondence with the applicants, it was noted that the above requirement is reflected in the public art proposal within the Planning Statement submitted in support of the application. Based on this, officers are satisfied that the proposals form part of the wider site PAS, which is supported. Officer notes the triggers and funding of the PAS requires monitoring.

Cambridge City Council Access Officer

6.37 No objection. Refers to comments from the Disability Panel [meeting of 24 September 2019]. Further recommends/ emphasizes handrails on external steps; external garden routes between planters having 1.5m at corners for wheelchairs to turn, with potential 1.8m widths for chairs to pass each other; external tables with benches with gaps for wheelchair users to sit at table with no obstruction to their footrests; double doors to be powered or be asymmetrical with one leaf being at least 850mm and having an opening force of less than 20N; meeting rooms need hearing loops; good signage and colour contrast of décor for visually impaired people; glazing needing manifestations, internal blinds and consideration of reflected glare from floor surfaces.

6.38 Further recommends that where more than one seat is to be installed in a reception area or externally, a variety of seat heights should be provided, with at least one each with a seat

height of 380 mm, 480 mm and 580 mm from ground level. Where only one seat is installed, the seat height should be between 450 mm and 480 mm, and the seat should have both back support and arm rests. Some seating without arms and space within the seating is also recommended so that a wheelchair user can sit alongside and facing the same direction as others who are waiting.

Historic England

6.39 No comments. Officers should seek the views of the Council's conservation and archaeological advisers, as relevant. It is not necessary to consult HE on the application again unless there are material changes to the proposal.

Cambridgeshire County Council (Archaeology)

6.40 No objections, highlighting the site is in an area of high archaeological potential. Noted archaeological excavations were undertaken with the development of the William Gates building to the immediate south and east of the application area, which identified an extensive Roman period settlement with associated field systems, trackways and cemeteries (HER ECB1015).

6.41 Recommend that the site should be subject to a programme of archaeological investigation to be secured through a pre-commencement condition, and an informative explaining the sequencing of the investigation works.

Cambridge City Council Conservation Officer

<u>Comments on application as submitted</u>

6.42 No objection. The proposal is unlikely to have any significant effect upon Conservation Areas, but additional information should be provided to demonstrate the impact on the character of Madingley Road as an important approach route into the City. Computer generated images (CGIs) should be provided to show how the proposal frames the entry into the West Cambridge site with the adjacent Cavendish Laboratory building, and to show the proposal's relationship with the north side of Madingley Road.

Comments on application as amended

6.43 Following submission of the CGIs, officers confirm the proposed extension would read satisfactorily together with the building already permitted on the opposite corner of JJ Thompson Avenue in framing the entrance to this University site.

6.44 Further notes that although the proposed extension would be austere, formal and institutional in form, the additional images do not alter officers view that the proposal would have no harmful impact on the Conduit Head Road or West Cambridge conservation areas or on their settings.

Cambridgeshire Constabulary (Designing Out Crime Officer)

6.45 No objection. Noted that the proposals have been subject of pre-application discussions with the Crime Prevention Design team and have been advised that the measures on the Security Needs Assessment are to be addressed through BREEAM accreditation under HEA06.

Cadent Gas

6.46 No objection. Given the existence of apparatus in the vicinity of the proposal which may be affected, requested the LPA to inform Plan Protection on the likely decision on this application.

Health and Safety Executive

6.47 Do not have an interest in the development, as it does not intersect a pipeline or hazard zone.

Cambridge City Council Environmental Health

Comments on application as submitted

6.48 No objection. The development is acceptable, subject to standard conditions relating to construction hours, collection during construction, construction/demolition noise/vibration & piling, dust condition and Material Management Plan. Bespoke conditions are recommended for noise and vibration insulation / mitigation, servicing and operational management plan

compliance, servicing collection and delivery times, artificial lighting, electric vehicle charging points.

Comments on application as amended

6.49 Further information has been provided following representations regarding potential noise and lighting impacts from development to neighbouring properties, and officers are of the view that any potential building noise reflections will not have any adverse noise impact on neighbouring residential premises. The proposed Whittle extension is approximately 22 to 25m from the Madingley Road carriage way and 10m from JJ Thomson Avenue, and reflected traffic noise is not envisaged and at worst negligible in the immediate vicinity of the proposals.

6.50 Noted the proposed development will be considered a class E3 – Suburban site (medium district brightness – small town centres or suburban location) due to its proximity to other educational developments in the West Cambridge site, and that an E2 zone is considered for a rural location (low district brightness). Further notes that the Obtrusive Lighting Report provided with the application demonstrates compliance with Sky Glow (Upward Light Ratio) limits - predicted as 0% compared with recommended limits of 2.5% (E2 Zone) to 5 % (E3 Zone) - (Upward Light Ratio - refers to the maximum allowed percentage of luminaire flux (lumens) in the installation that goes directly into the sky).

6.51 Noted recommended working hours are standard practice for planning application sites across Cambridge City. The hours permitted are considered reasonable and unacceptable adverse impact on quality of life / amenity is not envisaged if development adheres to the permitted hours. Concluded reiterating the information submitted in response to various consultee consultation comments raise no new or additional environmental health related material considerations or concerns, and that the proposed development is acceptable subject to the imposition of the conditions and informative already outlined.

Cambridgeshire Fire and Rescue Service

6.52 No comments in terms of emergency water supplies as there is an existing provision in place which should be adequate to serve the development.

Cambridge City Council Disability Consultative Panel (Meeting of 24th September 2019)

6.53 No objection. In summary the Panel made the following comments and recommendations:

- Accessible drop-off area near entrance - this area would also need to be a pick-up point with a covered seating area to provide protection in inclement weather;
- Secondary pass door (to be confirmed) - the Panel would welcome a fully automated, outward opening door accessible to wheelchair users;
- 'Spanish steps' [exhibition space] - noted will be non-retractable with seating for 120 people and strongly recommends a handrail is for the lengthy staircase, with the Nicosia Museum in Cyprus being cited as an example of a good quality stairlift installed in a similar environment;
- South-facing terrace at the top of the staircase - noted to appear to be a very pleasant space;
- Extent of the public permeability of the building (to be confirmed) - any accessible features should be provided to ensure the building is as inclusive as possible to a variety of users;
- Lift - details of the lift have yet to be confirmed with a reminder for designers to look to Building Regulations (Part M) to give instruction on best lift selection and the requirements for compliance, as well as the British Standards guidance BS8300: 2018;
- Reception, interior surfaces and signage - the Panel stresses the need for colour contrasts for the benefit of the visually impaired, with recommendation for advice to be taken from acoustic experts regarding the installation of a hearing induction loop system;
- Shower room - the design presented as a diagram reflects a very poor example and should not be included as part of the submitted scheme.

Cambridgeshire Quality Panel (Meeting of 18th September 2019)

6.54 No objection. In summary, the Panel has welcomed the great ambition of the project and recognised that a lot of work has been carried out but highlighted that the architecture and landscape around the turbine hall needs further consideration. In summary, the main recommendations of the Panel were:

- Explore other materials for the turbine hall and the design of the landscape adjacent;
- The landscape needs to be more integrated with the building and enhance the ground floor experience;
- The service courtyard needs further consideration;
- Promote the idea of celebrating what you do and displaying engines or related objects within the landscape;
- Provide energy estimates in kWhr/m² for easier comparison; and
- Consider the WELL Building Standards.

6.55 The above are a summary of the comments that have been received. Full details of the consultation responses and report and minutes from the consultative panels can be inspected on the application file.

7.0 REPRESENTATIONS

7.1 Five representations were received from neighbouring residents. These included one letter objecting to the proposal, on the basis of the negative impact on the Madingley Road character, the potential for the solid façade to amplify traffic noise and impact on adjoining residents; interference of the proposal with the improvements to Madingley Road; dust; and car parking stress.

7.2 The further representations including a letter in support of the application, have the comments summarised as follows:

- Requests for the removal of the street parking along Clerk Maxwell Road and implementation of two-way cycleway;
- Requests for reduced working hours;
- Concerns over light pollution and potential impact on neighbouring properties and the Institute of Astronomy;
- Concerns over noise pollution from the proposal and increased pollution as a result of amplification of traffic noise;

- Potential impact on Madingley Road improvement proposals.
- Concerns over parking stress;
- Concerns over scale and massing being overbearing;
- Support to the signage north-west of the site, potentially to be made part of the public art proposal;
- Support to energy strategy and suggestions to biodiversity net gains measures.

7.3 The above is a summary of the representations that have been received and the relevant planning matters will be considered in the assessment. Full details of the representations can be inspected on the application file.

8.0 ASSESSMENT

8.1 From the consultation responses and representations received, along with officers' inspection of the site and the surroundings, the main issues relating with the current application are:

- Principle of development
- Built Environment
- Natural Environment
- Climate change and resources management
- Infrastructure
- Human Health and Residential Amenity
- Planning Obligations

Principle of Development

Site Allocation

8.2 Policy 19 states that development for University needs will be permitted on the West Cambridge Area of Major Change (AoMC), where the site is located, and where the principal land uses include D1 use class for educational use, associated sui generis research establishments and academic research institutes. Within the AoMC the wider West Cambridge Campus is allocated as Site Proposal M13 on the Cambridge Local Plan (2018), Appendix B, to accommodate higher education, research, sports and shared facilities.

8.3 The Whittle Laboratory was built in 1971 through the Cambridge University Engineering Department at the time, and officially opened as the 'Science Research Council Turbomachinery Laboratory" in 1973. The current application is proposed by the

Whittle Laboratory which is still linked to the Department of Engineering within the University of Cambridge. The proposals relate with the historic research use of the Laboratory and aim to enable through the proposed extension to home the National Centre for Propulsion and Power (NCPP), where the development of technology for ultra-low emission aircraft and low carbon power generation will take place.

8.4 The initiative is led by the Cambridge University through the Whittle Laboratory and funded by external organizations, including the Government, private organizations and the University itself. Whilst there will be private interest involved through funding in the development of the research which will take place at the NCPP, and the use of the building is for the research and development of a potential new product (ultra-low emission aircraft), the premises are directly linked with the University of Cambridge educational role and are, for this reason, considered of an educational D1 use rather than a 'business' B1 use class.

8.5 In this context, the demolition of 1,149m2 D1 floorspace followed by the extension of the existing Whittle Laboratory with 4,251m^2 D1 floorspace, (an therefore net addition of 3,102m^2 including the new NCPP), are considered compliant with Policy 19 and the site allocation as set out by the Cambridge Local Plan 2018.

Outline Planning Permission (OPP)

8.6 The extant 1999 permission at West Cambridge allowed for development of 176,120m^2 floorspace in addition to development prior to this consent, therefore resulting in a total potential of 244,212 m^2 floorspace for the 1999 masterplan.

8.7 To date, 201,710 m^2 have been delivered or received planning consent to be implemented at the West Cambridge campus, including the Civil Engineering building approved in March 2017 (ref. 16/1811/FUL) and the Cavendish building approved in August 2018 (ref. 17/1799/FUL). As set out in the Planning Statement submitted with the application, the academic components of the 1999 masterplan have been delivered to the levels anticipated in the previous approval, as have the residential elements.

8.8 However, the delivery of commercial research and shared facilities on the site is well below the levels envisaged in the 1999 planning permission and 2004 review. This prompted the University and City Council to agree through the adopted Cambridge Local Plan that it is appropriate to prepare a new site-wide masterplan through a new outline planning application, currently the OPA ref. 16/1134/OUT, explained below.

8.9 The initial phase of West Cambridge development enabled the relocation of the Cavendish Laboratory to the site west of JJ Thomson Avenue (currently under construction), and of the Department of Engineering from its site on Trumpington St (and fronting the Fen Causeway) to provide a new Engineering 'campus' on the eastern part of the West Cambridge Site. Following completion of the Civil Engineering building was in September 2019 and has been occupied, the Whittle Laboratory, is the next element of this Inset Masterplan or the Engineering Campus fronting JJ Thomson Avenue. Therefore, this current application is considered to align with the phasing of the wider campus.

Outline Planning Application (OPA)

8.10 In the event proposals include densification of the development on site with a significant increase of floorspace over that already approved, Policy 19 sets out that a revised masterplan supporting an outline planning application (OPA) is to be submitted and agreed, to allow an integrated and comprehensive approach to the provision and distribution of the uses and supporting facilities and amenities.

8.11 The application proposals include a net increase of 3,102m^2 floorspace to the current laboratory, after which the Whittle Laboratory would have a total of 6,014m^2 floorspace. This is more than twice the existing 2,840m^2, which is considered a significant densification of the site.

8.12 The current outline application for the wider West Cambridge (OPA ref.: 16/1134/OUT) includes a total of 370,000m^2 of D1 floorspace, which is additional to the permitted floorspace with the OPP in 1999. The Planning Statement submitted with the application explains that the additional floorspace proposed with the extension of the Whittle Laboratory is not an addition to the floorspace submitted through the OPA. As the OPA remains

undetermined at the time of writing this report, consideration will need to be given to the planning history of the area and determined floorspace, as part of the assessment of that application.

8.13 Furthermore, Policy 19 (3c) requirements for an integrated and comprehensive approach to the provision and distribution of the uses is given by the current OPA, and the current application to Whittle Laboratory does not conflict with the outline proposals as assessed to date.

Cambridge Economy

8.14 Beyond the site allocation and Policy 19 of the Local Plan, Policy 43 deals with University developments and is supportive of the continued development of the West Cambridge site, where the Whittle Laboratory site is situated. Policy 43 sets out that sites within West Cambridge will provide opportunity for enhanced faculty and research facilities.

8.15 The proposed facility will accommodate additional 32 members of the staff and benefit additional 36 students through the proposed net addition of 3,102 m2 D1 use, aiming for the extension and modernisation of the existing laboratory. This is in line with Policy 43 of the Cambridge Local Plan 2018.

Conclusion

8.16 In light of the above evaluation, the principle of the net increase of 3,102 m^2 of D1 use is considered acceptable and in accordance with the site allocation and Policies 19 and 43 of the Cambridge Local Plan.

8.17 Further requirements of Policy 19 (items 3d to 3i) relating to the protection of views from the Green Belt and into the City, sustainable travel, green infrastructure, phasing and building heights will be discussed in the following sections and when relevant will refer to the OPA and OPP. Other aspects of the planning assessment will have reference to other policies within the adopted Cambridge Local Plan, as well as further current policies and guidance.

Built Environment

8.18 The development plot boundary is defined by an established woodland edge and an area of vegetation to the north which separates the site from Madingley Road and representing a key feature in the northern extremity of the West Cambridge site. Some of the trees on the north-west corner of the site will be removed to accommodate the extension and the National Centre for Power and Propulsion (NCPP) test hall, however the existing tree belt with Madingley Road will be maintained as a landscaped buffer of 10m width, or twice as the current tree belt. This is further discussed in the Natural Environment section.

8.19 The masterplan as proposed within the OPA (ref. 16/1134/OUT) includes a new integrated Engineering 'campus' on this eastern part of the West Cambridge site, where the Whittle Laboratory is located. This includes the emerging surrounding context, from which the buildings' external expression takes its cues from. In officers views the proposals would sit comfortably with the Williams Gates building to the south and the new Cavendish Laboratory to the to the west in this context.

8.20 Locating the NCPP to the north west corner of the site was intended to create a showpiece space for the Whittle Laboratory and wider Department of Engineering worthy of its gateway position at one of the most prominent entry points to West Cambridge. The remaining offices and shared facilities have been arranged to provide an engaging and activated frontage along the west and southern edges of the site, as aimed by the new masterplan for West Cambridge.

Building Heights

8.21 Policy 19 of the Local Plan when setting out requirements for this West Cambridge site sets out that 'the approach to appropriate development heights will be determined through the OPP, giving consideration to the sensitivity of the landscape within the Green Belt to the south and west'. In terms of the extant 1999 masterplan (ref.: C/97/0961/OP), Table 5 of the Design Guidelines set out that academic buildings should have an approximate range of height of up to 14.8m (AOD), with specific parameters established to each of the masterplan plots. Whittle Laboratory falls into plot F of the master plan, however

no specific height or massing guidelines is provided on this section of the document.

8.22 Officers are of the view that whilst the proposed Whittle Laboratory extension at 32m AOD would be significantly higher than the broad maximum height of 14.8m AOD, the guiding principle of the OPP 1999 masterplan of protection of the surrounding Green Belt landscape and character is kept in the current proposal. In addition, more recent permissions within the West Cambridge campus establish a different character to this new Engineering 'campus' on this eastern part of the West Cambridge, where the Whittle Laboratory is located. This is particularly in relation to the residential and other institutional character of the areas north of the tree belt and Madingley Road, to the north of the Whittle site.

8.23 The acoustic and height requirements of the NCPP test hall drive the proposed scale and massing. Whilst very limited weight is given to the OPA as undetermined, the supporting information demonstrates the proposal is coordinated with this wider strategy coming forward. The development site overlaps three maximum height zones within the West Cambridge - 32.00 AOD zone towards the north, 35.00 AOD in the middle and 38.00 AOD to the south of the site - identified on the West Cambridge height parameter plan. The proposal has been designed to meet the requirements of the Whittle labs brief whilst remaining within specified parameters. As noted by the Council's Urban Design officer, the submitted East & West Elevation (Drawing EM01262-GAL-WH-XX-DR-A-42020 Rev 3) clarifies that the overall maximum height of the NCPP Test Hall is 32m AOD, which equates to the maximum height identified in the emerging West Cambridge outline masterplan (OPA).

8.24 In terms of the potential impact from the proposed heights to the Green Belt west and south of the wider West Cambridge campus, the proposed extension is likely to be visually connected with the emerging buildings in the campus, in particular the William Gates building and the future Cavendish Laboratory currently under construction. From a closer location the proposed Whittle is very likely to 'frame' the future square envisaged in the OPA, along with the William Gates and Civil Engineering buildings.

8.25 This is demonstrated with the computer-generated images (CGIs) submitted as part of the application demonstrate the impact of the proposals on the Green Belt. The existing landscape along JJ Thompson Avenue and particularly the more recent buildings south of the West Cambridge campus and the emerging Cavendish Laboratory west of the Whittle site will assist in filtering the views from those directions. This is demonstrated by the cross-section on page 42 and photomontage on page 43 of the Design and Access Statement (DAS) and confirmed by officer on site visit. Officers therefore conclude that proposals would not be detrimental to the openness neither would have a negative visual impact to the Green Belt south and west of the application site.

Impact on Historic Environment

8.26 The most sensitive location in terms of the resulting visual impact to the historic environment is the junction between JJ Thompson Avenue and Madingley Road, where the tallest NCPP test hall will be located. As previously described, the site is in close distance (approximately 150m and 50m respectively) from the boundaries of the Conduit Head Road and West Cambridge Conservation Areas (CAs).

8.27 Nevertheless, the existing tree belt which bounds this part of the northern side of the wider campus shows a high level of vegetation, which coupled with the relatively flat topography creates a secluded, inward looking sense of enclosure and provides a significant level of screening to the detached properties within the CAs. Officers conclude that filtered views of the Laboratory extension at the junction of Conduit Head Road would not result in significant harm to its setting.

8.28 In addition to the proximity to CAs, the JJ Thomson Avenue and Madingley Road junction lies on an important route into the city. As noted by the Council's Conservation Officer, this section of Madingley Road is described in the Cambridge Suburbs and Approaches character assessment as a distinct rupture between two different character areas along the road. The site is located in what is considered a separation between the prevailing domestic character east of the wider campus and the more open area, with distinctive buildings such as the Schlumberger Research Centre and further infrastructure related with the University use, west of Whittle site.

8.29 The Cambridge Suburbs and Approaches also states that buildings along JJ Thomson Avenue, such as William Gates building south of the Whittle Laboratory, have already contributed to the emerging character on the south side of Madingley Road into the city. Conservation officers conclude that the proposals for the Whittle Laboratory extension are unlikely to have any significant effect upon the character of the nearby CAs, however it is the effect upon this important route into the city and its relationship with existing buildings as it forms the 'gateway' into the university's wider campus.

8.30 The character description to Madingley Road also sets out that the trees and the scale of the new buildings along the eastern side of JJ Thompson Avenue establish an institutional and formal character of this part of the West Cambridge campus. The document also points out that a different scale and character is established along the northern side of Madingley Road, where the observatory buildings are set back in trees and of a more modest scale.

8.31 The visual impact of the building has been considered and the DAS submitted with the application include verified views. From these it is possible to see from verified view 02 (page 45 of the DAS) that the NCPP laboratory will have a significant presence on the junction between Madingley Road and JJ Thompson Avenue. Nevertheless, the illustrative visualization on the same page confirms that the scale will be appropriate to meet the aims that this junction will form one of the primary gateways to the West Cambridge campus, with the Cavendish III and Whittle Laboratory framing this primary entrance to the wider area.

8.32 The section provided within page 42 of the DAS demonstrates that the proposed extension sits well in the context of the proposed gateway for the wider West Cambridge site, with the Whittle Laboratory being approximately one storey lower than the Cavendish building to the west. This demonstrates that the building will not be unduly dominant or intrusive and will be just if the scale to celebrate this gateway to the West Cambridge campus, as expected within the wider OPA masterplan strategy and supported by the Cambridgeshire Quality Panel.

8.33 Officers are of the view are the proposed building will not result in significant visual harm from closer vantage points along Madingley Road to the east and west of the site as the tree belt

will remain the dominant feature along Madingley Road. As illustrated by both the verified views 01 and 02 (pages 44 and 45 of the DAS, respectively), the proposed acoustic screen north of the NCPP Test Hall is obscured by the woodland belt and will not be intrusive from Madingley Road.

Street Frontages

8.34 The NCPP testing hall accommodates testing equipment which requires strong acoustic treatment, which justifies the absence of any openings on the northern façade fronting the tree belt and landscaped buffer. Nevertheless, the proposed design of the NCPP includes a large portal window on the ground floor which provide views into the testing hall and the scientific production taking place in the building, giving opportunity for promoting science on show and engaging with the street.

8.35 The relocation of the existing office space to the southwest of the site would also enable some key active features to the ground floor to engage the street. As well as the main entrance facing south into the future public square, the ground floor accommodates collaboration spaces for the NCPP and the library and workshop along the western façade fronting JJ Thompson Avenue. Around the primary entrance on the south elevation the frontage is activated with a first-floor accessible terrace and colonnade at ground floor. The proposed creation of active frontages is acceptable in urban design terms and in accordance with the emerging OPA Design Guidelines.

8.36 From the NCPP test hall the building steps down slightly (0.5m) for the workshops and office space and to the south, and the similar height along the west elevation creates a continuity to the street scene, sitting well with the larger scale Cavendish building on the other side of JJ Thomson Avenue. The eastern side of the site contains some of the retained components from the existing Whittle Laboratory along with the back of house facilities. The definition of the yard with proposed gates and continuation of the building line with the proposed cycle park enclosure creates a well resolved boundary to the east side of the building.

Landscape and Public Realm

8.37 The Planning Statement submitted in support of the application notes that the approach to the landscape proposal to the west relates to JJ Thomson Ave and the ground floor uses of the building. The landscape design in this part of the site allows for the implementation of the enhanced cycleway along the eastern side of JJ Thomson Ave approved through the Cavendish Laboratory application (ref. 17/1799/FUL).

8.38 The landscape is paired back adjacent to the NCPP to allow the building to meet the ground and allow people to walk up to and dwell in front of the feature window. As the building moves back away from the road the landscape provides some defensible space in front of the workshop, library and NCPP project space not dominating the street scene. As noted by the Council's Urban Design officer, the service courtyard has been revised to create a well-defined and secured space to hold the west side of the open space and to provide a more logically placed cycle park. Within the courtyard shade tolerant planting has been introduced.

8.39 To the east of the building the proposals aimed to enhance the area of land where the office building is demolished, forming a new square with species rich meadow to the north and a lawn area with new tree planting to the southern side. The landscape approach has been further developed to achieve a better integration of the building with the retained tree belt on Madingley Road and to the more open nature of this part of the site. Between this area and the main entrance to the building a new garden walk is planned for, along the trees to be replaced at the southern boundary. This allows for a future visual integration with the Engineering square to the south, between Whittle and the William Gates building, once this is developed in a later phase of the OPA.

Public Art

8.40 The University has developed a public art strategy (PAS, dated 12 September 2017) which identifies different themes and priorities for public art across the West Cambridge campus site. This will be developed by the University within the remit of the OPA (ref. 16/1134/OUT) with the intention that the PAS would

provide the strategic framework for reserved matters applications in the future.

8.41 In correspondence dated 12 February 2020, the applicants have stated that the Whittle proposal follows the strategy set out in the OPA PAS. Further, the applicants advise on the same correspondence that the initial piece of art 'The Green' is fully funded and that the process for is well under way for securing the art in relation to that strand. For this reason, the current application proposes that the Whittle development provides the first contribution to the next commission following the PAS, relating to Water and the Ecological Corridor.

8.42 As per the OPA PAS, the contributions would follow a floorspace approach on calculating each of the sites/ developments coming forward within the OPA / West Cambridge campus area. In the case of Whittle, the amount would be equivalent to £17,825, or equivalent to the net floorspace of 3,103m^2 being proposed with this application, which would not be enough for triggering the next full commission of £75,000.

8.43 For this reason, the applicants propose that the contribution relating to the current application is not spent until the total amount for the full commission is in place with future development in the wider West Cambridge and following the PAS. The further detail of the specific commission can only come forward following selection of an artist, through a process following the planning decision(s) which would trigger a full commission. This is the approach adopted in more recent permissions in the campus, notably for the Civil Engineering building (ref. 16/1811/FUL), the Shared Facility Hub (ref. 17/1896/FUL) and the Cavendish Laboratory (ref. 17/1799/FUL).

8.44 Given the above and the fact that the submitted PAS has been at this stage considered in accordance with the Council's Public Art SPD, officers are satisfied that a scheme for public art, either on site or in the immediate locality, can be satisfactorily agreed through the imposition of a planning condition.

Building Design

8.45 The overall composition of the NCPP test hall at the junctions of Madingley Road and JJ Thomson Avenue was raised at the review by the Cambridgeshire Quality Panel, who are supportive of the architectural response. This celebrates the NCPP function as a key driver in the proposed architectural response with a heavier weight approach taken through use of fibrocement panels, and continuous parapet line which runs through to the workshop and office section of the building to link them visually.

8.46 The Council's Urban Design officer is supportive of the proposals, stating that the proposed aluminium rain screen panels, Equitone fibre cement board, brickwork to match the existing building and blockwork are all considered to be acceptable in design terms and will combine to create a distinctive building that sits well with the emerging palette of materials found on the West Cambridge site. In officers' views, all the proposed elevations have a rhythm created by either the chosen panelised system on the NCPP test hall or the modular aluminium panel and window system employed on the other parts of the building. The cladding is being designed to be easily prefabricated and provide a high-performance façade, and the scale of the opening within the otherwise solid elevation creates an assertive form at a key entrance to the West Cambridge site. Signage zones are also identified on the elevations, which have been further developed along with the location of the portal window and the materials to the NCPP test hall, following recommendations by the Quality Panel. The Council's Urban Design officer recommends conditions requiring the submission of details of materials and rooftop plant and solar panels. These are supported and an additional condition requiring the submission of the signage details is recommended.

8.47 The proposed internal layout is a product of the Whittle Laboratory functional requirements of research and development. Laboratories and workshops undertaking heavier industrial operations will be grouped towards the northern end of the site to separate them from the more sensitive undertaking lighter, and more vibration sensitive operations located towards the south of site. The northern end of the building uses the natural site and existing building levels to allow for ease of

single level connections between the existing labs, heavy workshops and the NCPP lab.

8.48 The importance of creating a human scale and collaborative environment, with particular attention to the 'tea table' where currently students, engineers and industry traditionally meet has been a key drive of the internal design of the Whittle extension. The 'tea table' is a large space located at the first floor, adjacent to the breakout area and the void over the 'Spanish steps' or the exhibition area designed in the form of a rectangular amphitheatre. This "communal heart" seems well located and conveniently accessible to everyone from the lift core which runs from the ground floor to the second-floor level of the building. The void over the amphitheatre is a common aspect linking all level of this part of the Whittle Laboratory where the cellular offices and open plan areas would be above the library, exhibition and seminar rooms at the ground floor, clearly where the more publicly accessible areas of the building would be.

8.49 Consideration has been given for the extension to Whittle Lab to be an accessible building, with the ground floor showing wider corridors (generally of a minimum of 1.5m to 1.8m). Accessible toilets will be provided in all three main levels, as well as level access at all main entry points, and lifts enabling independent vertical movement. The DAS states that some of the features raised by the Council's Access officer and the Disability Panel will be provided, such as hearing loops, designated wheelchair spaces in the amphitheatre and a handrail along the 'Spanish steps' staircase. Details can be secured by way of condition.

Conclusion

8.50 Overall, the proposed extension to the Whittle Laboratory will create a distinctive new building that responds to both its setting and the constraints of the site and is in compliance with the requirements of policies 19, 55, 56 and 57 the Cambridge Local Plan, subject to the conditions referred to above.

Natural Environment

8.51 A Preliminary Ecological Appraisal (PEA) was submitted with the application to determine the likely ecological constraints of the application proposals for both demolition and extension part of the proposal, and to establish the potential scope of

further/more detailed ecological surveys which may be needed to support any future planning application.

8.52 As part of the protected species survey, a preliminary bat roost inspection of laboratory buildings and trees of enough maturity was completed. A follow-up bat roost emergence survey was also completed in September 2019 for a mature white willow pollard on the western side of the site for its potential value to roosting bats. Whilst evidence of bats was found in the buildings, no bats were seen to emerge from the mature white willow during the surveys.

8.53 In terms of habitats, the site comprises of semi-natural habitat included amenity grassland lawns to the west of the lab buildings, an area of broadleaved plantation woodland and adjoining semi-natural broadleaved woodland which bounded the north of the site, and a smaller area of semi-improved neutral grassland in the centre of the site. This latter provides potentially suitable habitat for reptiles although, due to the small size of the habitat and its isolation from any other suitable habitat areas, their presence is highly unlikely. In addition, previous surveys on the wider campus site have only recorded the occasional presence of individual grass snake, the latest from 2007.

8.54 A small number of common garden and hedgerow bird species were recorded during the survey, and the study concludes the site has the potential to support a small number of common hedgerow-nesting species, but it is too small and lacking in habitat diversity to support a large or particularly significant assemblage of species. Insufficient evidence for badgers was found in the site and it is expected they pass through the northern boundary infrequently.

8.55 The PEA concludes that most habitats on site are of low relative ecological value, with individual mature trees and semi-improved grassland of relatively increased ecological value. On-site buildings have negligible potential for roosting bats, and the one white willow towards the west of the site which has been assessed would not support a bat roost. The northern boundary woodland was previously confirmed as being used by commuting bats by surveys informing previous development of the site. Furthermore, whilst the site is likely to be of value to a small range of common hedgerow nesting bird species, these

would not be of any ornithological significance. The Council's Biodiversity officer is content with the survey effort made in support of the application.

Biodiversity Net Gain (BNG)

8.56 The Council's Biodiversity officer supports the proposed woodland enhancements, meadow creation and species mix which would appear to deliver no net loss, and potentially a net gain in biodiversity. This has been confirmed by the inclusion of the base line habitats and proposed habitats for enhancement and creation into the Defra biodiversity impact metric (Version 2). Officers are satisfied that a measurable net gain of 5.73% in habitat units will be achieved by the proposal.

8.57 The biodiversity assessment is based on assessment assumptions including that most of the grassland will be managed as meadow as opposed to amenity grassland lawn, which would result in a 'good' value as per the classification in the metric. Applicants have clarified that some lawn area will be retained and managed as such and meadow areas will not be open space where general access is encouraged, with terms of split set out in section 7.3 of the DAS. It has also been clarified that the brown roof will be in the University's ownership/management, which justify the value applied to this feature within the metric.

8.58 Furthermore, applicants have proposed that details will be specified through a Landscape Maintenance and Management Plan. In accordance with the advice offered by the Council's Landscape and Biodiversity officers, this can be secured by planning condition. Relevant conditions have also been recommended to include detailed specification for green roofs and programmed works and monitoring to secure the proposed woodland enhancements, should permission be granted to the Whittle Laboratory extension.

Green Infrastructure

8.59 Policy 19 of the Local Plan in setting out the requirements for the development of the West Cambridge campus to come forward, requires proposals to provide appropriate green

infrastructure which is well integrated with the existing and new development, as well as with the surrounding area.

8.60 As set out in the submitted Planning Statement, the landscape proposal to the north of the site has had to respond to the constraints of the development and the need to retain and enhance the woodland belt. A detailed survey shows that the site can accommodate the building without harming the trees that are identified to as mandatory in the outline application parameter plans, and that works in the vicinity required for drainage can also be accommodated.

8.61 A Woodland Maintenance and Management Plan has been developed to ensure that the woodland belt is managed strategically to thrive over time and enhance the vegetation on the edge of the development. The landscape proposals including those relating with the retention of the woodland belt are supported by the Council's Landscape and Arboricultural officers. The Woodland Maintenance and Management Plan will be one of the approved documents with this application, and the further landscape maintenance proposals will be secured by condition, should permission be granted.

Trees

8.62 Policy 71 of the Cambridge Local Plan sets out that development proposals should preserve, protect, and enhance existing trees and hedges that have amenity value as perceived from the public realm. Furthermore, Policy 71 states that development should not be permitted when involving ffelling to trees of amenity or other value. This is unless the proposal outweighs the current and future amenity value of the trees, and, where felling is proved necessary, appropriate replacement planting is provided.

8.63 The Arboricultural Impact Assessment (AIA) provided in support of the application was based on the inspection of a total of 118 individual trees and 19 groups, ranging from young planted trees of less than ten years of age through to a Willow and Elms of up to 80 years of age. The assessment states that most of the trees have been planted as part of a landscaping scheme, with later additions, mainly to the north and south of the site. Most of the trees are of less than 20 years of age and those on

the northern boundary are generally drawn up, crowded and with high or heavily asymmetric crowns.

8.64 Whilst retaining the majority of trees along the northern boundary of the site and the tree belt along Madingley Road, the proposal to extend the Whittle Laboratory would result in the removal of approximately 64 trees (32 individuals and 4 groups), mostly to accommodate the building extension itself, with some trees removed along the access road south of the site, as shown on Drawing EM01262-TMN-ZZ-00-DR-L-000002 P6. As noted in the AIA, the majority of the trees to be removed are relatively small, young trees planted in the last 20 years, of these most are Ash and with Ash Dieback, and high probability of being dead within the next 10 years. As such, the assessment concludes that their loss will not be significant in planning terms. The proposed tree losses to the north of the site are accepted by the Council's Arboricultural officer.

8.65 For the trees along the access road (identified as T1 to T14 in the drawing), their removal was agreed on the basis that replacement planting would be with large trees (at maturity) and sustainable. The Council's Arboriculture Officers does not object to the development, subject to the recommended conditions for the approval of an Arboricultural Method Statement (AMS) and a Tree Protection Plan (TPP) be imposed should permission be granted to the current application. Relevant conditions have been recommended.

Conclusion

8.66 The Council's Ecology Officer is content that the site has limited ecological value, and that the proposals do not impact on the site wide ecology designations. Habitats that have been identified through the wider OPA West Cambridge masterplan application will not be adversely affected by the proposed development.

8.67 The tree belt as a key feature to the West Cambridge northern boundary and to the character of Madingley Road will be maintained and enhanced. The Council's Arboriculture Officers does not object to the development and consider the removal and replanting of trees as proposed to be acceptable. Officers are of the view that the proposed conditions would enable an enhanced amenity value of the remaining and replanted trees.

8.68 For the above reasons, the proposals are considered compliant with policies 69, 70 and 71 of the Cambridge Local Plan, subject to the planning conditions as described above.

Climate Change and Resources Management

Energy Strategy

8.69 Policy 29 of the Local Plan is supportive of developments involving the provision of renewable and/or low carbon energy generation. The proposal for the Whittle Laboratory includes the use of air source heat pumps to provide heating and cooling and provision of a photovoltaic panel array of 210m2, which would cover around 25% of the roof area.

8.70 This strategy would lead to a 37% reduction in carbon emissions compared to Part L 2013 and achieves five credits under Ene01 of BREEAM, which is supported by the Council's Sustainability Officer. A condition to secure implementation of this strategy is recommended.

Carbon reduction and sustainable design

8.71 Cambridge Local Plan supports the achievement of national carbon reduction targets, with expectations set out in Policy 28 for all new development to meet the minimum standards including for sustainable construction, carbon reduction and water efficiency. Furthermore, Policy 19 when determining the aspects relating with the site allocation within Cambridge Local Plan, sets out that the Council will be supportive of a site-wide approach to renewable or low carbon generation.

8.72 In terms of carbon reduction, new non-residential developments are expected to meet an of excellent BREEAM level as a minimum, with on-site carbon reduction in line with the minimum requirements associated with this level and full credits for water efficiency to be achieved for category Wat 01 of BREEAM. The submitted information include a BREEAM Stage 3 Planning Report which sets out the proposals will achieve BREEAM 'excellent', with a score of 77.9%. In addition, the proposals would target between 3 and 4 credits for water efficiency under BREEAM, noting that 3 credits represent a 40% reduction in water use are currently targeted, with the potential for a further credit. A condition is recommended to secure certification.

8.73 Policy 28 further states that all development should take the available opportunities to integrate the principles of sustainable design and construction into design of proposals. The proposals incorporate design and construction features which are supported by the Council's Sustainability officer, among which:

- Use of green roofs;
- Design for 75% of all habitable spaces to benefit from natural ventilation, with automated night purge designed in;
- Role of biophilic design in helping to improve the health and wellbeing of those using the building;
- Role of the external façade system in providing solar shading to minimise unwanted direct solar gain on the western and southern elevation;
- The use of an energy cost metric to identify sustainable solutions for the development;
- Overheating modelling using TM52, considering future climate scenarios.

8.74 In addition to the 37% reduction in carbon emissions set out in the energy strategy for the Whittle Laboratory, most part the scheme meets the targets set out in the bespoke Sustainability Assessment Matrix (SAM) that has been developed as part of the outline application (OPA) for the wider West Cambridge site. Whilst this application has yet to be determined, this comparison is supported by officers, to ensure the site-wide approach requested by Policy 19.

Water management and flood risk

8.75 Policy 32 of the Cambridge Local Plan advises that for previously developed sites opportunities should be taken to reduce the existing flood risk by the positioning of any development so that it does not increase flood risk elsewhere by either displacement of flood water or interruption of flood flow routes. The Environment Agency (EA) flood maps illustrate that the centre of the site is generally at high and medium risk from surface water, with medium to low and very low areas towards the west, south and eastern boundaries of the site.

8.76 As noted by the Lead Local Flood Authority (LLFA), the overall surface water scheme for this site includes an extensive network of Sustainable Drainage Systems (SuDS). Applicants advise this will comprise green roof, vegetated swales/ planters,

permeable paving detention basins and below ground geocellular storage, providing the required degree of surface water attenuation storage. The LLFA had initially required that the surface water to be addressed further, with a requirement for finished floor levels to be raised higher.

8.77 The Council's Drainage Engineer noted in initial comments to the application that the Anglian Water surface water sewer is an historic culverted watercourse and the 'pond' is a remnant of the open watercourse. There is an overland flood route that follows the old route of the watercourse and is interrupted by the current design of the building. This flow route from Madingley Road will still exist after the new extension and needs to be addressed in the design of the external works so that no internal flooding occurs.

8.78 In further correspondence the applicants have advised that to deal with the existing flood water in the centre of the site, a new overland flood route retains/directs surface water to the north of the new/existing buildings, as shown on drawing EM01262-SAW-XX-XX-DR-C-0303. Furthermore, the central part of the site comprises porous paving as part of the SuDS and can store surface water up to the 1:100-year return period and would only generate overland flow from events exceeding this return period.

8.79 Following clarifications from the applicants and further correspondence with the Flood Authority, the LLFA are satisfied that the modelled surface water flooding against the buildings would only be during events exceeding a 1 in 100-year event plus 40% climate change. Further, the LLFA is satisfied that exceedance flows from the proposed attenuation basin will be contained to the north of the proposed building, with flows only being directed south-eastwards and towards buildings when storage in these areas is also exceeded.

8.80 Pre-construction and post-construction modelling of the surface water flooding needs have been submitted as above and the Council's Sustainable Drainage Engineer is satisfied that those have been considered in the design proposals and are acceptable. Officers are content that a suitable surface water and foul water drainage provision for the proposed development can be achieved.

8.81 In response to consultation, Anglian Water has stated the surface water strategy/flood risk assessment submitted with the planning application acceptable on what concerns the organization. This is on the basis that a condition be imposed for works to carried out in accordance with the surface water strategy and submission of details of the surface water discharge, which is supported. Relevant conditions have been recommended.

Waste

8.82 The proposals include waste storage and recycling points provided within the building design, and applicants advise the University's own Facility Management will be responsible for the day to day management and collection of waste and collection services. Bin lorries will access the site from JJ Thompson and the access road south of the proposed buildings. The refuse collection will be from the east end of the access road, where bins will be temporarily held on the collection day, after being manually transferred through a paved area from the enclosed refuse store within the courtyard. This is consistent with the use distribution across the site, with deliveries and servicing taking place on the eastern parts of the building.

8.83 Refuse requirements are being considered in the context of servicing arrangements for the wider West Cambridge site and the waste strategy employed at the development will be developed in order to meet the requirements placed upon the development by BREEAM and the West Cambridge Sustainability Assessment Matrix (SAM 2017). Given this context and the support by Sustainability officers, the proposals are considered to meet the requirements of Policy 28 of the Cambridge Local Plan 2018.

Conclusion

8.84 Considering the above, the proposals are supported in terms of achieving sustainable construction and adequate resources and flood risk management, including through the exploration of alternative methods of surface water disposal. Therefore, the application is in line with the aims of policies 19, 28, 29, 31 and 32 of the Cambridge Local Plan, as well as with the Greater Cambridge Sustainable Design and Construction SPD 2020.

Infrastructure

8.85 Policy 19 of the adopted Cambridge Local Plan sets out that in the case of a proposal for development to come forward above the quantum permitted with the OPP, the precise quantum of new floorspace will be subject to testing and demonstration through the development of a revised OPA for the site. This would include a comprehensive transport strategy for the site, incorporating a sustainable transport plan to minimise reliance on private cars, and the enhancement of sustainable travel to support development. Policy 19 also requires in cases of densification of the site that the transport strategy includes assessing the level, form and type of car parking on the site.

Transport Assessment

8.86 The Transport Assessment (TA) prepared for the West Cambridge masterplan review within the OPA assessed the transport impacts associated with the increase in total floor area from 248,272m^2 to 500,280m^2 at the wider West Cambridge site. Accordingly, the proposal has identified a mitigation strategy to support these proposals, including the West Cambridge Travel Plan (TP).

8.87 The TA submitted with the current application assesses the standalone impact of the Whittle Laboratory redevelopment, in advance of the determination of the West Cambridge outline application. The assessment considers the Whittle Laboratory would form one of the first completions within the new masterplan, should the OPA be approved, and this approach aligns with Policy 19 requirements.

8.88 The TA submitted with the current Whittle application concludes that the proposal will not have any significant adverse impact on the highway and public transport network but there will be several additional cycle movements linked to the proposal. A review of the travel survey data indicates that those staff that are within a bus catchment generally already choose to cycle and no bus users were recorded within the travel survey. The assessment indicates an increase in 32 members of staff and 36 students, usually with 80% attendance on a typical day and forecasted proportion of 55% of staff members driving to the development. The future baseline for the TA has considered the

several committed developments associated with the densification of the West Cambridge campus.

8.89 In terms of motor-vehicular movements, the assessment concludes that there would be an increase of five two-way trips in the AM peak and seven two-way trips in the PM peak, which the Highways Authority has considered a robust approach and acceptable outcome. In response dated 16 January 2020, the Highways Authority has advised that JJ Thompson Avenue as a private road would only be subject to modifications to the existing adopted public highway at the junction of the avenue and Madingley Road, with further correspondence confirming the relatively small additional vehicular flows would not have a significant impact on this or other local junctions. Given this context, mitigations relating with motor-vehicular impact would not be necessary to make the Whittle Laboratory extension acceptable in planning terms.

8.90 Nevertheless, following review of the impacts from the application the Highways Authority recommended mitigations be sought for the cycle movements occurring with development. This would be in the form of a mandatory two-way cycle way along Clerk Maxwell Road, with condition for submission of details to be agreed and secured prior to approval be given to the current application. The implementation of the two-way cycle path will have a timeframe secured by condition; however, the works will be undertaken by the developer as obligation under a S278 agreement between the Cambridgeshire County and the applicants.

8.91 Further to the above, a condition requiring a Travel Plan to be agreed prior to occupation is recommended by the Highways Authority as part of the mitigation package. This is supported and the package of mitigation requested by the Highways Authority will mitigate the transport impact of the development based on its impact over and above the current situation. Appropriate mitigation for cycling is provided, in accordance with Local Plan Policy 81.

Madingley Road Interventions

8.92 The Madingley Road Cycling and Walking Project is a Greater Cambridge Partnership (GCP) initiative resulting from a 2019 consultation with local residents, workers and regular users of

Madingley Road, as well as key stakeholders, on potential improvements to make walking and cycling along the route more attractive. Two options (1 and 2) along with a Madingley Road Landscape Appraisal were subject to public consultation, and the contributions are currently under review. A report of the consultation will be considered by the GCP Joint Assembly and Executive Board later in 2020 (https://consultcambs.uk.engagementhq.com/madingleyrd2020, assessed 6 May 2020).

8.93 Following officers' request, applicants have provided drawings (EM01262-TMN-XX-XX-SK-L-40043 Rev A and 40044 Rev A) in support of the application, which demonstrate the Whittle Laboratory extension would not interfere with either Option1 or 2 of the Madingley Road improvements, as proposed by GCP. In response to consultation the cover letter for the amended information notes the proposed building sits approximately 20 metres clear of the proposed routes and does not therefore prejudice the ability for either scheme to come forward. Officers note from the submitted drawings that the red boundary adjoins the limit of the GCP proposals in either improvements options and therefore are content that the current application would not interfere with the Madingley Road Cycling and Walking Project.

8.94 Applicants note in the same correspondence dated 6 March 2020 that the planting location of the replacement trees in the north-western corner of the application site has been revised (EM01262-TMN-ZZ-00-DR-L-000004_P5) to avoid conflict with one of the proposed trees and some low level street planting. Applicants note that in both GCP options existing scrub vegetation overhanging the footpath is to be removed, which is consistent with the GCP landscape appraisal (pages 15 and 16) issued as part of the consultation and is shown on the overlay plans (EM01262-TMN-XX-XX-SK-L-40043 Rev A and 40044 Rev A). The tree planting proposal has been accepted by the Council's Arboricultural officer and the amendments are supported.

8.95 Bus services operate on Madingley Road, with the nearest bus stop at approximately 100m to the west of the north-western most corner of the application site. As such and as demonstrated by the overlay drawings (EM01262-TMN-XX-XX-SK-L-40043 Rev A and 40044 Rev A) provided with the

amendments to the application, the proposals would not interfere with existing bus stops along this route.

8.96 Third party comments have raised the issue of securing transport mitigation through the S106 planning obligation process, towards improvements to Madingley Road. However, the application would result in no more than seven two-way trips in the peak hours and the transport assessment concludes that the proposal will not have any significant adverse impact on motor-vehicular movements, which is accepted by the Highways Authority. As previously discussed, mitigations as a result from development increasing cycling movements will be delivered in the form of the implementation of a two-way cycleway along Clerk Maxwell Road. This will be secured by condition, with works to be carried out by the applicants under a Highways Act S278 agreement, as confirmed by the Cambridgeshire County Council, acting as Highways Authority.

8.97 In terms of the wider improvements to transport and mobility in the area, it is noted that contributions to the Greater Cambridge Partnership (GCP) A428 Cambridge to Cambourne project is under negotiation for the outline planning application (OPA). It is the view of officers that contributions to this project would be inappropriate, given the extant 1999 outline permission (OPP) and the negligible impact in terms of additional staff and students occupying the Whittle Laboratory, if this permission is granted.

Parking management

8.98 To inform the technical work within the TA, the applicants have undertaken a site-wide car parking occupancy survey and a car and cycle parking occupancy survey in the vicinity of the site, in May 2019. The cycle parking occupancy survey was repeated later in June 2019 to verify the occupancy of a few cycle parking areas around the Whittle Laboratory. The methodology used for the surveys has been accepted by the Highways Authority.

8.99 Based on the surveys, the TA concludes that the demand associated with the Whittle Laboratory extension can be accommodated within the existing car parks in the area and additional cycle parking would be required. The TA submitted with the application sets out the total car parking capacity across the wider West Cambridge campus in May 2019 was of

1,797 spaces, with occupancy survey identifying 1,272 (71%) spaces as being the highest car parking occupancy that occurred during a single hour and demonstrating that spare car parking capacity across the wider campus. Table 3.7 of the TA shows that whilst both car and cycle parking are over capacity at 108% and 103% respectively in the immediate vicinity of the Whittle site, there is residual car parking in the area.

8.100 Further to this assessment, Table 6.15 of the TA demonstrates that within the West Cambridge masterplan, parking areas 15, 18, 20, 23, 41, 49, 50, 51, 59, 60, 61 and 73 have ample spare capacity and can accommodate the majority of the parking requirements for Whittle. This is mainly due to the recently completed Civil Engineering building (ref. 16/1811/FUL) requirements for less 94 spaces than shown in the table, resulting in a cumulative residual capacity in the busiest hour of 76 spaces, in the vicinity of the site. Considering this worst-case scenario, the proposal is for accommodating the car parking spaces required by the Whittle extension through the upgrade of parking area 60.

8.101 Amongst the 23 existing car parking spaces within the Whittle site, only eight spaces are proposed to be retained, therefore with a significant net reduction in car parking spaces. The Highways Authority notes this is below Cambridge's indicative parking standards of 1 car parking space for every 4 staff members, or a total of 19 car parking spaces if assessing the Whittle extension on its own merits. Nevertheless, given the residual car parking capacity across West Cambridge campus and in the immediate vicinity of the application site, the proposed net number of car parking spaces is acceptable. This assessment considers the approach given by Policy 19 of the Local Plan and the need to consider the assessment of the wider campus in proposals resulting on the densification of the site(s), as in the case of this current Whittle Laboratory application. It is noted that the Local Plan parking standards in Policy 82 refer to the maximum, and not the minimum, provision for car parking.

8.102 The net provision of eight car parking spaces include two disabled spaces, which equates to 20% of the total net provision and 5% of the current mode share (55%) of the predicted 74 staff members of the Whittle extension using car as a mean of travelling. This provision is supported and accords with the

requirements of the Cambridge Local Plan. Further to the parking spaces, provisions have been made for a drop-off area near the main entrance of the building.

8.103 The proposal for reducing car parking spaces within the Whittle site aligns with the aims of the Local Plan to reduce private car dependency, and to support the enhancement of sustainable travel to support development. In this sense and having concluded for the overcapacity of the existing cycle parking spaces, the proposal is for a removal of 40 existing cycle spaces, with new on-site provision of 128 cycle parking spaces. This is well above the minimum of 78 spaces required for students and staff, as per the current Cambridge Local Plan standards, and is supported.

8.104 In the view of officers, adequate car parking is retained to meet the needs of future building occupiers in the short to medium term. The approach to car parking provision for the Whittle Laboratory extension accords with the emerging outline strategy of reducing car trips and travel demand management within the wider West Cambridge campus and in its own merits. Approval of this application will not prejudice the Council's position in relation to the ongoing work associated with the OPA (ref. 16/1134/OUT) Transport Assessment.

Airport Safeguarding

8.105 The site is within an area of protected airspace for Cambridge Airport which is required to be kept free of obstruction from tall structures. Following requirements in Policy 37 of the Cambridge Local Plan, consultation was undertaken with the operator of the airport and Ministry of Defence (MOD).

8.106 Cambridge International Airport has examined the application from the airport safeguarding perspective and concluded the proposal does not conflict with the safeguarding criteria and raises no objection to the application. In accordance with the advice offered, a condition requiring details of crane usage is recommended.

Human Health and Residential Amenity

8.107 There is a significant distance of approximately 160m to 170m separating the proposed development from the nearest

residential property at 14 Conduit Head Road to the northwest and 53 Madingley Road to the east. Given the distances involved, the tree belt and Madingley Road, there will be no direct visual impacts, enclosure or over shadowing resulting from the development.

8.108 Pollution from the demolition and construction phases has the potential to affect the amenity of surrounding properties if not mitigated / controlled. In the interests of amenity, standard construction/demolition conditions are recommended, relating to the associated delivery and collection hours, noise / vibration / piling and dust.

Noise and Vibration

8.109 Policy 35 of the Cambridge Local Plan requires developments to demonstrate that no adverse impact from noise and/or vibration will occur to human health and amenity, including from cumulative effects and construction phase. When inevitable, noise impacts should be reduced preferably by high quality acoustic design.

8.110 The new Whittle Laboratory will house the National Centre for Propulsion and Power (NCPP). Potential sources of operational noise include (but are not limited to) the following:

- Noise breakout form new NCPP laboratory facility building extension
- Process-related noise from the NCPP laboratory testing equipment
- Fixed ventilation and other plant / equipment noise emissions including HVAC plant serving the offices – external plant enclosures
- Vehicle movements including servicing deliveries and collections

8.111 Having reviewed the Noise Impact Assessment (NIA) submitted with the application, Environmental Health officers note the predicted noise rating levels and impact assessment indicate that the noise emissions are likely to be acceptable. Furthermore, officers are of the view that the operational noise levels have negligible or no effect on the acoustic character of the area, and no impact on quality of life of residents.

8.112 Nevertheless, design options consider acoustic matters as previously discussed in this report. Environmental Health officers note that as final design is ongoing and not completed, certain assumptions on the NIA (e.g. building façade performance and possible inclusion of pressure release panels to the NCPP Laboratory) will need to be confirmed at detailed design stage. Despite this, officers are confident that acceptable operation noise levels can be achieved either at day or night-time hours by a combination of careful acoustic design and the implementation of a noise and vibration insulation or mitigation scheme. Accordingly, a condition referring to operation noise mitigation scheme is recommended.

8.113 In terms of noise from vehicle movements, officers note the current noise environment around the site is generally dominated by traffic noise from Madingley Road (to the immediate north). Further, Environmental Health officers note that the proposed Whittle extension is approximately 22 to 25m from the Madingley Road carriage way and 10m from JJ Thomson Avenue, and reflected traffic noise is not envisaged in the immediate vicinity of the proposals.

8.114 The servicing arrangements being concentrated to the east of the site contribute to noise being reduced to that area. Environmental Health officers conclude that any changes in general vehicle movements to the development site and any associated vehicular servicing operational noise levels are negligible and that no unacceptable adverse noise impacts are envisaged with the proposed development. Conditions are recommended restricting servicing deliveries and collections to certain day time hours, as a standard practice in Cambridge, and compliance with the Servicing and Operational Management Plan submitted with the application.

Contaminated Land

8.115 A Site Investigation Report comprising a desk study and ground investigation was submitted with the application, seeking to establish the history of the site and including the assessment of ground contamination. The desk study indicates the agricultural use of the site and alterations in the water environment in the area until 1946, when development had occurred to the north and east of the site, principally consisting of housing to the north-east and east, and University of Cambridge buildings to

the north. Later maps and aerial images show the existing Whittle Laboratory and the expansion of educational uses within the West Cambridge camps, with further the expansion/consolidation of farming further to the west and residential further to the north-east and east, a situation which remains similar to date.

8.116 Although records of historical potentially contaminative uses listed for the site include the Whittle Laboratory, no evidence was encountered within the exploratory holes during the investigation, including visual evidence of asbestos containing material (ACM). Further, the report concludes as result of further laboratory analysis that the made ground did not contain elevated concentrations of contaminants exceeding the soil screening criteria for residential end uses, or for a commercial/industrial end use.

8.117 Environmental Health officers are of the view that the Site Investigation Report comprises of a very thorough desk study and an appropriately designed site investigation. Officers are content that the investigation is robust and confirms the findings of the preliminary conceptual model, in that the application site is suitable for use without the need for any further assessment and/or remediation. Nonetheless, conditions relating to unexpected contamination and materials management plan are recommended.

Light Pollution

8.118 The Obtrusive Lighting Report provided with the application concludes that, based on the current modelled design, the exterior lighting installation as proposed is likely to comply with the environmental zone ‘E3’ category of the Institution of Lighting Professionals (ILP) Guidance Notes for the Reduction of Obtrusive Light: GN01 (2011) at nearby receptors.

8.119 Environmental Health officers note that as part of the new Whittle Laboratory development, new external lighting will be required to illuminate the traffic areas outside the building; the courtyard; and the new access road to the east of the development. Furthermore, officers are of the view that the report is comprehensive and the proposals for artificial lighting scheme design meet requirements within Policy 34 of the Cambridge Local Plan, as an unacceptable artificial lighting

impacts on human amenity or quality of life is not envisaged with the proposals. This is on the basis that the proposed lighting strategy is fully implemented and maintained thereafter, which is recommended to be secured by condition.

8.120 During consultation, concerns were raised by neighbours in relation to the light impacts on the continued operation of the Institute of Astrology, at north of Madingley Road. Environmental Health officers note that whilst assessing the proposals, consideration in given to light impacts on human health / quality of life / amenity, as required by planning policies. Nonetheless, officers note that the Obtrusive Lighting Report submitted in support of the application does assess sky glow as a form of light pollution in accordance with ILP guidance for obtrusive lighting. There is compliance with sky glow (Upward Light Ratio) limits, which is predicted as 0% compared with recommended limits between 2.5% (E2 Zone) to 5 % (E3 Zone). The report concludes that that sky glow has been minimised to reflected light from the landscape only, by not including any fittings that light directly upwards.

8.121 Moreover, Environmental Health officers clarify that determining lighting 'environmental zone' classification is a professional judgement. In support of the proposal the Obtrusive Lighting Report states that the site of the new development will be considered a class E3, applicable for a suburban site, with medium district brightness such as in small town centres or a suburban location, due to its proximity to other educational developments in the wider West Cambridge campus. An E2 zone is would apply to a rural location, with low district brightness. The classification of the Whittle Laboratory extension as E3 (suburban) is considered acceptable and reasonable for this site-specific location, in officer's views.

8.122 Whilst noting that the use of motion sensors in external lighting may be considered good practice and energy efficient, the submitted Obtrusive Lighting Report concludes that based on the current modelled design the exterior lighting installation when on is likely to comply with the 'E3' category. Officers note that whilst the assessment does not include light spill from existing external lighting, the contribution is expected to be small, which is considered acceptable. As such officers reiterate that artificial lighting impacts on quality of life / amenity are

unlikely to arise or would have either none or an insignificant level of impact.

Air quality, Odour and Dust

8.123 Cambridge Local Plan Policy 36 requires applicants to demonstrate the proposed development will not lead to significant adverse effects on health, the environment or amenity from polluting or malodorous emissions, or dust or smoke emissions to air. Furthermore, the applications for sensitive-end use must demonstrate these adverse effects will not occur within the proposed development.

8.124 Environmental Health officers note the Transport Assessment submitted with the application to predict an increase of 12 peak hour vehicle movements and deliveries. Nevertheless, the proposed development will lead to a decrease in car parking spaces (albeit to be placed elsewhere within the West Cambridge campus) and an increased cycle provision from 40 to 128 cycle parking spaces to accommodate both staff and students. Furthermore, the proposals include heating and hot water provision from electric sources only with no combustion emissions to air.

8.125 The Cambridge City Council - Air Quality Action Plan 2018 - 2023 (AQAP 2019) measures 36a and 36b state that where there is an intensification of a site and/or new or replacement car park electric vehicle (EV) charge points are required. Based on this and supported by the increase in vehicular movement and further information above, Environmental Health officers have no objections on air quality grounds subject to an Electrical Vehicle (EV) charging point condition being imposed should permission be granted.

Conclusion

8.126 Environmental Health officers note that in the context of the medium and longer term the same high level of protection of the existing amenity of residential properties can be secured by the imposition of the same or similar conditions on the wider Cambridge West OPA (ref. 16/1134/OUT). In its own merits the proposals are considered compliant with Cambridge’s Local Plan. the recommendations by the Environmental Health team

are supported and the relevant conditions are recommended if permission is granted.

9.0 CONCLUSION

Planning Balance

9.1 The NPPF in paragraph 11 sets out a presumption in favour of sustainable development, with proposals that accord with the Development Plan to be approved without delay. The proposed development will provide a high-quality building for research and development functions and is in accordance with the and is in accordance with the existing strategy for West Cambridge set out in Policy 19 of the Local Plan and site allocation M13.

9.2 The development scheme would have dis-benefits of construction related impacts and the removal of a significant number of trees existing on the site. These dis-benefits have been evaluated as part of this report and overall, it is considered that they do not outweigh the benefits that the scheme would bring, which are set out below and which can be mitigated by planning condition.

9.3 Significant economic benefits locally will result from the proposed development, through the employment of 74 members of the Whittle Laboratory staff and academic research benefiting students. The outcome of this enhanced academic facility will enable innovative technology for power and propulsion engines, which when successful will have remarkable effects in society and for the environment.

9.4 Environmentally, the proposed maintenance and management of the existing tree belt will improve not only the local green infrastructure, but also the character of Madingley Road and one of the approaches to the City from the west. In parallel, the West Cambridge campus will be marked in this route, framed by the gateway created by the emerging Cavendish laboratory and Whittle, in this important junction with JJ Thompson Avenue. Despite the loss of some of the existing trees, the amenity value of those remaining and to be replanted, is expected to improve, with the implementation of a Woodland Management and Maintenance Plan and a Landscape Maintenance and Management Plan.

9.5 Socially, the improvements the improvements for the local cycling network with the implementation of a two-way cycleway along Clerk Maxwell Road will benefit not only the occupiers of the proposed development, but users in the wider campus and in the vicinity of the site. This will have a direct impact on the active travel and well-being of people living and working in Cambridge City.

10.0 RECOMMENDATION

APPROVE subject to the following conditions:

1. The development shall be carried out in accordance with the following approved drawings and technical documents:

EM01262-SAW-XX-XX-DR-C-0302_P01
EM01262-SAW-XX-XX-DR-C-0303_P01
EM01262-TMN-WH-01-DR-L-000001_P2
EM01262-TMN-WH-01-DR-L-000002_P3
EM01262-TMN-ZZ-00-DR-L-000000_P1
EM01262-TMN-ZZ-00-DR-L-000002_P6
EM01262-TMN-ZZ-00-DR-L-000003_P5
EM01262-TMN-ZZ-00-DR-L-000004_P5
EM01262-TMN-ZZ-00-DR-L-000005_P5
EM01262-TMN-ZZ-00-DR-L-000006_P5
EM01262-TMN-ZZ-00-DR-L-000007_P5
EM01262-TMN-ZZ-00-DR-L-000008_P5
EM01262-TMN-ZZ-ZZ-DR-L-100001_P5
EM01262-TMN-ZZ-ZZ-DR-L-100004_P2
EM01262-TMN-ZZ-ZZ-DR-L-100007_P2
EM01262-TMN-ZZ-ZZ-DR-L-100010_P5
EM01262-TMN-ZZ-ZZ-DR-L-100011_P4
EM01262-TMN-ZZ-ZZ-DR-L-100012_P4
EM01262-TMN-ZZ-ZZ-DR-L-100013_P2
EM01262-TMN-ZZ-ZZ-DR-L-100014_P2
EM01262 - GAL - WH - 01 - DR - A - 40030_Rev3
EM01262 - GAL - WH - 02 - DR - A - 40040_Rev3
EM01262 - GAL - WH - B1 - DR - A - 40010_Rev3
EM01262 - GAL - WH - GF - DR - A - 40020_Rev3
EM01262 - GAL - WH - GF - DR - A - 40021_Rev3
EM01262 - GAL - WH - RF - DR - A - 40050_Rev4
EM01262 - GAL - WH - RF - DR - A - 40051_Rev3
EM01262 - GAL - WH - XX - DR - A - 40000_Rev5
EM01262 - GAL - WH - XX - DR - A - 40001_Rev3

EM01262 - GAL - WH - XX - DR - A - 40002_Rev3
EM01262 - GAL - WH - XX - DR - A - 40003_Rev4
EM01262 - GAL - WH - XX - DR - A - 40004_Rev3
EM01262 - GAL - WH - XX - DR - A - 42010_Rev3
EM01262 - GAL - WH - XX - DR - A - 42020_Rev3
Woodland Management and Maintenance Plan Ref 19-1151 V3

Reason: To facilitate any future application to the Local Planning Authority under Section 73 of the Town and Country Planning Act 1990.

2. Prior to the commencement of site clearance, a pre-commencement site meeting shall be held and attended by the site manager, the arboricultural consultant and Local Planning Authority Tree Officer to discuss details of the approved Arboricultural Method Statement.

Reason: To satisfy the Local Planning Authority that trees to be retained will not be damaged during any construction activity, including demolition, in order to preserve arboricultural amenity in accordance with section 197 of the Town and Country Planning Act 1990 and Cambridge Local Plan 2018 Policy 71: Trees.

3. No development shall commence until the applicant, or their agents or successors in title, has implemented a programme of archaeological work which has been secured in accordance with a written scheme of investigation (WSI) which has been submitted to and approved by the local planning authority in writing. For land that is included within the WSI, no development shall take place other than under the provisions of the agreed WSI, which shall include:
a) the statement of significance and research objectives;
b) The programme and methodology of site investigation and recording and the nomination of a competent person(s) or organisation to undertake the agreed works;
c) The timetable for the field investigation as part of the development programme;
d) The programme and timetable for the analysis, publication & dissemination, and deposition of resulting material

Reason: To secure satisfactory mitigation measures and to conserve the interest of the historic environment evidence in compliance with paragraph 199 of the NPPF and Policy 61 of the Cambridge Local Plan.

4. Prior to commencement and in accordance with BS5837 2012, a phased tree protection methodology in the form of an Arboricultural Method Statement (AMS) and Tree Protection Plan (TPP) shall be submitted to the local planning authority for its written approval, before any tree works are carried and before equipment, machinery or materials are brought onto the site for the purpose of development (including demolition).

   In a logical sequence the AMS and TPP will consider all phases of construction in relation to the potential impact on trees and detail tree works, the specification and position of protection barriers and ground protection and all measures to be taken for the protection of any trees from damage during the course of any activity related to the development, including supervision, demolition, foundation design, storage of materials, ground works, installation of services, erection of scaffolding and landscaping.

   Reason: To satisfy the Local Planning Authority that trees to be retained will be protected from damage during any construction activity, including demolition, in order to preserve arboricultural amenity in accordance with section 197 of the Town and Country Planning Act 1990 and Cambridge Local Plan 2018 Policy 71: Trees.

5. No development shall commence (including any pre-construction, demolition, enabling works or piling), until a written report, regarding the demolition / construction noise and vibration impact associated with this development, has been submitted to and approved in writing by the Local Planning Authority. The report shall be in accordance with the provisions of BS 5228:2009 Code of Practice for noise and vibration control on construction and open sites and include full details of any piling and mitigation measures to be taken to protect local residents from noise and or vibration. The development shall be carried out in accordance with the approved details only.

Due to the proximity of this site to existing residential premises and other noise sensitive premises, impact pile driving is not recommended.

Reason: To protect the amenity of nearby properties (Cambridge Local Plan 2018 policy 35)

6. No development shall commence until a programme of measures to minimise the spread of airborne dust from the site during the demolition / construction period has been submitted to and approved in writing by the Local Planning Authority. The development shall be implemented in accordance with the approved scheme.

Reason: To protect the amenity of nearby properties (Cambridge Local Plan 2018 policy 36)

7. Prior to commencement of development on site, or within 6 months of commencement, a BRE issued Design Stage Certificate demonstrating that the development has achieved a BREEAM rating of 'excellent' shall be submitted to, and approved in writing by, the Local Planning Authority.

Reason: In the interests of reducing carbon dioxide emissions and promoting principles of sustainable construction and efficient use of buildings, as set out by Cambridge Local Plan 2018 Policy 28 and Supplementary Planning Document 'Greater Cambridge Sustainable Design and Construction', January 2020.

8. Prior to importation or reuse of material for the development (or phase of) a Materials Management Plan (MMP) shall be submitted to and approved in writing by the Local Planning Authority. The MMP shall:

a) Include details of the volumes and types of material proposed to be imported or reused on site
b) Include details of the proposed source(s) of the imported or reused material
c) Include details of the chemical testing for ALL material to be undertaken before placement onto the site
d) Include the results of the chemical testing which must show the material is suitable for use on the development

e) Include confirmation of the chain of evidence to be kept during the materials movement, including material importation, reuse placement and removal from and to the development.

All works will be undertaken in accordance with the approved document.

Reason: To ensure that no unsuitable material is brought onto the site in the interest of environmental and public safety in accordance with Cambridge Local Plan 2018 Policy 33.

9. Prior to the erection of any cranes on site details of any intended crane usage shall be submitted to and approved by the Local Planning Authority.

Reason: To ensure the safe movement of aircraft and the operation of Cambridge Airport (Cambridge Local Plan 2018 policy 37).

10. No above ground works shall commence until a surface water drainage scheme for the site, based on sustainable drainage principles, has been submitted to and approved in writing by the local planning authority. The scheme shall subsequently be implemented in full accordance with the approved details prior to first occupation.

The scheme shall be based upon the principles within the agreed Flood Risk and Drainage Strategy Report prepared by Smith and Wallwork Engineers (ref: EM01262-SAW-ZZ-ZZ-RP-S0009) dated 2 April 2020 and shall also include:

a) Detailed drawings of the entire proposed surface water drainage system, including levels, gradients, dimensions and pipe reference numbers;
b) Full details of the proposed attenuation and flow control measures;
c) Details of overland flood flow routes in the event of system exceedance, with demonstration that such flows can be appropriately managed on site without increasing flood risk to occupants;
d) Full details of the maintenance/adoption of the surface water drainage system;

e) Measures taken to prevent pollution of the receiving surface water. The drainage scheme must adhere to the hierarchy of drainage options as outlined in the NPPF PPG.

Reason: To ensure that the proposed development can be adequately drained and to ensure that there is no increased flood risk on or off site resulting from the proposed development (Cambridge Local Plan 2018 Policies 31 and 32)

11. Prior to the installation of any internal and external operational machinery, plant and equipment (to include any mechanical and electrical building services, electricity transformers, emergency generators, ventilation systems and air source heat pumps) a detailed noise and vibration insulation scheme and implementation of other noise mitigation/control measures as appropriate in order to mitigate / control and reduce to a minimum the level of noise / vibration emissions from the said building / machinery / plant / equipment and to protect the amenity of neighbouring properties, shall be submitted to and approved in writing by the Local Planning Authority.

The said noise and vibration insulation / mitigation scheme shall include but not exhaustively, consideration of the following:
a) sound reduction indices (R) of the airborne sound insulation properties / performance (in octave and 1/3 octave frequencies as appropriate) for each external building façade construction element - walls / panels / screens, roofs, windows and doors including any acoustic door sets. The sound reduction index performance for each element shall be certified by official "third party" laboratories according to relevant international and or national standards.
b) details and calculations of the airborne sound insulation performance of the external composite building façades having regard to representative internal noise levels and use
c) detailed architectural construction and engineering specifications and drawings (with sections) for each composite element of the external building façade
d) operational noise data for any plant and equipment and the airborne sound reduction performance of any acoustic / sound silencers, screens or enclosures
e) ventilation provision
f) administrative/management noise mitigation controls, as appropriate

The noise and vibration insulation / mitigation scheme shall be in accordance with and shall demonstrate compliance with the principles, operational noise / vibration levels / limits, outline noise insulation / mitigation measures and recommendations detailed in the submitted 'Cambridge University Whittle II Laboratory: Noise Impact Assessment (Report ref. EM01262-MXF-WH-XX-RP-Y-150000, 29th November 2019 - Max Fordham LLP Acoustics Team)'.

The development shall be constructed / completed and operated in strict accordance with the building / machinery / plant / equipment noise and vibration insulation / mitigation scheme as approved. The approved scheme shall be maintained and retained thereafter.

Reason: To protect the amenity of nearby properties (Cambridge Local Plan 2018 policy 35)

12. No development shall commence, with the exception of below ground works and the erection of the 'relocated switch gear room' showing in drawing EM01262-GAL-WH-XX-DR-A-40003_Rev4, until a plan has been submitted to and approved in writing by the Local Authority detailing the proposed specification, number and locations of internal and / or external bird and bat boxes on the new buildings and retained trees. The installation shall be carried out and subsequently maintained in accordance with the approved plans.

Reason: to provide ecological enhancements for protected species on the site.

13. Prior to the commencement of the development hereby approved, with the exception of below ground works and the erection of the 'relocated switch gear room' showing in drawing EM01262-GAL-WH-XX-DR-A-40003_Rev4, full details including samples of all the materials to be used in the construction of the external surfaces of buildings, which includes external features such as non-masonry walling systems; bricks; windows, cills, headers and surrounds; doors and entrances; external metal work, balustrades, rain water goods, edge junction and coping details; colours and surface finishes, shall be submitted to and approved in writing by the local planning authority. This may consist of a materials schedule, large-scale drawings and/or samples. Development shall be carried out in accordance with the approved details.

    Sample panels (minimum of 1.5x1.5m) of the facing materials to be used shall be erected to establish the detailing of materials shall be agreed in writing with the local planning authority.

    The quality of finish and materials incorporated in any approved sample panels, which shall not be demolished prior to completion of development, shall be maintained throughout the development

    Reason: To ensure that the appearance of the external surfaces is appropriate and that the quality and colour of the detailing of the facing materials maintained throughout the development. (Cambridge Local Plan 2018 Policies 55 and 57).

14. Within 12 months of the commencement of development a scheme for the provision of two-way cycleway along Clerk Maxwell Road shall be submitted to and approved by the local planning authority. The approved scheme shall then be implemented in accordance with the approved plans prior to occupation of the approved development or within an alternative timeframe agreed in writing by the Planning Authority.

    Reason: In order that adequate mitigation is provided for the transport impact of the development in accordance with Cambridge Local Plan 2018 Policy 81.

15. Prior to the installation of any electrical services, an electric vehicle charge point scheme demonstrating the provision of allocated car parking spaces with dedicated electric vehicle charging, shall be submitted to and approved in writing by the Local Planning Authority. For the 8 parking spaces as detailed on site in the submissions, the scheme shall include:

a) Three slow electric vehicle charge points with a minimum power rating output of 7kW
b) One rapid electric vehicle charge point enabling 80% charge in one hour or under
c) Additional passive electric vehicle charge provision of the necessary infrastructure including capacity in the connection to the local electricity distribution network and electricity distribution board, as well as the provision of cabling to parking spaces for the remaining 4 car parking spaces to facilitate and enable the future installation and activation of additional active electric vehicle charge points as required
d) The electric vehicle charge points shall be designed and installed in accordance with BS EN 61851 or as superseded.

The electric vehicle charge point scheme as approved shall be fully installed / implemented prior to the first occupation and maintained and retained thereafter.

Reason: In the interests of encouraging more sustainable modes and forms of transport and to reduce the impact of development on local air quality, in accordance with the National Planning Policy Framework (NPPF) paragraph 105, 110, 170 and 181, Policy 36 - Air Quality, Odour and Dust of the Cambridge Local Plan (2018) and Cambridge City Council's adopted Air Quality Action Plan (2018).

16. Details of the biodiverse (green) roof(s) shall be submitted to and approved in writing by the Local Planning Authority prior to the installation of the green roof(s). Details of the green roof(s) shall include means of access for maintenance, plans and sections showing the make-up of the sub-base to be used and include the following:
a) Roofs can/will be biodiverse based with extensive substrate varying in depth from between 80-150mm,

b) Planted/seeded with an agreed mix of species within the first planting season following the practical completion of the building works (the seed mix shall be focused on wildflower planting indigenous to the local area and shall contain no more than a maximum of 25% sedum,
c) The biodiverse (green) roof shall not be used as an amenity or sitting out space of any kind whatsoever and shall only be used in the case of essential maintenance or repair, or escape in case of emergency,
d) The biodiverse roof(s) shall be carried out strictly in accordance with the details so approved and shall be maintained as such thereafter,
e) Where solar panels are proposed, bio-solar roofs should be incorporated under and in-between the panels. An array layout will be required incorporating a minimum of 0.75m between rows of panels for access and to ensure establishment of vegetation,
f) A management/maintenance plan approved in writing by the Local Planning Authority,
g) Evidence of installation shall be required in photographic form prior to handover.

Reason: To ensure the development provides the maximum possible provision towards water management and the creation of habitats and valuable areas for biodiversity. (Cambridge Local Plan 2018; Policy 31).

17. Prior to the commencement of installation of any roof mounted equipment, full details of all roof top plant and solar panels and/or photovoltaic cells, including type, dimensions, materials, location, fixing, etc. shall be submitted to and approved in writing by the local planning authority. The development shall be carried out in accordance with the approved details.

Reason: To ensure that the external appearance of the buildings is maintained throughout the development (Cambridge Local Plan 2018 policies 55 and 57).

18. Prior to construction of the rain gardens, details of the structures shall be submitted and approved in writing by the local planning authority. The details shall include dimensioned plans and cross sections through the rain gardens, drainage details, soils, mulch, and planting.

Reason: In the interests of visual amenity and to ensure that suitable hard and soft landscape is provided as part of the development. (Cambridge Local Plan 2018; Policies 55, 57 and 59).

19. Details of the irrigation system for the roof terrace and trough planting should be submitted prior to completion. Details should include water delivery system to planting, water source, automatic control system, times and amounts of water to planting beds, system maintenance details (to be included within the Management Plan).

Reason: In the interests of visual amenity and to ensure that suitable hard and soft landscape is provided as part of the development. (Cambridge Local Plan 2018; Policies 55, 57 and 59).

20. Prior to first use, details of signage and materials in relation to signage to be located in the areas defined as signage zones on the approved elevations (drawing numbers EM01262-GAL-WH-XX-DR-A-42010 Rev3 and EM01262-GAL-WH-XX-DR-A-42020 Rev3) shall be submitted to and approved in writing by the local planning authority. The development shall be carried out in accordance with the approved material sample and signage details.

Reason: To ensure that the appearance of the external surfaces is appropriate (Cambridge Local Plan 2018 policies 55 and 57).

21. Details for the long-term maintenance arrangements for the surface water drainage system (including all SuDS features) to be submitted to and approved in writing by the Local Planning Authority prior to the first occupation of any building.

The submitted details should identify runoff sub-catchments, SuDS components, control structures, flow routes and outfalls. In addition, the plan must clarify the access that is required to each surface water management component for maintenance purposes. The maintenance plan shall be carried out in full thereafter.

Reason To ensure the satisfactory maintenance of drainage systems that are not publically adopted, in accordance with the requirements of paragraphs 163 and 165 of the National Planning Policy Framework.

22. Prior to first occupation or the bringing into use of the development, hereby permitted, the soft landscape specification shall be submitted to and approved in writing by the local planning authority. Soft landscape specification shall include green/biodiverse roofs, planting in planters on terrace, ground preparation including decompaction, soil handing and spreading, cultivation and other operations associated with good practice plant and grass establishment and an implementation programme.

Reason: In the interests of visual amenity and to ensure that suitable hard and soft landscape is provided as part of the development. (Cambridge Local Plan 2018; Policies 55, 57 and 59).

23. Prior to first occupation or the bringing into use of the development, hereby permitted, a landscape maintenance and management plan, including long term design objectives (minimum 25 years), management responsibilities and maintenance schedules for all landscape areas shall be submitted to and approved by the local planning authority in writing. The Plan must provide specification for meadow establishment and ongoing management cutting regimes and collection of arisings. The Landscape Maintenance and Management Plan shall be carried out as approved.

Any trees or plants that, within a period of five years after planting, are removed, die or become in the opinion of the local planning authority, seriously damaged or defective, shall be replaced as soon as is reasonably practicable with others of species, size and number as originally approved.

Reason: In the interests of visual amenity and to ensure that suitable hard and soft landscape is provided as part of the development. (Cambridge Local Plan 2018; Policies 55, 57 and 59).

24. Prior to occupation of the building hereby approved, full details of a scheme of public art shall be submitted to and approved in writing by the Local Planning Authority. The approved scheme for public art shall be carried out in accordance with the approved details not later than 6 months after the first occupation of the building.

Reason: In the interest of creating successful, high quality, attractive environments. (Cambridge Local Plan 2018; policy 56).

25. No occupation of the building shall commence until a Travel Plan has been submitted to and approved in writing by the Local Planning Authority. The Travel Plan shall specify the methods to be used to discourage the use of the private motor vehicle and the arrangements to encourage use of alternative sustainable travel arrangements such as public transport, car sharing, cycling and walking. The Travel Plan shall be implemented as approved upon the occupation of the development and monitored in accordance with details to be agreed in writing by the Local Planning Authority.

Reason: In the interests of encouraging sustainable travel to and from the site, in compliance with Cambridge Local Plan 2018 policies 80 and 81.

26. Prior to first occupation of the development hereby permitted, fire hydrants shall be installed and fully operational in accordance with a scheme for the provision of fire hydrants that has been submitted to and approved in writing by the Local Planning Authority.

Reason: To ensure the provision of adequate water supply infrastructure to protect the safe living and working environment for all users and visitors in accordance with Cambridge Local Plan policies 56, 57 and 85.

27. Prior to the occupation, or within 6 months of occupation, a certificate following a post-construction review, shall be issued by an approved BREEAM Assessor to the Local Planning Authority, indicating that the approved BREEAM rating has been met. In the event that such a rating is replaced by a comparable national measure of sustainability for building design, the equivalent level of measure shall be applicable to the proposed development.

    Reason: In the interests of reducing carbon dioxide emissions and promoting principles of sustainable construction and efficient use of buildings, in accordance with Cambridge Local Plan 2018 Policy 28 and Supplementary Planning Document 'Greater Cambridge Sustainable Design and Construction', January 2020.

28. If unexpected land contamination is encountered whilst undertaking the development, works shall immediately cease on site until the Local Planning Authority has been notified and the contamination has been fully assessed and a remediation strategy / scheme has been submitted to and approved in writing by the Local Planning Authority.

    Thereafter the development shall not be implemented otherwise than in accordance with the approved remediation scheme.

    Reason: To ensure that any unexpected contamination is rendered harmless in the interests of environmental and public safety in accordance with Cambridge Local Plan, 2018 - Policy 33: Contaminated land.

29. Save for collections from and deliveries to the approved use, the 'rating level' (as defined in BS 4142: 2014 - Methods for rating and assessing industrial and commercial sound - or any successor document) of all sources of sound / noise emmissions, from and attributable to operation of the site and approved use when collectively measured at the property boundary of any premises / property (for avoidance of doubt this is the actual property boundary inclusive of external amenity areas such as property / garden boundaries or similar) shall not exceed the Operational Sound / Noise Rating Levels on any day, in the tables and explanation notes as set out in section 2.4 and 2.5 in the submitted 'Cambridge University Whittle II Laboratory: Noise Impact Assessment (Report ref. EM01262-MXF-WH-XX-RP-Y-150000, 29th November 2019 - Max Fordham LLP Acoustics Team)'

Following written notification from the Local Planning Authority (LPA) that it is their view that the above Operational Sound / Noise Rating Levels are being exceeded the applicant shall undertake a noise impact assessment (methodology and approach shall be submitted to and approved in writing by the LPA in advance) to assess compliance with the said levels. The noise impact / compliance scheme assessment shall be commenced within 21 days of the notification, unless a longer time is approved in writing by the LPA. The applicant shall provide to the LPA a copy of the impact / compliance scheme assessment within a time period to be agreed.

Noise rating levels shall be measured directly or derived from a combination of measurement and calculation using propagation corrections. All noise measurements and rating levels shall be carried out in accordance with the requirements of BS 4142: 2014 and BS 7445- Parts 1 to 3: Description and measurement of environmental noise, or as superseded. (just moved)

If the said assessment confirms non-compliance with the operational noise rating levels the applicant shall submit in writing to the LPA a noise mitigation scheme employing the best practical means to ensure compliance with the said operational noise rating levels. Following the written approval by the LPA of the scheme and a timescale for its implementation the scheme shall be activated forthwith and thereafter retained.

Reason: To protect the amenity of nearby properties (Cambridge Local Plan 2018 policy 35)

30. No construction or demolition work shall be carried out and no plant or power operated machinery / equipment operated other than between the following hours: 0800 hours and 1800 hours on Monday to Friday, 0800 hours and 1300 hours on Saturday and at no time on Sundays, Bank or Public Holidays, unless otherwise previously agreed in writing with the Local Planning Authority and in accordance with agreed emergency procedures for deviation.

Reason: To protect the amenity of the adjoining properties. (Cambridge Local Plan 2018 policy 35)

31. All servicing collections / dispatches from or deliveries to the development site hereby approved during the operational phase shall only be permitted / undertaken between the following hours:

- 0800 hrs and 1800 hrs Monday to Friday
- 0900 hrs and 1300hrs on Saturdays
- No collections or deliveries on Sundays and any Bank / Public Holiday

Reason: To protect / safeguard the health and quality of life (amenity) of existing premises from noise in accordance with paragraphs 170 e) and 180 a) of the National Planning Policy Framework (NPPF), 2019 and Policy 35: Protection of human health and quality of life from noise and vibration of the Cambridge Local Plan, 2018.

32. The development hereby approved shall be operated in accordance with the submitted 'Servicing and Operational Management Plan: For the Department of Engineering On the West Cambridge Site, Madingley Road, Cambridge - Submitted as part of the Whittle Extension Planning Application Issue 2.1- December 2019- University of Cambridge'.

Reason: To protect / safeguard the health and quality of life (amenity) of existing premises from noise in accordance with paragraphs 170 e) and 180 a) of the National Planning Policy Framework (NPPF), 2019 and Policy 35: Protection of human health and quality of life from noise and vibration of the Cambridge Local Plan, 2018.

33. The external artificial lighting strategy / scheme for the development hereby approved shall be constructed, completed and implemented and maintained / retained thereafter, fully in accordance with the submitted 'Whittle Laboratory Project, OBTRUSIVE LIGHTING REPORT, December 2019 (Max Fordham LLP - EM01262-MXF-IN-XXRP-E-310000, Issue - P02 13/12/2019)'

Reason: To limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation in accordance with the National Planning Policy Framework (NPPF) paragraph 180 c) and Policy 34: Light pollution control of the Cambridge Local Plan, 2018.

34. The energy strategy for the approved buildings shall be implemented in accordance with the ground source heat pump driven cluster approach set out in the Whittle Laboratory Energy Statement, Max Fordham (EM01262-MXF-ZZ-XX-RP-N-430000 P01 December 2019). The development shall be implemented in accordance with the approved Strategy and shall thereafter be retained and remain fully operational in accordance with a maintenance programme, which shall be submitted to and agreed in writing by the local planning authority.

No review of this requirement on the basis of grid capacity issues can take place unless written evidence from the District Network Operator confirming the detail of grid capacity and its implications has been submitted to, and accepted in writing by, the local planning authority. Any subsequent amendment to the level of renewable/low carbon technologies provided on the site shall be in accordance with a revised scheme submitted to and approved in writing by, the local planning authority.

Reason: In the interests of reducing carbon dioxide emissions, promoting principles of sustainable construction and efficient use of buildings, in accordance with Cambridge Local Plan 2018 Policy 28 and Supplementary Planning Document 'Greater Cambridge Sustainable Design and Construction', January 2020.

35. No hard-standing areas shall be constructed until the works have been carried out in accordance with the surface water strategy so approved unless otherwise agreed in writing by the Local Planning Authority.

Reason: To prevent environmental and amenity problems arising from flooding (Cambridge Local Plan 2018 Policies 31 and 32).

36. All hard and soft landscape works shall be carried out in accordance with the approved details, and to a reasonable standard in accordance with the relevant recommendation of the appropriate British Standard or other recognised code of good practice. The works shall be carried out prior to the occupation of any part of the development or in accordance with the programme agreed by the local planning authority in writing. The maintenance shall be carried out in accordance with the approved schedule.

Reason: To ensure provision, establishment, and maintenance of a reasonable standard of landscaping in accordance with the approved design. (Cambridge Local Plan 2018; Policies 55, 57 and 59)

37. The approved tree protection methodology will be implemented throughout the development and the agreed means of protection shall be retained on site until all equipment, and surplus materials have been removed from the site. Nothing shall be stored or placed in any area protected in accordance with approved tree protection plans, and the ground levels within those areas shall not be altered nor shall any excavation be made without the prior written approval of the local planning authority. If any tree shown to be retained is damaged, remedial works as may be specified in writing by the local planning authority will be carried out.

Reason: To satisfy the Local Planning Authority that trees to be retained will not be damaged during any construction activity, including demolition, in order to preserve arboricultural amenity in accordance with section 197 of the Town and Country Planning Act 1990 and Cambridge Local Plan 2018 Policy 71: Trees.

38. If any tree shown to be retained on the approved tree protection methodology is removed, uprooted, destroyed or dies within five years of project completion, another tree shall be planted at the same place and that tree shall be of such size and species, and shall be planted at such time, as may be specified in writing by the local planning authority.

Reason: To satisfy the Local Planning Authority that arboricultural amenity will be preserved in accordance with section 197 of the Town and Country Planning Act 1990 and Cambridge Local Plan 2018 Policy 71: Trees.

39. Any trees or plants provided as part of any landscape scheme which, within a period 5 years of planting date, die, are removed or become seriously damaged or diseased, shall be replaced in the next planting season with other of similar size and species as those originally planted, unless the Local Planning Authority gives written consent to any variation.

Reason: In the interest of the amenity of future residents and other likely users of the green corridor and open spaces (Cambridge Local Plan 2018; Policies 55, 57 and 59).

INFORMATIVE: Archaeological Works
Partial discharge of the Archaeological Works condition can be applied for once the fieldwork at Part c) has been completed to enable the commencement of development. Part d) of the condition shall not be discharged until all elements have been fulfilled in accordance with the programme set out in the WSI.

INFORMATIVE: Considerate Contractor Scheme
New development can sometimes cause inconvenience, disturbance and disruption to local residents, businesses and passers-by. As a result the City Council runs a Considerate Contractor Scheme aimed at promoting high standards of care during construction. The City Council encourages the developer of the site, through its building contractor, to join the scheme

and agree to comply with the model Code of Good Practice, in the interests of good neighbourliness. Information about the scheme can be obtained from The Considerate Contractor Project Officer in the Planning Department (Tel: 01223 457121).

INFORMATIVE: Demolition/Construction noise/vibration report

The noise and vibration report should include:

a) An assessment of the significance of the noise impact due to the demolition/construction works and suitable methods for this are to be found in BS 5228:2009 Part 1 Annex E - Significance of noise effects. It is recommended that the ABC method detailed in E.3.2 be used unless works are likely to continue longer than a month then the 2-5 dB (A) change method should be used.

b) An assessment of the significance of the vibration impact due to the demolition/construction works and suitable methods for this are to be found in BS 5228:2009 Part 2 Annex B - Significance of vibration effects.

If piling is to be undertaken, then full details of the proposed method to be used is required and this should be included in the noise and vibration reports detailed above.

Following the production of the above reports a monitoring protocol should be proposed for agreement with the Local Planning Authority. It will be expected that as a minimum spot checks to be undertaken on a regular basis at site boundaries nearest noise sensitive premises and longer-term monitoring to be undertaken when:

- Agreed target levels are likely to exceeded
- Upon the receipt of substantiated complaints
- At the request of the Local Planning Authority / Environmental Health following any justified complaints.

Guidance on noise monitoring is given in BS 5228:2009 Part 1Section 8.4 - Noise Control Targets and in Annex G - noise monitoring.

A procedure for seeking approval from the Local Planning Authority (LPA) in circumstances when demolition/construction works need to be carried out at time outside the permitted hours. This should incorporate a minimum notice period of 10 working days to the Local Planning Authority and 5 working days to neighbours to allow the Local Planning Authority to consider the application as necessary. For emergencies the Local Planning Authority should be notified but where this is not

possible the Council's Out of Hours Noise service should be notified on 0300 303 8389.
Contact details for monitoring personnel, site manager including out of hours emergency telephone number should be provided.

INFORMATIVE: Construction Dust
Any condition requiring a construction related dust mitigation / management plan or details should reference and have regard to various national and industry best practical technical guidance such as:

- Guidance on the assessment of dust from demolition and construction, version 1.1 (IAQM, 2016)
- Guidance on Monitoring in the Vicinity of Demolition and Construction Sites, version 1.1 (IAQM, 2018)
- London Good Practice Guide: Noise & Vibration Control for Demolition and Construction - The London Authorities Noise Action Forum, July 2016
- The Control of Dust and Emissions during Construction and Demolition -supplementary planning guidance, (Greater London Authority, July 2014).

INFORMATIVE: Definition of 'Superstructure'
A condition attached to this permission has the trigger / time restriction 'Prior to any above ground superstructure works commencing'. The council considers the definition of 'superstructure' as having its normal or dictionary meaning, which is: 'the part of a building above its foundations'.

INFORMATIVE: Public Sewer Connection
Notification of intention to connect to the public sewer under S106 of the Water Industry Act Approval and consent will be required by Anglian Water, under the Water Industry Act 1991. Contact Development Services Team 0345 606 6087.

INFORMATIVE: Protection of Existing Assets
A public sewer is shown on record plans within the land identified for the proposed development. It appears that development proposals will
affect existing public sewers. It is recommended that the applicant contacts Anglian Water Development Services Team for further advice on this matter. Building over existing public sewers will not be permitted (without agreement)
from Anglian Water.

INFORMATIVE: Building Near to a Public Sewer
No building will be permitted within the statutory easement width of 3 metres from the pipeline without agreement from Anglian Water. Please contact
Development Services Team on 0345 606 6087.

INFORMATIVE: Adoption of Sewers
The developer should note that the site drainage details submitted have not been approved for the purposes of adoption. If the developer wishes to have
the sewers included in a sewer adoption agreement with Anglian Water (under Sections 104 of the Water Industry Act 1991), they should contact our Development Services Team on 0345 606 6087 at the earliest opportunity.
Sewers intended for adoption should be designed and constructed in accordance with Sewers for Adoption guide for developers, as supplemented by Anglian Water's requirements.

INFORMATIVE: Green Roofs
All green roofs should be designed, constructed and maintained in line with the CIRIA SuDS Manual (C753) and the Green Roof Code (GRO).

INFORMATIVE: Removal and Disposal of Waste
The Environment Agency, Brampton Environment District, Bromholme Lane, Brampton, Huntington, Cambs, PE28 4NE, Tel no: 01480414581 for advice regarding, the removal and disposal of waste and adherence with Agency pollution prevention guidelines. The waste produced on the site during demolition / construction will be subject to the general Duty Of Care under the Environmental Protection Act 1990 and is likely to be subject to control under the Waste Management Licensing Regulations 2011 and the Hazardousl Waste Regulations 2005.

INFORMATIVE: Dry Watercourses
Pollution Control Surface water and groundwater bodies are highly vulnerable to pollution and the impact of construction activities. It is essential that the risk of pollution (particularly during the construction phase) is considered and mitigated appropriately. It is important to remember that flow within the watercourse is likely to vary by season and it could be dry at certain times throughout the year. Dry watercourses should not be overlooked as these watercourses may flow or even flood following heavy rainfall.

INFORMATIVE: Oil Storage Tanks
Notwithstanding the provision of the Town and Country Planning General Permitted Development Order 1995 (or any order revoking or re-enacting that Order), any oil storage tank shall be sited on an impervious base and surrounded by oil tight bunded walls with a capacity of 110% of the storage tank, to enclose all filling, drawing and overflow pipes. The installation must comply with Control of Pollution Regulations 2001, and Control of Pollution (Oil Storage) Regulations 2001. Site operators should ensure that there is no possibility of contaminated water entering and polluting surface or underground waters.

INFORMATIVE: Parking Areas
Surface water from roads and impermeable vehicle parking areas shall be discharged via trapped gullies. Prior to being discharged into any watercourse, surface water sewer or soakaway system, all surface water drainage from lorry parks and/or impermeable parking areas for fifty car park spaces or more and hardstandings should be passed through an oil interceptor designed compatible with the site being drained. Roof water shall not pass through the interceptor. Site operators should ensure that there is no possibility of contaminated water entering and polluting surface or underground waters.

INFORMATIVE: Surface Water Drainage and Infiltration Sustainable Drainage Systems (SuDS)
All surface water from roofs shall be piped direct to an approved surface water system using sealed downpipes. Open gullies should not be used.

Only clean, uncontaminated surface water should be discharged to any soakaway, watercourse or surface water sewer.

The water environment is potentially vulnerable and there is an increased potential for pollution from inappropriately located and/or designed infiltration (SuDS). We consider any infiltration (SuDS) greater than 2.0 m below ground level to be a deep system and are generally not acceptable. All infiltration SuDS require a minimum of 1.2 m clearance between the base of infiltration SuDS and peak seasonal groundwater levels. All need to meet the criteria in our Groundwater Protection:

Principles and Practice (GP3) position statements G1 to G13 which can be found here: https://www.gov.uk/government/collections/groundwater-protection.

In addition, they must not be constructed in ground affected by contamination and if the use of deep bore soakaways is proposed, we would wish to be re-consulted. The proposals will need to comply with our Groundwater protection position statements G1 and G9 to G13.

INFORMATIVE: De Watering
There have been changes to the licensing process for de-watering purposes. A provision of the Water Act 2003 was that abstraction of water for de-watering purposes would require an abstraction licence. This is provision is now being implemented and we are inviting applications from existing abstractors from January 2018. There will be a transitional period where abstractors will have up to two years to apply for a licence of a previously exempt activity. When the 2-year application period has closed the Environment Agency can take up to a further 3 years to determine any application.

More information on this and how to apply for a de-watering licence can be found on our website using the below link: https://www.gov.uk/guidance/apply-for-a-new-abstractionlicence-for-a-currently-exempt-abstraction.