

Application Number	16/1811/FUL	Agenda Item	
Date Received	11th October 2016	Officer	John Evans
Target Date	10th January 2017		
Ward	Newnham		
Site	Land Rear Of Cape Building 9 J J Thomson Avenue Cambridge CB3 0FA		
Proposal	Full planning permission for 4376sqm of D1 (Academic) floorspace, along with external landscape, cycle parking, temporary parking area and associated infrastructure including new service road connecting to existing entrance from Clerk Maxwell Road.		
Applicant	Chancellor, Masters and Scholars of the University of Cambridge		

<p>SUMMARY</p>	<p>The development accords with the Development Plan for the following reasons:</p> <ol style="list-style-type: none"> 1. The proposal is in accordance with Policy 18 of the emerging Local Plan which supports 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 for the eastern side of the campus. 3. There will be no significant adverse visual impact from or to neighbouring residential properties on the eastern side of Clerk Maxwell Road. 4. Noise and amenity impacts arising from the development can be addressed by imposition of appropriate conditions.
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A.1 BACKGROUND

Existing West Cambridge Site

- A.1 The application site falls within the West Cambridge Site, a major new academic campus undertaken by the University of Cambridge. The wider campus covers 66 Hectares situated between Madingley Road to the north and the M11 to the west. The site area is wholly within proposals site 7.06 of the Cambridge Local Plan 2006 and site M13 of the emerging Local Plan.
- A.2 An extant 1999 masterplan has been partially implemented. This related to a scheme of 248,272 sq m floor space in total. The principal roads through the site have been implemented along with numerous key buildings including Physics of Medicine, the Cavendish Laboratory's 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. (See Appendix 2 –masterplan as implemented).

Future Strategy

- A.3 Policy 18 of the emerging Cambridge Local Plan (which is currently under examination) supports the principle of significant densification of the West Cambridge site, subject to provision of a revised site wide masterplan that takes an 'integrated and comprehensive approach to development'. This would include making more efficient use of land, increasing opportunities to meet employment need, enabling a different approach to place making, and provision of more shared social spaces and other ancillary support services to enhance the vibrancy of the area.
- A.4 The draft policy supports land uses on the site for (D1) educational uses, associated sui generis research establishments and academic research institutes, and commercial research (B1(b), where it will support knowledge transfer and/or open innovation. Small scale community

facilities, amenities, shops and student accommodation are also supported to enhance vibrancy.

- A.5 An application for a new outline planning application for the West Cambridge Site was submitted in June 2016. (See appendix 3: illustrative masterplan). The outline application is still under determination to resolve key issues regarding landscape and visual impact, transport, drainage, trees, environmental and amenity concerns. A single package of amended information will be submitted in March for full consultation. It is anticipated that the outline application will be presented to Planning Committee in July/August 2017.
- A.6 The proposed densified West Cambridge development would have a total floorspace of 500,280 sq m (by 2031). This is broken down into 257,900sqm academic and 210,386 sq m commercial floorspace. Phase 1 (2021), which includes the application proposal, would provide 284,310 sq m, composed of 167,159 sq m of academic floorspace and 92,386 sq m of commercial floorspace.

Context for separate full planning application

- A.7 This site falls within the red line boundary of the wider West Cambridge outline application. The reason it is being brought forward ahead of the outline is because the Civil Engineering Building (CEB) is partly funded through the wider UK Collaboration for Research in Infrastructure and Cities (UKCRIC) and the Engineering and Physical Sciences Research Council (EPSRC), with match funding from Cambridge University. The terms of this funding requires the expenditure commitment in 2017/18 with the planning outcome secured at the start of 2017.
- A.8 For this reason, this application will need to be assessed ahead of the outline permission which is currently under determination. Provided there is full scrutiny of the application, prior determination will not in the view of officers prejudice determination of the masterplan.

1.0 SITE DESCRIPTION/AREA CONTEXT

Outline layout

- 1.1 The application proposal forms a part of the University's 'key phase 1' developments at West Cambridge. The application site is situated on the eastern side of JJ Thomson Avenue to the rear of the Centre for Advanced Photonics and Electronics (CAPE). It falls within 'East Forum Key Place', 'East Green Link' and 'Clerk Maxwell Road site edge' within the Design Guide which accompanies the current West Cambridge outline application.

CEB Application Site

- 1.2 The CEB forms one part of a chain of proposed modular buildings on the eastern side of the site, with heavily, more intensive uses located to the north and Madingley Road. This series of new flexible workshop buildings is part of an 'inset masterplan' developed by the Department of Engineering and is part of the overall outline masterplan application 16/1134/OUT.
- 1.3 The CEB is located on an existing tarmac car park to the rear of the Roger Needham Building and CAPE. To the immediate north and south are adjacent car park areas divided with relatively young tree planting. Further north is the existing Park and Cycle facility which is accessed off Clerk Maxwell Road (CMR). Beyond this is the Whittle Laboratory, a complex of relatively low buildings set in grass landscaping.
- 1.4 To the east of the proposed CEB site is a landscaped bund containing various native self-seeded trees and vegetation, beyond which is CMR. On the eastern side of CMR are residential properties within The Lawns and Perry Court. To the immediate north of Perry Court is the Cocks and Hens Lawn Tennis Club, an area of Protected Open Space.
- 1.5 The West Cambridge Site is not within a Conservation Area. The edge of the West Cambridge Conservation Area begins to the immediate east of the Lawns and Perry Court.

2.0 THE PROPOSAL

- 2.1 Full planning permission is sought for the erection of a new building for the next phases of the relocation of the Department of Engineering from its existing site on Fen Causeway. The CEB will be a purpose built centre for world leading research in the built environment focussing on the application and development of advanced sensor technology in construction, to promote better quality and safety.
- 2.2 The proposed CEB will have four levels of accommodation, including the basement, with a footprint of 4,500 sq m. This is part of an overall strategy to provide 100,000 sq m of academic floor space in the eastern character area of the revised West Cambridge inset masterplan. It is the first major building to be constructed as part of the Department of Engineering's long term strategy to move all activities to West Cambridge. The building will accommodate 115 employees and 86 post-doctoral students.
- 2.3 The building has a rectangular shaped footprint with a width of approximately 58m and depth of 33m. The building stands 13.9m to the parapet and has four rooftop flues which rise a further 6.6m.
- 2.4 The materials of construction consist of a curtainwall which incorporates glazed and thermochromic panels, grey anodised aluminium hook on rain screen panels with frameless glazed windows integrated into the timber framed curtainwall. The roof level accommodates a green/blue roof system with an integrated PV panel array.
- 2.5 General vehicle access for car parking (including accessible spaces) will be from JJ Thomson Avenue. 51 car parking spaces will be provided on a temporary basis behind the Whittle Laboratory Building to mitigate the car parking loss from the site of the CEB.
- 2.6 The servicing access for the proposed building utilises the existing entrance to the park and cycle facility off CMR. This will be enlarged to accommodate vehicles along the western side of the woodland bund. The CEB building will typically have one small delivery each day with approximately six large heavy goods vehicle deliveries per year.

- 2.7 The development includes provision for 144 cycle parking spaces. The cycle spaces will be located within 72 double cycle stands within 2 cycle shelters.
- 2.8 An EIA Screening Opinion has determined that the current application on its own is not EIA development.

Amended Plans

- 2.9 Amended plans have been received providing new and additional information as follows:
- Applicant response to key planning issues.
 - Response to scale and massing concerns raised by the Council, including 3 additional verified views and axonometric plans.
 - Revised Transport Assessment and itemised response from PBA.
 - Drainage response, Smith and Wallwork Engineers letter.
 - Applicant response to third party representations.
 - Applicant response to Access issues.
 - Revised planting plan.
- 2.10 The application is accompanied by the following supporting information:
1. Design Statement
 2. Transport Assessment
 3. Servicing and Operational Management Plan
 4. Public Art Statement
 5. Archaeology Statement
 6. S106 Heads of Terms
 7. Ecology Statement
 8. Utilities Statement
 9. Operational Waste Management Details
 10. Air Quality Statement
 11. Drainage Strategy

12. External Lighting Report
13. Construction Environmental Management Plan
14. Noise and Vibration Impact Assessment
15. Site Investigation Report
16. Sustainability Statement
17. Energy Statement
18. Tree Survey Report

3.0 SITE HISTORY

Reference	Description	Outcome
97/0961/OP	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
99/0042/FUL	Erection of three storey building to form Computer Sciences Faculty with associated parking and landscaping. (William Gates Building).	Approved
C/04/0614	Erection of part two part three storey building for academic research "purposes, pursuant to C/97/0961/OP. (CAPE building).	Approved
13/1564/FUL	Construction of an annexe to the Centre for Advances Photonics and Electronics (CAPE) Building	Approved

16/1134/OUT Outline planning permission with all matters reserved is sought for up to 383,300m² of development comprising up to 370,000m² of academic floorspace (Class D1 space), commercial/research institute floorspace. **Submitted June 2016, currently under determination**

4.0 PUBLICITY

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

5.0 POLICY

5.1 See Appendix 1 for full details of Central Government Guidance, Cambridge Local Plan 2006 policies, Supplementary Planning Documents and Material Considerations.

5.2 Relevant Development Plan policies

PLAN		POLICY NUMBER
Cambridge Plan 2006	Local	3/1 3/2 3/4 3/6 3/7 3/9 3/11 3/12 3/13 3/15 4/4 4/9 4/11 4/13 4/14 4/15 7/1 7/2 7/3 7/4 7/5 7/6 8/2 8/4 8/5 8/6 8/10 8/16 10/1

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

<p>Central Government Guidance</p>	<p>National Planning Policy Framework March 2012</p> <p>National Planning Policy Framework – Planning Practice Guidance March 2014</p> <p>Circular 11/95</p>
<p>Supplementary Planning Guidance</p>	<p>Sustainable Design and Construction (May 2007)</p> <p>Cambridgeshire and Peterborough Waste Partnership (RECAP): Waste Management Design Guide Supplementary Planning Document (February 2012)</p> <p>Planning Obligation Strategy (March 2010)</p> <p>Public Art (January 2010)</p>
<p>Material Considerations</p>	<p><u>City Wide Guidance</u></p> <p>Arboricultural Strategy (2004)</p> <p>Cambridge Landscape and Character Assessment (2003)</p> <p>Cambridge City Nature Conservation Strategy (2006)</p> <p>Criteria for the Designation of Wildlife Sites (2005)</p> <p>Cambridge and South Cambridgeshire Strategic Flood Risk Assessment (November 2010)</p> <p>Strategic Flood Risk Assessment (2005)</p> <p>Cambridgeshire Quality Charter for Growth (2008)</p>

	<p>Cambridge City Council - Guidance for the application of Policy 3/13 (Tall Buildings and the Skyline) of the Cambridge Local Plan (2006) (2012)</p> <p>Cambridge Walking and Cycling Strategy (2002)</p> <p>Protection and Funding of Routes for the Future Expansion of the City Cycle Network (2004)</p> <p>Cambridgeshire Design Guide For Streets and Public Realm (2007)</p> <p>Cycle Parking Guide for New Residential Developments (2010)</p> <p>Air Quality in Cambridge – Developers Guide (2008)</p>
	<p><u>Area Guidelines</u></p> <p>Conduit Head Road Conservation Area Appraisal (2009)</p> <p>West Cambridge Conservation Area Appraisal (2011)</p>

5.4 Status of Proposed Submission – Cambridge Local Plan

Planning applications should be determined in accordance with policies in the adopted Development Plan and advice set out in the NPPF. However, after consideration of adopted plans and the NPPF, policies in emerging plans can also be given some weight when determining applications. For Cambridge, therefore, the emerging revised Local Plan as published for consultation on 19 July 2013 can be taken into account, especially those policies where there are no or limited objections to it. However it is likely, in the vast majority of instances, that the adopted development plan and the NPPF will have considerably more weight than emerging policies in the revised Local Plan.

For the application considered in this report, the following policies in the emerging Local Plan are of relevance:

Policy 18 West Cambridge

- 5.5 Cambridge City Council and the University of Cambridge have agreed a Statement of Common Ground to inform the Local Plan examination. There are now no areas of disagreement between the parties in relation to Policy 18 and its supporting text.

6.0 CONSULTATIONS

Cambridgeshire County Council (Highways Development Management)

- 6.1 The level of additional traffic proposed to service the site and accessing the car park would not be demonstrable as causing severe impact upon CMR, either in terms of link capacity or safety.
- 6.2 There have been personal injury accidents on CMR, two within the road, adjacent to the park and cycle access, and two at the junction. One of the two within CMR involved a collision between a cyclist and a parked car which would be addressed by the introduction of mandatory cycle lanes, the other a failure to give way between two cyclists. The two at the junction are a failure to give way, and a van and a cycle travelling in the same direction colliding.
- 6.3 The overall level of junction accidents, given the flows on Madingley Road, would not be considered extraordinary, nor is there a pattern.

Cambridgeshire County Council (Transport Team)

Comments on application as amended

- 6.4 Sufficient information has now been provided to enable the County Council to lift its holding objection subject to mitigation measures.

Updated car parking occupancy survey results

- 6.5 The proposed reduction in car parking will not have a detrimental effect. Additional surveys undertaken on October 2016 have shown that there were 100 spaces unoccupied in the area surrounding the CEB. The aspirations of the travel plan are to reduce car use which the development is in accordance.

Cycle Parking

- 6.6 A cycle parking accumulation exercise has been undertaken and demonstrates that based on anticipated arrival and departure profile the 144 cycle parking spaces will be adequate.

Junction modelling

- 6.7 The Transport Assessment states that there will be around 6 large vehicle movements per year accessed from CMR. The number of vehicles would not have a significant impact.
- 6.8 Lockable bollards are proposed for the access off CMR. It is essential that these are kept locked to prevent access by unauthorised vehicles. The applicant has confirmed this will be the case.
- 6.9 Around one small delivery will occur per day, the majority of which will access the site via JJ Thomson Avenue. This will not have a significant impact. The servicing strategy is accepted for this development only. The wider West Cambridge masterplan servicing strategy is yet to be agreed.

Travel Plan

- 6.10 The Travel Plan information provided in the Transport Assessment (TA) has been revised to reflect the most recent travel survey results. The Travel Plan gives an initial target for reducing car driver mode sharer for 19.8% down to 17.3%. This is accepted as an initial target but should be reviewed in more detail when the interim Travel Plan is submitted prior to occupation of the development and then again after the baseline surveys.

Mitigation

- 6.11 To improve connectivity an enhanced uncontrolled pedestrian and cyclist crossing is proposed on Madingley Road between Observatory Drive and CMR. This is accepted subject to detailed design. Although this application does not propose this junction to be fully signalised, this will need to be explored as part of the outline application.

City Deal

- 6.12 The CEB will be considered within the mitigation package for the overall masterplan application.

Comments on application as submitted

- 6.13 Further information and clarification is required to enable the County Council to fully comment on the application and therefore a holding objection is recommended at this stage.

Car park occupancy

- 6.14 As part of the Initial Phase of outline development, the University is seeking consent to a total of 2,571 car parking spaces. This provision is 579 spaces lower than the 1999 Consented level of car parking spaces. It should be noted that this has not been finally agreed with CCC yet as further information and justification is required as part of the outline application.

Pedestrian and Cycle Facilities

- 6.15 The signal controlled junction of Madingley Road and Lady Margaret Road is missing a pedestrian phase. This would be a key pedestrian route to the site. The TA should look into what possible improvements could be made here to assist with pedestrians accessing the site.
- 6.16 A plan should be provided showing how the proposals for this site relate to the pedestrian and cycle plans in the outline application submitted in June 2016 to ensure that this development ties in with the aspirations of the masterplan.

Updated traffic data

- 6.17 Manual Classified Turning Counts were commissioned by the University in June 2015. This was when there were ongoing road works on Madingley Road. It is understood that since then additional traffic surveys have been carried out in October 2016. The most recent surveys should be used in the TA.

Updated accident data

- 6.18 The Accident data referred to in the TA only goes up to May 2015. This is not accepted and the most recent data should be and updated before this is fully reviewed.

Updated car parking occupancy survey results

- 6.19 An existing car parking occupancy survey was undertaken in March 2015, this is welcomed however this is just one snapshot in time. The TS states that further surveys have been undertaken in Autumn 2016. These results should be provided to demonstrate that the original survey is robust and representative.
- 6.20 This work identifies that in March 2015, of the 410 car parking spaces located to the east of the Roger Needham Building, there were 113 spaces unoccupied – i.e., over 25% of the available car parking spaces were unused. Further information is also required detailing whether the buildings on site were fully occupied at the time of the surveys.

Highways England

- 6.21 No objections.

Environmental Health

Comments on application as amended

- 6.22 Initial Environmental Health comments concluded that additional information and clarifications were required in relation to air quality and operational noise before final detailed comments could be made and an informed decision could be reached.
- 6.23 To avoid operational noise from giving rise to significance adverse impact on quality of life amenity and to ensure that any

other remaining impacts are mitigated and reduced to a minimum acceptable level it is concluded that a comprehensive suite of detailed, precise and effective operational noise and vibration conditions are required. These would also ensure that the operational noise levels are not exceeded in the long term.

- 6.24 The additional information and clarifications provided for air quality and operational noise are acceptable. The applicant has confirmed that the CEB will be able to operate under these controls and requirements.

Comments on application as submitted

- 6.25 On balance Environmental Health have no objection in principle to this application, providing the following environmental health issues are carefully considered and appropriately controlled by good design and the imposition of conditions to protect the health and quality of life (amenity) of existing residential properties:

- Construction Phase Environmental Impacts
- Noise and Vibration – Operational
- Air Quality – Operational
- Odour / Fume / Dust – Operational
- Artificial Lighting – Operational
- Contaminated Land

- 6.26 As the first major building to be constructed as part of the Department of Engineering's masterplan to move all activities of the Department to West Cambridge, it is agreed that it is an important benchmark for the design of future new buildings on the campus.

- 6.27 It is important to note that the recently submitted West Cambridge Site outline application is being considered as Environmental Impact Assessment (EIA) development under planning regulations. This has required the submission of an Environmental Statement (ES) to ensure that the potential and likely significant effects on the environment of a proposed development are fully considered and assessed (together with the economic and social benefits of the development) as part of the decision making process before the planning permission is determined.

- 6.28 In response to the outline application concerns were raised about the robustness and acceptability of the ES noise, air quality and artificial lighting significance of impact assessments that have been undertaken and mitigation proposed. It is understood that these concerns are been considered and an updated ES is likely to be submitted for consideration.
- 6.29 It is important that the cumulative environmental impacts associated with the emerging West Cambridge Site masterplan outline are considered and mitigated as necessary in a holistic, coordinated, integrated and site wide approach. However, it is acknowledged that this stand-alone full application needs to be considered on its own merits.

Urban Design and Conservation team

Comments on application as amended

- 6.30 Previously requested verified views allow assessment of the scale and massing of the scheme from a number of agreed viewpoints.
- 6.31 The Urban Design Team has reviewed the accompanying methodology and submitted verified views:
- Verified View 01, Clerk Maxwell Road Junction, The Lawns, Position A
 - Verified View 02, Outside No15, Wilberforce Road
 - Verified View 03, Clerk Maxwell Road Junction, The Lawns, Position B
 - Verified View 04, University of Cambridge Maintenance Unit, Laundry Farm
- 6.32 These views provide an assessment of the scheme against the 1999 Masterplan heights, the emerging Outline (16/1134/OUT) as well as the existing situation. These views demonstrate that the scale and massing of the proposed scheme is acceptable from near and longer range views. Accordingly the scheme is supported in design terms.

Comments on application as submitted

- 6.33 It is not possible to comment on the proposed development and the additional information set out below will be required in order

to provide comments. Verified views are needed to demonstrate the impact of the proposed scale and massing from agreed viewpoints.

- 6.34 The extant permission established a masterplan (MJP Masterplan) for the West Cambridge development site and has defined the main movement and circulation routes along with a number of new facilities for various University Departments. The MJP Masterplan also established the approach to scale and massing across the development and is a relevant consideration in determining the acceptability of the proposals.
- 6.35 The proposals for UKCRIC are 13.9m when measured to the top of the main building and are therefore 2.8m taller than the MJP Masterplan heights. At a total height of 20.5m to the top of the flues, the proposals are 9.4m taller than the height of 11.1m identified in the MJP Masterplan. The MJP Masterplan does allow for taller elements that add visual interest to the skyline and given that the proposed flues have been conceived as more sculptural forms it is considered that they perform this role.
- 6.36 The impact of the flues along with the overall scale and massing of the development needs to be demonstrated in the verified views to allow us to make an informed assessment and conclude whether a building of this scale in this location is acceptable.
- 6.37 The outline submission 16/1134/OUT identifies 15m maximum heights along the eastern site boundary with additional height of 8m allowed for 'lightning conductors, weather vanes, exhaust flues, telecommunications equipment and aerials' (Parameter Plan 5: Maximum Building Heights). At 13.9m to the top of the main building, the proposals are 1.1m lower than the proposed parameter plan heights of 15m. The flues are 6.6m tall but are lower than the maximum allowable height of 8m identified in the submitted Parameter Plan 5 for application 16/1134/OUT. Whilst the proposals are consistent with the parameter plans submitted as part of outline application 16/1134/OUT, these are being reviewed given the concern about visual impact on longer views and views from nearby streets.

Landscape Team

Comments on application as amended

- 6.38 Additional information provided for this application is welcomed and officers find the proposals acceptable.
- 6.39 Requested verified views from the east and south of the proposed building enable assessment of the visual impact of the scheme. The Landscape Team has reviewed the accompanying methodology and submitted verified views:
- Verified View 01, Clerk Maxwell Road Junction, The Lawns
 - Verified View 02, Outside No15, Wilberforce Road
 - Verified View 03, Clerk Maxwell Road Junction, The Lawns
 - Verified View 04, University of Cambridge Maintenance Unit, Laundry Farm
- 6.40 The views provide an assessment of the scheme against the 1999 Masterplan heights, the emerging outline (16/1134/OUT) as well as the existing situation and demonstrate that the scale of the proposed scheme is acceptable.
- 6.41 We welcome the amended planting arrangement and species list and find the planting proposals acceptable. Tree loss has been kept to an acceptable level with loss concentrated around the enlarged access off CMR.

Comments on application as submitted

- 6.42 Generally the landscape team are supportive of the proposals, particularly as the building occupies an already developed part of the West Cambridge site. Currently the development site is a car park to the east side of the Roger Needham Building and the Graphene Centre. The site also benefits from a substantial woodland buffer between it and CMR which currently successfully screens the car park from view of the residential properties.
- 6.43 The woodland buffer planting along CMR is an extremely important area of landscape and is crucial to maintain in a healthy condition. It is in need of management in the very near future to prevent it from becoming more overcrowded resulting

in suppression of the viable semi-mature tree planting contained within it. We require a management plan for this woodland buffer planting as well as the tree and woodland stock across the West Cambridge site as a whole.

Historic England

- 6.44 Historic England consider the overall scale, massing, design and materials of the proposed CEB building to be contextually acceptable in relation to the setting of the West Cambridge Road Conservation Area and other nearby designated heritage assets, in accordance with guidance in the NPPF. No objections should your Authority be minded to approve the application for planning permission.
- 6.45 Historic England remains concerned that the considerable increase in scale, massing and height of the proposed masterplan development would result in harm to the setting of a substantial number of heritage assets. The single building proposed would be contextually acceptable. If, as envisaged in the masterplan, the flues are intended to create interest at skyline level, this aim is achieved.

Senior Sustainability Officer (Design and Construction)

- 6.46 The development proposed is acceptable subject to the imposition of conditions in relation to energy standards.
- 6.47 The proposal incorporates a number of sustainable design and construction features and it is clear that the overall design of the proposal has very much been led by the Engineering Department.
- 6.48 The sustainability measures are supported and it is clear that the energy brief has very challenging targets for this development. The Sustainability Statement also provides a comparison of the strategy being taken for this scheme against the bespoke Sustainability Assessment Matrix (SAM) that has been developed as part of the outline application for the wider West Cambridge site.
- 6.49 It is also noted that the energy strategy that accompanies the outline application for the wider West Cambridge site includes a site wide district heating scheme. The Sustainability Strategy

for this proposal does note that some site wide infrastructure will be incorporated into the project including empty ducts for future systems such as district energy systems. As such, the energy strategy for this scheme is supported.

Environment Agency

6.50 No objections subject to drainage and contaminated land related conditions and informatives.

Sustainable Drainage Officer

Comments on application as amended

6.51 Further discussion with the applicant demonstrated that due to the difference in levels it would not be possible to combine multiple drainage discharge points from the site. However a maintenance strategy detailing the maintenance requirements for this arrangement has been provided.

6.52 There had also been concerns over the proposed phasing of the site. At the time of the submission no detailed information had been received on what plots would require strategic drainage enhancements in order to accommodate the agreed runoff rate and attenuation volumes across the site. This phasing plan has now been completed for the drainage network. It confirms that the CEB site does not require site wide strategic drainage alterations in order to proceed and that all the attenuation for the 1 in 100 year storm event plus a 40% allowance for climate change can be dealt with on plot. This is in accordance with the overall outline drainage strategy.

Comments on application as submitted

6.53 There are three surface water discharge points all discharging at 1l/s, these should be combined into one surface water outfall point of 3l/s to minimise the risk of a flow control device blocking.

6.54 Following discussions regarding the outline application of the site it has come to our attention that site enabling works in relation to the surface water drainage are required over a much larger area than indicated in the submission before any individual parcel can come forward. This includes alterations to

the pond to increase the attenuation storage provisions. This has not been indicated in the submission therefore further clarification is required.

Cambridgeshire County Council (Flood and Water Team)

6.55 No objections, although further clarification on the surface water drainage features and methodology are required.

Cambridgeshire County Council (Archaeology)

6.56 The site was subject to a programme of archaeological investigation in mitigation of the development of the Roger Needham, Cape and William S Gates buildings to the west (HER ECB1015). Consequently further investigation is not required in connection with this development proposal.

6.57 We would have no objection to the planning application and we would advise that a condition requiring a scheme of archaeological investigation is not necessary.

Cambridgeshire Quality Panel (Meeting of 10 August 2016)

6.58 The CEB proposals were reviewed by the Cambridgeshire Quality Panel against the four 'C's' of Community, Climate, connectivity and Character on the 10 August 2016. Overall the proposals for UKCRIC were considered to be acceptable and in particular the energy performance of the building but Panel felt that further thought was needed regarding the social spaces. Full comments are contained within Appendix 4.

Disability Consultative Panel (Meeting of 26 July 2016)

6.59 The scheme was generally considered successful. Some concerns remain regarding the future intention to have a centralised reception 'hub' and the distances disabled visitors may need to travel between buildings but it is hoped this arrangement would be carefully managed.

Cambridge City Council Access Officer

6.60 That there is no Blue Badge Parking near the building, 5% of their parking must be Blue Badge. Panel asked for a building

reception desk. When entering the building it is a long way to either lift.

- 6.61 There should be a wheelchair accessible shower room with changing bench. There may be glare issues with glazing and internal floors. Double doors would be best to be asymmetrical.

Public Art Officer

- 6.62 A site wide approach for public art delivery as outlined in the public art statement is supported.
- 6.63 Thought should however be given to how any art proposal could integrate into the building design and or surrounding landscapes in the future. Opportunities may well arise during the build process as to how the art would become fully embedded in any design. These should be recorded and considered as part of a site wide strategy in the near future.

Natural England

- 6.64 No comments. The application is unlikely to result in significant impacts on statutory designated nature conservation sites or landscapes.

Cambridgeshire Constabulary (Designing our Crime Officer)

- 6.65 No comments on the application submission. Further discussions can take place with the applicant if planning permission is granted.

Ministry of Defence (Cambridge Airport Safeguarding)

- 6.66 No objections.
- 6.67 The above responses are a summary of the comments that have been received. Full details of the consultation responses can be inspected on the application file.

7.0 REPRESENTATIONS

Comments on application as amended

7.1 The owners/occupiers of the following addresses have made representation on the additional/amended material:

2 Hedgerley Close

7.2 The representation can be summarised as follows:

- The new verified views are not reassuring.
- The buildings along the periphery of the site should link it to the adjacent neighbourhood in a positive way.
- Verified View 02 has tree cover obscuring the building.
- Winter views are less screened and very different.
- Continued objection to the use of CMR for deliveries. It is a key cycleway, so this is not appropriate.
- The building will draw all of its water supplies from local supplies.

Comments on application as submitted

7.3 The owners/occupiers of the following addresses have made representations:

2 Hedgerley Close
7 Wilberforce Road
3 The Lawns
5 The Lawns
7 The Lawns
10 The Lawns
12 The Lawns
4 Perry Court
6 Perry Court
15 Perry Court

7.4 The representations can be summarised as follows:

Concerns in principle

- It is unacceptable that that a major individual building application is made without resolution of the comments made on the outline planning application.

Design Issues

- The size and height of the building is not in keeping with the surrounding area and is not appropriate for the edge of the site in terms of protecting residential amenity.

Amenity concerns

- Object to the inclusion of accent lighting provided by uplighters on the chimneys.
- The proposed building is very urban whereas the neighbourhood is suburban or even rural. Illuminating the chimneys will emphasize this difference.
- Verified View (02) shows the roof profile will be visible at all times of the year.
- Unnecessary light pollution, which will be exacerbated by the additional or further modules over time.
- The need for a permanent access onto CMR is queried. The increase in traffic should be accommodated within the site on the JJ Thomson Avenue access.
- There will be an increase in noise and disturbance to neighbours.
- New pedestrian crossing to the astronomy site could create a complicated possibly unsafe junction.
- The noise assessment does not take account of wind direction.

Access matters

- The transport proposals do not provide safe road use for cyclists.
- Deliveries from CMR are unacceptable.

Drainage

- The building needs to incorporate adequate soak away provision.
- The building has no provision for use of rainwater or grey rainwater harvesting systems.

Clerk Maxwell Road Residents Association (CMRRA)

Comments on application as amended

- 7.5 The funding issue is a matter for the applicant and the application is still significantly premature.
- 7.6 The revised documents have been reviewed and all of CMRRA's major objections and proposed conditions stand.
- 7.7 The visual impact of the proposal has not considered the views of immediate neighbours sufficiently.
- 7.8 The winter scene overall has very limited protection from the mass, size, overshadowing and visual impact of the proposed building. Any new building closer to the edge of the site should be proportionally lower than the existing buildings so that the built skyline is not further increased from neighbouring properties.
- 7.9 Highway comments previously raised still stand.
- 7.10 The acoustic insulation is only to the interior of the building and not the exterior where there is only a 20cm wall and doors compared to the 70cm interior full wall. Any decibel limits for noise impact from the proposed building should be specified at the site edge and not at the edge of CMR or neighbouring properties.

Comments on Application as originally submitted

Comments on the principle of development

- 7.11 In principle CMRRA support the development of a world class university site, which Engineering will be a part.

- 7.12 CMRRA has already made extensive comments on the outline application (16/1134/OUT) and many of those objections apply to the application proposal. These include representations from Historic England, Madingley Parish Council and internal City Council consultees.
- 7.13 The application proposal is premature ahead of the new masterplan which is eventually agreed for the wider campus. Many statutory consultees are objecting to the overall masterplan and are suggesting it should be amended. Approving the detailed application ahead of the outline masterplan may set a precedent for developments elsewhere in the area and prejudice the masterplan framework.
- 7.14 The consultation process was flawed. The views of residents on the use of CMR for deliveries has not been integrated into the proposals.

Design Issues

- 7.15 The size and height of the proposed building is not in keeping with the surrounding area and is not appropriate for the edge of the site.
- 7.16 The CAPE building is already visible from CMR with an unattractive skyline created by two additions to the roof. The proposed building will be much closer to CMR and therefore more obvious and less screened. Buildings nearer to the edge of the site should be proportionately lower.
- 7.17 The north and south elevations show the building to be considerably higher than nearby existing trees, in the case of the flues over 10m higher.
- 7.18 Overall building height, including any protrusions, needs to be restricted at the edge of the site through the masterplan. It is essential that existing trees and hedgerows are retained.
- 7.19 Visuals within the Design and Access Statement are inconsistent in terms of flues.

Transport and site access

- 7.20 The transport arrangement does not provide a safe road for cyclists.
- 7.21 All access to the proposed CEB should be from within the site, accessed off Madingley Road and not CMR. CMR is a residential road and a designated cycle route which is already busy and dangerous. The outline application proposes a dedicated cycle route along CMR, but the proposed new accesses would compromise this objective. The extant masterplan did not propose any accesses onto CMR.
- 7.22 CMR already suffers from congestion and high density parking from commuters avoiding the Park and Ride Facilities and visitors to West Cambridge. Use of access point 'I-J' identified on the outline masterplan is unclear. The applicants transport assessment is not impartial and is not fit for purpose.

Deliveries

- 7.23 If deliveries are so infrequent (6 per year) a dedicated servicing access appears unnecessary. Appropriate access points should be designed through the masterplan and CEB application.
- 7.24 The scale of the plan and its environmental consequences are opposed.
- 7.25 Use of the current car park entrance on CMR, or any other suggested accesses points along CMR for deliveries are opposed.

Car parking

- 7.26 CMR suffers from cars parked by users of the West Cambridge Site. Inadequate provision is made to meet existing needs. The masterplan provides a total of 4,390 car parking spaces in 2031 which is only a 40% increase on the original provision. In the first phase of development just 2,571 spaces are proposed which is 579 spaces lower than the extant 1999 permission. The assumption that all 86 post doctorate student will cycle to work seems unrealistic.

Amenity Issues

- 7.27 There will be an increase in noise and disturbance to neighbours. The building should be sited further away from residential areas. The masterplan should require special conditions for buildings near the edge of the site specifically near to existing and planning residential areas. These should include noise restrictions and height restrictions including chimneys and flues.
- 7.28 The 'sound containment box' design has thinner walls on the east side facing residential properties. All roof top plant should be housed in soundproof containers to avoid nuisance to neighbours.
- 7.29 The background noise data makes no reference of weather conditions, in part particular, wind direction. On calm days CMR is generally a low noise area.
- 7.30 Appendix shoes that from 08:00 to 18:00 on a quiet week the sound level is less than 40Db 30% of the time, therefore the background noise level taken, 47 Db, is not representative.
- 7.31 The noise assessment is based on three activities (cement mixing, jack hammers, beam shakers) but over the life of the building there will certainly be different activities. The planning should be subject to all future activities being of an acceptable noise level.
- 7.32 Accent lighting will cause light spillage, is out of context and will be exacerbated over time.
- 7.33 CMR suffers from being used as a parking place for food vans whose customers work on the West Cambridge site. These vans should be provided within car parking on the site.

Drainage and water

- 7.34 The building does not have provision for rainwater reuse or grey water systems.

Planning conditions

- 7.35 Any approval must be subject to conditions covering construction phase methods, hours of access and use of the completed building, noise (maximum decibel level), boundary landscaping and general conditions protecting residential amenity.
- 7.36 The planning conditions should clearly state that no construction traffic will use CMR for access or car parking; strict controls for access and delivery times and a plan to minimise noise during construction. The servicing and operational management plan shall not be varied without public scrutiny.
- 7.37 The planning application should make a binding commitment to the future noise levels versus the existing levels and the hours of operation of any potentially noisy activities. There should be a planning condition that all unloading would take place within the building with the acoustic doors closed. Any further need for emergency generators must be conditioned.

Grantchester Parish Council

- 7.38 Refusal recommended until a decision on the outline plans for the site as a whole are available.
- 7.39 Scale and massing of the proposal is excessive.
- 7.40 It is the forerunner to many more buildings on what is planning to be a major new development.
- 7.41 It breaks all precedents in height and massing and will be visible from some of the walks around Grantchester, especially the 'balk', the historic path that leads round the ancient field of Grantchester.
- 7.42 The above representations are a summary of the comments that have been received. Full details of the representations can be inspected on the application file.

8.0 ASSESSMENT

8.1 From the consultation responses and representations received and from my inspection of the site and the surroundings, I consider that the main issues are:

1. Principle of development
2. Context of site, design and external spaces (and impact on heritage assets)
3. Residential amenity
4. Highway safety
5. Car and cycle parking
6. Renewable energy and sustainability
7. Drainage
8. Disabled access
9. Refuse arrangements
10. Public Art
11. Third party representations
12. Planning Obligations (s106 Agreement)

Principle of Development

Current 2006 Local Plan and 1999 Masterplan

- 8.2 Development for University needs will be permitted on the West Cambridge Site, during the local plan period and beyond in accordance with Cambridge Local Plan 2006 policy 7/6 (West Cambridge). Further development which accords with the provisions of the masterplan will be permitted. The broad principle of the application proposal is therefore in accordance with the extant policy 7/6.
- 8.3 In terms of the extant 1999 masterplan, the proposed site falls within the original Design Guidelines Plot C, which states that the buildings should generally be between 8.5 and 12.0m above finished ground level (corresponding to two and three storeys for academic and research uses). Whilst the indicative layout in the 1999 masterplan identified the application site to be used as car parking, the accompanying ES considered the impact of two to three storeys across the eastern side of the site up to the landscaped bund boundary with CMR.
- 8.4 A variation in roof line was encouraged under the 1999 masterplan in order to create interest, and this may include roof

features which extend above the 12m height. Whilst the proposed building is taller at 13.9m, it is approximately the same height as CAPE which was approved earlier in 2013. The overall height of the application proposal is very similar to neighbouring buildings and in that context the principle of the development is not a significant departure from the design principles of the 1999 masterplan. Its acceptability as a separate full planning application therefore turns on its visual impact, particularly from the residential properties to the east along CMR, which is discussed in the relevant design subsections below.

Draft Local Plan Policy 18 and outline Parameter Plans as submitted

- 8.5 The parameter plans submitted as part of the outline application (latest December 2016 revision still under review) will fix the key principles for the development. The Parameter Plans are:
- Development Building Zones 01
 - Land Use Parameter Plan 02
 - Access and Movement 03
 - Landscape and Public Realm 04
 - Maximum Building Heights 05
- 8.6 Negotiations on the outline application are ongoing across a range of issues and an extensive amendments submission will need to be submitted. The outline application will be brought to this Committee for determination in due course. It is therefore important that this application in no way pre determines the outline application and is considered on its own merits. Whilst I recognise concerns from some third parties that determination is premature in advance of the outline, the application must be assessed on its own merits on the basis of the current situation.

Context of site, design and external spaces

- 8.7 The key design issue is the detailed design and appearance of the new building in its setting and its relationship with the wider assessment of the outline application 16/1134/OUT.

Design and Layout – Inset Masterplan

- 8.8 The proposed building will over time form one of a line of buildings along the eastern edge of the site (subject to approval of the wider outline). However the application proposal is limited to a single building within that modular chain and must be assessed on its own merits.
- 8.9 This wider chain proposes workshops with heavier, more intensive activities are concentrated to the north end of the site, closer to Madingley Road, with a reducing noise gradient to quieter workshop (lighter) uses at the southern end. This is part of the strategy of producing a pedestrian focused environment to the eastern side of the campus in the interests of building connectivity and collaboration between institutes. The eastern end of the campus will eventually be anchored by East Green Link, a key strategic corridor which will be fronted by shared facilities hubs, shared collaborative atrium spaces which will provide an active frontage onto the green corridor.
- 8.10 The CEB will contribute to this overall strategy through its layout orientation and integration with the garden area to the immediate west of the site. The more active edge of the building is well related to the open space opposite and the site planning introduces cycle parking areas that will activate the current ground floor frontages of the Roger Needham building and Graphene Centre. In taking this approach the CEB will reflect the principles of the inset masterplan which demonstrates successful interrelations and integrations between buildings, routes and spaces in accordance with Cambridge Local Plan 2006 3/7.
- 8.11 A new 'street' will be created to the western side of the building that will form the main pedestrian and cycle access to the building. This route will also allow for limited service vehicle access but has been conceived as a pedestrian and cycle priority space. The proposals for this street and associated public realm are considered to be acceptable in design terms.
- 8.12 The east side of the building has been carefully designed and does read as a rear 'service yard'. The associated paraphernalia that typifies such arrangements are contained within the footprint of the building. This approach is supported

in design terms, which demonstrates a positive response to context in accordance with Cambridge Local Plan Policy 3/4.

- 8.13 While this application does not seek permission for the wider inset masterplan, it has been designed to positively relate to that wider strategy. Nevertheless in isolation, the design of the CEB is positive in context, in accordance with Cambridge Local Plan 2006 policies 3/4 and 3/12.

Height, mass and wider visual impact

- 8.14 The proposed building will not in the view of officers result in significant visual harm from longer views of the site from the south or east. Whilst concerns regarding the visual impact of the proposal from residential properties to the east are noted, officers do not consider that the building should be proportionately lower closer to the boundary with landscaped bund. I do recognise that the proposed CEB building, being constructed on existing car parking, is in front of the existing building line from CAPE and The Roger Needham Building. I consider this siting acceptable because of the substantial 10.5m setback from the landscaped bund and the overall screening the buffer provides. The visual impact of the building has been modelled with verified views (three additional viewpoints provided post submission), which demonstrates that the building will not be unduly dominant or intrusive.
- 8.15 From closer vantage points, the additional verified view 03 demonstrates that the parapet of the building will only be partially visible from CMR. This is because of the very significant landscape bunding which defines the eastern side of the West Cambridge site. The overall width of the section from the application site and the nearest residential street, The Lawns, is such that the visual impact of the development will be minimal. Verified view 03 is modelled using a winter scene which therefore assesses the worst case visual impact.
- 8.16 Officers have considered the photos provided by third parties showing the view of the site from the upper level windows of 3 The Lawns. Whilst it is recognised a larger proportion of the CEB will be visible from first floor level, the degree of visual prominence is not considered to be significantly harmful. In the view of officers the height and mass of the building

appropriately responds to the site context, in accordance with Cambridge Local Plan 2006 policies 3/4 and 3/12.

- 8.17 Verified view 05 illustrates the next building likely to come forward to the immediate south of the CEB (adjacent to the footpath/cycleway). This future building will be more prominent from the entrance to The Lawns as compared to the application proposals. However, its height, elevational treatment and materials will all be assessed on their individual merits through any future planning application. The design of the adjacent modular block is not material to the determination of the proposed CEB. Because the CEB is a separate full application, design and appearance of the entire chain of buildings on the eastern side of the site is not prejudged.
- 8.18 From middle distance views, verified view 02 shows the building will not be unduly prominent from Wilberforce Road. This is because the parapet height of the building does not break the tree line when viewed from the playing fields at Wilberforce Road. The visual appearance of the building is now consistent with the latest revised outline masterplan landscape and visual impact studies, the eastern edge of which is supported by officers. No harm would result on the West Cambridge Conservation Area heritage asset. The height of the flues will be visible on top of the building, but they are sculptural forms adding general interest rather than another level of accommodation, a view shared by Heritage England.
- 8.19 The outline strategy for assessment of flues is still under review. Detailed guidance on flues is likely to be contained in the Design Guide to direct their form and prominence. However, the flues on the CEB would not create a precedent for the outline strategy on flue heights.
- 8.20 The new verified view 04 from Grantchester shows the building will not be unduly prominent from long views to the south because its height is very similar to the surrounding buildings, the Graphene Centre and CAPE. This gives assurance that approval of the CEB will not compromise ongoing discussions regarding the wider visual impact of the outline masterplan application.

Detailed design and materials

- 8.21 The external appearance of the building is intended to set a high quality benchmark for the rest of the site. The glass in the glazed panels will consist of clear panels and sprandel glass to provide privacy for the building's interior users. The aluminum exterior cladding will provide a high quality finish to the external elevations. The final details of which can be agreed through the imposition of condition 2 (materials).
- 8.22 The external appearance of the building has in part been driven its approach to sustainable design and construction. For example, the natural ventilation to the rooms on the lower ground is assisted by the continuous louvered band which provides a strong horizontal emphasis to the east and west elevations. Thermochromic fins on the western façade provide shading and change in transparency depending on the amount of sunlight. This innovative feature will also provide visual interest and an attractive façade particularly when the building is viewed from oblique angles. This approach demonstrates sustainable construction well integrated into the design in accordance with Cambridge Local Plan 2006 policy 3/12.

External Spaces, landscape and trees

- 8.23 The CEB, the new access road and revised parking layout will result in the removal of 26 individual trees. However, all but one of these trees are category C or U (lower quality specimens). In the view of officers the removal of some trees and vegetation at the point of the widened Park and Cycle access, will not significantly thin the landscaped boundary at its northern end. The majority of trees to be removed are young trees planted in the last 15 years as part of landscaping to the existing car parking areas.
- 8.24 Officers are currently in discussion with the university regarding the detail of the management of the woodland buffer to the east of the proposed building. The long term management and maintenance of the hedge will be secured through planning condition 20 and will ensure an appropriate regime of thinning and planting is put in place to maintain its long term health.

Cambridgeshire Quality Panel

- 8.25 The Cambridgeshire Quality Panel reviewed the emerging proposal on 9 April 2015. The Panel were supportive of the proposals. A number of specific comments and recommendations were made to further enhance the scheme which are set out in table 2 below. The full minutes are attached as Appendix 1.

Table 2: Quality Panel Issues and officer responses

Issues and recommendations of Quality Panel	Officer response
The presentation included the architects end game vision for a forum building that would enclose the west side of the green space which would help to transform East Green Link. There is no funding at present to deliver this vision so CEB will sit in isolation, possibly for several years.	Phasing of open space is a key issue to be resolved in the outline masterplan. The delivery of key open space, which includes north south corridors to break up the large mass of the development, is the subject of ongoing negotiation.
The Panel recommended further work into the hierarchy of social spaces and looking at the type of interactions and their duration.	The CEB building provides a second floor roof terrace which is a multifunction break out space for social and research related activities. The designs now provide a number of break out spaces and tea points throughout the building to provide staff with alternative venues to their more formal office and laboratory environments.

<p>Ground floor circulation and legibility was questioned in advance of the inset masterplan coming forward.</p>	<p>The orientation of the building, its entrance and relationship with CAPE and Roger Needham buildings will provide an easy to navigate environment in both the short and longer term as the eastern side of the campus is built out.</p>
<p>The service route was questioned including how it will be used and security controlled.</p>	<p>The design of the east facing elevation will not be a service year blank elevation. Deliveries will be handled by a banksman to the benefit of site security.</p>
<p>Further thought is needed regarding arrivals by bicycle, especially with the increasing usage of electric and expensive bicycles.</p>	<p>The proposed provides save secure bicycle parking to the front of the building which is well overlooked.</p> <p>Internally, the building provides generous changing facilities, a drying room and three showers.</p>
<p>Further details on the landscape design is needed.</p> <p>Density of tree planting on the eastern side needs to be considered.</p>	<p>A detailed soft landscaping specification has been developed which meets the approval of the Council's Landscape officer.</p> <p>While the general principles of management of the landscaped bund have been reviewed as part of the outline planning application, condition 19 will ensure the vegetated bund immediately adjacent to the building is managed at an early stage.</p>

<p>Further modelling of the internal and external climate to verify that room control systems will deal with ventilation and glare.</p>	<p>The louvered panel system will provide adequate ventilation to the interior of the building. The building will have an energy management system which can identify the areas of the building which are inefficient or not providing optimum performance. This is a cost efficient way of monitoring building performance.</p>
<p>Cost of numerous individual mechanical ventilation units.</p>	

Quality Panel Conclusion

- 8.26 The outstanding queries of Quality Panel have been satisfactorily addressed through the application submission.

Conclusion

- 8.27 The proposal is fully supported by the City Council's Urban Design and Conservation and Landscape Teams, and has been robustly assessed for visual impact in the context of the undetermined outline planning application. A high quality building is proposed which is well integrated in context. It is considered that the proposal conforms Cambridge Local Plan 2006 policies 3/4 and 3/12.

Residential Amenity

- 8.28 The key amenity issues are the potential disturbance from deliveries, noise and vibration operational noise, operational odour and dust, artificial lighting, contaminated land, air quality and potential impact of the building in relation to neighbouring residential properties to the east.
- 8.29 Officers have some concern that this development is coming forward early, in advance of an approved new strategic masterplan for the entire West Cambridge Site. It is important that the cumulative environmental impacts associated with the emerging West Cambridge Site masterplan outline are considered and mitigated as necessary in a holistic, coordinated, integrated and site wide approach.

8.30 However, this stand-alone full application needs to be considered on its own merits. The proposed conditions will provide a very high level of protection for existing residents from the impact of this development.

Impact on amenity of neighbouring occupiers

Noise and Vibration

8.31 Noise and vibration effects associated with operation of the proposed development have the potential to affect amenity of surrounding properties. Officers have thoroughly considered the potential impact on existing residential premises to the east of CMR (The Lawns, Perry Court) approximately 60 to 70 m away.

8.32 The potentially noise generating activities inside the building relate to specific engineering activities e.g. concrete mixers, jack hammer and a beam shaker in the main structures workshops. As a general principle the inset masterplan has tried to minimise the impact of workshop buildings along the eastern edge of the site by locating the heavier type workshops to the north end of the site.

8.33 To ensure a high degree of noise and vibration protection a structural floating strong floor and acoustically isolated '*Super Floor - Box in Box Containment System*' will be provided. The main strong floor and concrete lab are both designed to incorporate vibration isolation measures which will reduce the transmission of vibration within the new building.

8.34 The structures laboratory of the CEB will incorporate a strong floor which will be on isolated elastomeric pads. The concrete lab will sit on a floating reinforced concrete slab supported on resilient bearings on the raft concrete slab, and this will dampen the vibration levels (also reduces noise generation) by decoupling from the surrounding building structure. In addition, the new building will be coupled with the surrounding ground, resulting in an increased stiffness and damping by the ground itself. This approach is extremely vigorous and demonstrates to the satisfaction of the Council's specialist officers that the noise generating activities will not give rise to breakout distance to the nearest residential properties.

- 8.35 I note comments from CMRRA that the building walls and doors facing east are not as thick as those on the surrounding sides. However, the fact that various building element thicknesses vary does not necessarily mean that the acoustic attenuation performance of a thinner wall is less than a thicker wall. Acoustic performance of building elements is influenced by a number of factors including mass of material (surface density), stiffness and completeness.
- 8.36 What is important is that the external eastern building façade building elements (walls, doors, windows) meet the acoustic performance assumed in the noise impact assessment. If achieved this will meet noise requirements and safeguard local amenity.

Outline Masterplan Strategy

- 8.37 The long term noise / vibration impacts from this development should not be considered in isolation. There are other similar engineering buildings and uses planned for the peripheral Eastern edge of the proposed 'Inset' Masterplan'. In the longer term the cumulative impact of all sound / noise will need consideration and controlled to protect existing background noise levels at noise sensitive premises.
- 8.38 In summary, for this individual full application officers are satisfied that the operation of the building and its noise impacts can be mitigated and reduced to a negligible level. The principle of a further modular chain of buildings on the eastern edge is not prejudged through determination of this application and will be assessed through the outline application and or future full planning applications.

Deliveries

- 8.39 The servicing access to the CEB will use the existing, although slightly enlarged Park and Cycle access. The submitted 'Servicing and Operational Management Plan' proposes the following mitigation measures for deliveries and collections:
- Typically 1 delivery per day from a small van
 - Approximately 6 HGV deliveries per year
 - Weekday deliveries between 8am – 6pm
 - Saturday deliveries between 9am – 1pm

- No deliveries on Sundays
- All unloading must be done inside the structures lab with acoustic doors closed
- A banksman shall be used when possible to avoid the need for reversing alarms

8.40 I note concerns raised by third parties that proposed servicing of the building from this entrance will conflict with the safety of the use CMR as a cycle route proposed as part of the outline masterplan. However, the Park and Cycle Access is at the top end of CMR, is an existing access point and will not directly affect the amenity for residential properties at the southern end of the street.

8.41 In terms of the likely noise impact from the proposed access arrangements, the noise level from a Heavy Good Vehicle (HGV) vehicle moving along the servicing access road and idling outside the engineering building for 10 minutes in any hour has been assessed at both the garden boundary of the nearest residential building and the façade of the residential building at 1st floor level. This assessment is based upon the worst case scenario of an articulated lorry.

8.42 The rating noise level from the proposed development is 4dB below typical weekday daytime background noise levels. If deliveries were undertaken between 0900 and 1300 hrs on Saturdays the background noise levels would only be exceeded by 1dB. All other deliveries to the building will be made by a small van and noise levels from such a vehicle are much lower (by at least 5dBA if not more) and always less than the typical background noise level. This is a negligible impact. The nine bespoke planning conditions will ensure the proposed regime of servicing is strictly controlled.

8.43 Deliveries will take place to the rear of the building within one of two service doors within which vehicles will drive to reduce noise breakout resulting from unloading. The operational use of the building has potential to create break out noise. This risk has however been mitigated through a comprehensive delivery strategy, whereby deliveries are unloaded inside of the main strong floor area. This closely managed regime of servicing can be ensured through the imposition of condition 4.

- 8.44 To ensure operational noise is mitigated and minimised and that the noise levels predicted in the noise assessment are maintained at all times in the long term operational noise and vibration conditions are imposed. Buildings on east peripheral edge of the wider Engineering Department 'Inset' Masterplan will be able to operate under similar operational noise condition requirements.
- 8.45 Proposed condition 4 allows for 12 HGV deliveries per year which is considered reasonable in the context of monitoring and enforceability. Use of the access road to service road will be prevented through the imposition of condition 5.

Outline application – medium and longer term servicing

- 8.46 Concerns have been raised by CMRRA regarding the servicing strategy for the wider outline planning application. I am mindful that CEB is the first building of a chain of the eastern side of the site which will be served by the new access Road. Whilst there may be sufficient headroom for the next modular buildings on the eastern side of the site in terms of likely noise impact on the nearest residential properties, the longer term strategy of servicing these future buildings will be considered on their own merits.

Construction Impacts

- 8.47 In terms of construction servicing, there will be no servicing of the site from CMR. All construction vehicles will approach the site from the West from JJ Thomson Avenue. This can be ensured through the imposition of condition 3 which secures the construction and environmental management plan for the site.
- 8.48 In the interests of amenity and to be consistent with the approach that is likely to be taken for the West Cambridge Site outline planning application a Construction Environmental Management Plan (CEMP) planning condition is recommended and will be required through the imposition of condition 3.
- 8.49 In my opinion the proposal adequately respects the residential amenity of its neighbours and the constraints of the site and I consider that it is compliant with Cambridge Local Plan (2006) policies 3/4 and 4/13.

Air Quality

- 8.50 The outline planning application submissions lacks sufficient detail and assessment on a number of environmental health related issues and strategies including air quality. This notwithstanding this full application was accompanied by an Air Quality Screening Note which is proportionate given the size of the proposal.
- 8.51 The building design has been carefully considered to minimise local air quality impacts. Because the only heat source for the building is an electrically driven ground source heat pump system the building does not contain any combustion plant whatsoever. This means emissions of NO_x and particulate on the site are zero. This is welcomed and can be secured by condition 11.
- 8.52 In addition, there is also a commitment to ensure that any long term (in the context of the wider Cambridge West masterplan) air quality traffic impact mitigation that is attributable to traffic will be implemented and secured as part of an overarching West Cambridge approach. This is likely to include measures to aid sustainable transport through a travel plan and modal shift away from the private car and provision of electric vehicle charging infrastructure through the future car parking proposals.

Odour and fumes

- 8.53 The approach detailed is generally acceptable but further detailed design information of equipment and systems for the purpose of extraction and filtration of odours, fumes and dust or similar particles is required and proposed 12 condition is recommended.

Contaminated Land

- 8.54 The ground investigation undertaken has confirmed the absence of significant land contamination. No mitigation measures or further intrusive works are required regarding contaminated land.

Shadow and overlooking Impacts

- 8.55 Because of the distances involved, the limited height of the CEB and the role of the substantial vegetated bund, there will be no issues of overlooking, shadow impact or loss of light. Wider visual impact is discussed in the design subsection.

Amenity for future site users

- 8.56 Future expansion of the design and layout is intended to minimise disruption for existing site occupiers during the future building works. This is through locating stair cores and non-working spaces at the north and south flank of the building.
- 8.57 The restrictions on opening window set out in condition 7 does not apply to the upper floor offices, which will give building users choice to ventilate the internal spaces. In my opinion the proposal provides a high-quality living environment and an appropriate standard of residential amenity for future occupiers, and I consider that in this respect it is compliant with Cambridge Local Plan (2006) policies 3/7 (3/12 or 3/10) and 4/13.

Highway Safety

- 8.58 The County Highways Authority has assessed the proposed widen access from the existing Park and Cycle facility and is content that there would be no significant adverse harm to highway safety. This is because the access already serves the Park and Cycle Facility and there will be not be significant intensification which might result in harm to the public highway.

Outline Masterplan Strategy

- 8.59 At present the current TA proposes measures to remove parked cars from CMR which currently allows uncontrolled car parking for approximately 85-90 cars. This results in a reduced quality cycle connectivity and increased vehicle use on the street. Under the current outline application this car parking will be replaced with two mandatory cycle lanes. This would in the longer term address the issue the issue of existing parking and is likely to reduce the issue of street traders raised by CMRRA. This principle will be considered when the outline application comes to Committee for determination in due course.

8.60 The strategy of some limited servicing provision to the northern end of CMR would not in the view of the Highways Authority create a conflict with future on road cycle lanes on CMR. In my opinion the proposal makes adequate regard to the undetermined outline permission and is compliant with Cambridge Local Plan (2006) policy 8/2.

Car and Cycle Parking

Car parking

8.61 The proposed maximum car parking standards applied for CEB have been derived from those applied to the adjacent North West Cambridge Development (NWCD) and analysis of current usage for car parking across the West Cambridge site. The maximum standard applied is 1 car parking space for each 4 members of staff. This is the same as the Cambridge Local Plan 2006 maximum standards outside of the Controlled Parking Zone. Under these standards a total of 31 car parking spaces (including 2 accessible spaces) would need to be provided. Through the separate West Cambridge outline application, monitoring will be undertaken of surrounding residential streets and the need to support a residents only controlled parking zone scheme.

8.62 Notwithstanding the above, using the Future Person Trip Assessment (table 6.9 Transport Assessment) the applicant has carried out a daily car parking accumulation assessment. This estimates 34 car parking spaces (including 2 accessible spaces) is required. Whilst this maximum estimated demand is a worst case scenario and does not reflect the changes in travel demand management at West Cambridge, the County Highways Authority is in agreement this is an appropriate standard for the proposed CEB.

8.63 The proposed building will result in the loss of 145 car parking spaces from the existing car park. The University will provide an additional 51 spaces to the Park and cycle facility in order to mitigate this loss. The net loss of car parking through the development is 94 spaces.

8.64 Car parking across the West Cambridge Site is under utilised. The car park occupancy survey undertaken in March 2015 showed 113 spaces unoccupied east of the Roger Needham

Building. On this basis, there would be an estimated short fall of 15 car parking spaces. This short fall can however be accommodated within across under used communal car parking at other locations on the West Cambridge Campus. The net reduction of car parking is summarised in table 4 below:

Table 4: Summary of Car Parking

Car Parking	Car parking spaces
Loss of car parking spaces through site development	-145
Provision of temporary spaces adjacent to the Whittle Laboratory	+ 51
Increased car parking requirement	+34
Under occupied car parking east of Roger Needham	113
Potential shortfall in car parking spaces	15

Outline Masterplan Strategy

- 8.65 The wider approach to car parking is currently subject to the ongoing transport assessment work for the outline planning application. However the TA as submitted for the outline sets out the University's long term commitment to managing car parking. It is currently proposed that the maximum number of car parking spaces reduces towards the later phases of West Cambridge, reflecting the increased frequency and coverage of public transport in future. This will however need to be carefully managed and timed to follow wider transport improvements.
- 8.66 Whilst the application proposal is for full planning permission, it will form a part of Key Phase 1 of the main outline application. As part of this initial phase, the University's is seeking consent for a total of 2,571 car parking spaces. This provision is 579 spaces lower than the 1999 extant permission. Whilst this overall modal shift from private car use to sustainable modes

will be determined through the outline permission, approval of the CEB with not prejudice the outcome of these negotiations. This is because it has been clearly demonstrated that there is an over provision of car parking adjacent to the application site.

- 8.67 In summary, 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 CEB is fully in accordance with the emerging outline strategy of reducing car trips and travel demand management. Approval of this application will not prejudice the Council's position in relation to the ongoing work associated with the outline Transport Assessment (16/1134/OUT). In my opinion the proposal is therefore compliant with Cambridge Local Plan (2006) policies 8/6 and 8/10.

Cycle Parking

- 8.68 The development proposes 144 cycle spaces are proposed which accords with the cycle parking standards identified within Section 8 of the West Cambridge TA. The standards are 1 space for every 2 members of staff and 1 space for all students. The cycle parking will be conveniently located to the front of the building and is well related to the adjacent landscaped garden. A minor reconfiguration to the end Sheffield Stands, together with appropriate ground markings can ensure provision is made for trailers and larger bicycles. This can be ensured through the imposition of condition 20.

Outline Masterplan Strategy

- 8.69 To accommodate the likely 3,600 students and 7,200 staff within Key Phase 1, the initial development will be provided with around 7000 cycle parking spaces. Their distribution will come forward with each reserved matters. The University is also investigating cycle hubs to provide a further pooled facility. The County Council are content with the standards identified for cycle parking and are content that approval of this full application does not prejudice assessment of the outstanding masterplan outline application 16/1134/OUT.

Renewable energy and sustainability

- 8.70 The application proposes a hierarchical approach to energy provision which has been driven by the Engineering Department. The overall strategy has set very challenging sustainability targets, and, if met will provide an exemplary approach to sustainability. The measures include achievement of BREEAM excellent rating; proposed use of Green Roofs above photovoltaic panels; innovative use of materials; water efficiency measures and use of prefabricated elements to reduce on site construction waste.
- 8.71 Two renewable energy technologies are proposed as part of the hierarchical approach, photovoltaic panels and a ground source heat pump which will provide all heating and cooling. Carbon emissions will be reduced by a total of 42%. Building performance will be controlled through the imposition of conditions 15 and 16.

Outline Masterplan Strategy

- 8.72 It is noted that the emerging outline energy strategy for the wider West Cambridge site is focussed on a site wide approach to energy provision and work is currently on going to investigate the energy sources that would power a site wide heat network. However, the outline strategy does also note that some earlier buildings on the site, notably the CEB, would precede the construction of the energy centre associated with this network and as such would need their own energy solution.
- 8.73 The proposed ground source heat pump is in keeping with the medium term energy strategy for the West Cambridge site, which includes the use of heat pumps to serve the heat network, located within individual building plots. The Sustainability Strategy for this proposal does note that some site wide infrastructure will be incorporated into the project including empty ducts for future systems such as district energy systems. As such, the energy strategy for this scheme is supported. In my opinion the applicants have suitably addressed the issue of sustainability and renewable energy and the proposal is in accordance with Cambridge Local Plan (2006) policy 8/16 and the Sustainable Design and Construction SPD 2007.

Drainage

- 8.74 Surface water runoff has been successfully mitigated on the plot. A phasing plan has now been completed for the drainage network. It confirms that the CEB site does not require site wide strategic drainage alterations in order to proceed and that all the attenuation for the 1 in 100 year storm event plus a 40% allowance for climate change can be dealt with on plot. Strategic infrastructure required for the wider outline application are not necessary for this development to proceed.
- 8.75 The scheme successfully integrates a green roof which has wider water quality and biodiversity benefits. Overall the application successfully addresses sustainable drainage issues in accordance with Cambridge Local Plan policy 3/7 and 8/18.

Refuse Arrangements

- 8.76 The proposed building integrates refuse stores to the southern side of the building. The Environmental Health Team are satisfied that the likely weekly waste collection is an acceptable requirement and will not give rise to undue noise and disturbance rather than the operational servicing requirements discussed in the subsection above. In my opinion the proposal is compliant with Cambridge Local Plan (2006) policy 3/12.

Outline Masterplan Strategy

- 8.77 Refuse requirements are being considered in the context of servicing arrangements for the wider West Cambridge Site. Measures to reduce waste will be set out in the Sustainability Assessment Matrix which provides objectives for new occupants on the site.

Disabled access

- 8.78 The application has been considered by Disability Panel and the application has made changes to the internal fittings and arrangements to improve the reception desk and WC areas.
- 8.79 Whilst the Council's Access Officer considers the lifts might be more conveniently located, the design rationale for their position is acknowledged. In my opinion the proposal has positively

addressed inclusive access into the design, in accordance with Cambridge Local Plan (2006) policies 3/7 and 3/12.

Public Art

- 8.80 The applicant does not consider the application to be of sufficient size to justify an onsite public art contribution which would offer wider public benefit. Whilst it is recognised the size and location of the CEB does not provide the optimum location for public art, there is not currently a strategic framework for West Cambridge to prioritise projects. 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 planning condition 17. In my opinion the proposal is compliant with Cambridge Local Plan (2006) policies 3/7 and 10/1 and the Public Art SPD 2010.

Outline Masterplan Strategy

- 8.81 The University is committed to developing a site wide public art strategy which will identify different themes and priorities for public art across the site. This will be developed by the University over the coming months and provide the strategic framework for reserved matters applications in the future. The key area for incorporating public art is likely to be the Shared Facilities Hub which is currently at pre application stage.

Third Party Representations

- 8.82 The issues raised have been addressed in the above report and are mapped in table 5 below:

Table 5: Summary of third party representations

Issue	Report section
The application proposal is premature ahead of the new masterplan which is eventually agreed for the wider campus.	Paragraph A8, 8.6.

<p>All access to the proposed CEB should be from within the site, accessed off Madingley Road and not CMR. CMR is a residential road and a designated cycle route which is already busy and dangerous.</p>	<p>Paragraphs 8.9, 8.46, 8.58, 8.59.</p>
<p>The proposed building will be much closer to CMR and therefore more obvious and less screened.</p>	<p>Paragraphs 8.14</p>
<p>Visuals within the Design and Access Statement are inconsistent in terms of flues.</p>	<p>The 2 axonometric plans on p 27 of the Design and access statement are indicative only.</p> <p>2 additional accurate axonometric plans have now been submitted which give a more accurate impression of the building in context. These images are not however 'verified views', which have also been submitted to analyse the impact of the building.</p>
<p>If deliveries are so infrequent (6 per year) a dedicated servicing access appears unnecessary.</p>	<p>Paragraph 8.11, 8.39 – 8.46.</p>
<p>The background noise data makes no reference of weather conditions, in part particular wind direction. On calm days CMR is generally a low noise area.</p>	<p>In this area of the City the ambient noise levels are typically dominated by relatively steady distant diffuse traffic noise from the M11 to the west. Prevailing winds in the City are from the south west (downwind of the M11). Noise levels can be lower when the wind is in the opposite or an alternative direction (upwind of the M11). When the</p>

	<p>survey was undertaken a variety of wind directions occurred on different days so this is acceptable and includes days when wind direction is upwind of the M11.</p>
<p>BS 4142 comparison of noise rating level with representative background noise level. Why take 40th percentile?</p> <p>Appendix shows that from 08:00 to 18:00 on a quiet week the sound level is less than 40dB 30% of the time, therefore the background noise level taken, 47 dB, is not representative.</p>	<p>The use of 40th percentile of baseline noise levels to determine representative noise levels is considered acceptable. It is also important to note that for this assessment the method of obtaining ‘<i>typical</i>’ representative background noise levels included discounting the highest 20% of values in order to ensure outlying erroneous atypical values are discounted.</p>
<p>Reference to noise rating level of the Beam Shaker at the garden boundary of the nearest property would be 51dB and 54dB at 50Hz and 63Hz respectively. Measured at the 40th percentile daytime background noise level is 55dB and 54 dB at 50Hz and 60Hz respectively which above the 47db background measured level.</p>	<p>The 51dB and 54dB at 50Hz and 63Hz linear unweighted noise levels respectively quoted in the noise report and mentioned above are not directly comparable to the background 47dB(A) levels. If they are A-weighted these levels would be 21 and 28 dB(A) respectively.</p> <p>In any case the levels are below corresponding background 1/3 octave levels are not considered tonal and are at the low end of the threshold of hearing.</p> <p>These low frequency noise components should not be audible and no impact is envisaged.</p>

	<i>(NB. When a measurement is "A" weighted the sound level meter is responding in a similar way to the human ear)</i>
The noise assessment is based on three activities (cement mixing, jack hammers, beam shakers) but over the life of the building there will certainly be different activities. The planning should be subject to all future activities being of an acceptable noise level.	<p>The noise impact assessment has considered the noisiest activities currently undertaken at the existing Engineering Department. The noise levels used in the assessment are relatively high and it is unlikely that any new or unforeseen will be much greater.</p> <p>However, to ensure that the amenity of residential premises is protected at all times in the long term, an operational noise 'rating level' limits condition 9 is recommended for various times of the day: Day (0800 – 1800hrs), Evening (1800 – 2300hrs) and Night (2300 – 0800hrs) time periods.</p>
Any further need for emergency generators must be conditioned.	This is addressed by condition 10.
The servicing and operational management plan shall not be varied without public scrutiny.	Noted.
It is not anticipated that machinery noise would normally be operated outside of the daytime period (8am to 6pm) – this needs to be a planning condition.	This is noted but providing the operational noise levels do not exceed the cumulative operational noise 'rating level' limits condition as recommended above (condition 9) existing quality of life / amenity will be protected.

Object to the inclusion of accent lighting provided by uplighters on the chimneys.	All illumination has been removed from the proposed flues. In addition, details of all other external lighting will be required through the imposition of condition x.
CMR suffers from being used as a parking place for food vans whose customers work on the West Cambridge site.	Paragraph 8.59. This will also be addressed through the Shared Facilities Hub application.
The building does not have provision for rainwater reuse or grey water systems.	Paragraph 8.75.

Planning Obligations (s106 Agreement)

8.83 The Community Infrastructure Levy (CIL) Regulations 2010 have introduced the requirement for all local authorities to make an assessment of any planning obligation in relation to three tests. Each planning obligation needs to pass three statutory tests to make sure that it is:

- (a) necessary to make the development acceptable in planning terms;
- (b) directly related to the development; and
- (c) fairly and reasonably related in scale and kind to the development.

In bringing forward my recommendations in relation to the Planning Obligation for this development I have considered these requirements.

8.84 In line with the CIL Regulations, councils can pool no more than five S106 contributions towards the same project. The new 'pooling' restrictions were introduced from 6 April 2015 and relate to new S106 agreements. This means that all contributions now agreed by the city council must be for specific projects at particular locations, as opposed to generic infrastructure types within the city of Cambridge.

Transport Infrastructure

- 8.85 County Council officers have confirmed that mitigation measures are needed to address the demands imposed on the transport network as a result of the development. Officers at the County Council have assessed the transport information submitted by the applicants and have reached the view that the proposed enhanced uncontrolled pedestrian and cyclist crossing on Madingley Road between Observatory Drive and Clerk Maxwell Road is considered acceptable. The detailed design of the full signalisation of this junction will need to be reviewed as part of the outline planning application.
- 8.86 Subject to the completion of a S106 planning obligation to secure this infrastructure provision, I am satisfied that the proposal accords with Cambridge Local Plan (2006) policy 10/1 and the Planning Obligation Strategy 2010.

City Deal

- 8.87 The CEB will be considered within the mitigation package for the overall masterplan application.

Planning Obligations Conclusion

- 8.88 It is my view that the planning obligation is necessary, directly related to the development and fairly and reasonably in scale and kind to the development and therefore the Planning Obligation passes the tests set by the Community Infrastructure Levy Regulations 2010.

9.0 CONCLUSION

- 9.1. This building forms the first part of a proposed series of buildings on the eastern side of the West Cambridge campus for the Department of Engineering. These proposals are in themselves part of the wider overall emerging new masterplan for the West Cambridge site that is subject to a separate current outline application yet to be determined. However, this proposal is coming forward as an independent full application at the present time because of funding issues which require expenditure to be committed in 2017/18. Thus, this application has to be considered on its own merits, whilst ensuring that it

does not prejudice the objectives of the emerging wider site masterplan/outline application.

- 9.2. Policy 18 of the emerging Local Plan supports densification of the West Cambridge site and the principle of this development accords with this policy. The proposed development would be of high quality design and will successfully integrate in the context of surrounding buildings and the emerging outline masterplan strategy for the eastern side of the campus. The visual impact of the development has been assessed individually and in the context of the wider outline application and it is considered that there will be no significant impacts arising, including for surrounding residential properties.
- 9.3. Other issues arising from the development including transport impacts, car parking and cycle provision have been assessed individually but also in the context of the wider emerging outline application masterplan and it is considered that all matters have been addressed satisfactorily, subject to imposition of appropriate conditions. A number of concerns have been raised from local residents about noise and amenity impacts including those arising from the provision of servicing from Clerk Maxwell Road. These have been considered in detail and will be addressed by the imposition of appropriate conditions.
- 9.4. The application is therefore recommended for approval, subject to completion of a S106 agreement to address transport mitigations.

10.0 RECOMMENDATION

APPROVE subject to completion of the S106 Agreement and the following conditions:

1. The development hereby permitted shall be begun before the expiration of three years from the date of this permission.

Reason: In accordance with the requirements of section 51 of the Planning and Compulsory Purchase Act 2004.

2. Prior to any above ground works, a sample panel of the materials to be used in the construction of the external surfaces has been prepared on site for inspection and approved in writing by the Local Planning Authority. The sample panel shall be at least 2m x 2m and show the proposed palette of materials (including plant screening, metal cladding, brickwork/masonry) to be used in the development. The development shall be constructed in accordance with the approved sample, which shall not be removed from the site until the completion of the development.

Reason: To ensure that the external appearance of the development is in keeping with the existing character of the area. (Cambridge Local Plan 2006 policies 3/4, 3/12 and 3/14).

3. Prior to the commencement of development, a Construction Environmental Management Plan (CEMP) shall be submitted to and approved in writing by the local planning authority. The CEMP shall include the consideration of the following aspects of demolition and construction:
 - a) Demolition, construction and phasing programme.
 - b) Contractors' access arrangements for vehicles, plant and personnel including the location of construction traffic routes to, from and within the site, details of their signing, monitoring and enforcement measures.
 - c) Construction/Demolition shall only be carried out between 0800 hours to 1800 hours Monday to Friday, and 0800 hours to 1300 hours on Saturday and at no time on Sundays, Bank or Public Holidays, unless in accordance with agreed emergency procedures for deviation. Prior notice and agreement procedures for works outside agreed limits and hours.
 - d) Delivery and collection times for construction/demolition purposes shall only be carried out between 0800 to 1800 hours Monday to Friday, 0800 to 1300 hours on Saturdays and at no time on Sundays, bank or public holidays, unless otherwise agreed in writing by the local planning authority in advance.
 - e) Soil Management Strategy having particular regard to contaminated land.

- f) Noise impact assessment methodology, mitigation measures, noise monitoring and recording statements in accordance with the provisions of BS 5228-1:2009+A1:2014 Code of practice for noise and vibration control on construction and open sites. Noise
- g) Maximum noise mitigation levels for construction equipment, plant and vehicles.
- h) Vibration impact assessment methodology, mitigation measures, vibration monitoring and recording statements in accordance with the provisions of BS 5228-2: 2009+A1:2014 Code of practice for noise and vibration control on construction and open sites. Vibration
- i) Maximum vibration levels.
- j) Dust management / monitoring plan and wheel washing measures. Non-Road Mobile Machinery (NRMM) demolition or construction works or similar, emissions standards
- k) Prohibition of the burning of waste on site during demolition/construction.
- l) Site artificial lighting.
- m) Drainage control measures including the use of settling tanks, oil interceptors and bunds.
- n) Screening and hoarding details.
- o) Access and protection arrangements around the site for pedestrians, cyclists and other road users.
- p) Procedures for interference with public highways, including permanent and temporary realignment, diversions and road closures.
- q) External safety and information signing and notices.
- r) Consideration of sensitive receptors.
- s) Prior notice and agreement procedures for works outside agreed limits.

t) Complaints procedures, including complaints response procedures.

u) Membership of the Considerate Contractors Scheme.

ii. Non-Road Mobile Machinery Plant Condition

All Non-Road Mobile Machinery (NRMM) of net power between 37kW and 560 kW used during construction works or similar, shall meet the emissions standards in Stage IIIA of EU Directive 97/68/EC (emission of gaseous and particulate pollutants from internal combustion engines to be installed in non-road mobile machinery - as amended) for both Nitrogen Oxides (NOx) and Particulate Matter (PM). If Stage IIIA equipment is not available the requirement may be met using the following techniques:

- Reorganisation of NRMM fleet
- Replacing equipment
- Retrofit abatement technologies
- Re-engineering

All eligible NRMM shall meet the requirement above unless it can be demonstrated that the machinery is not available or that a comprehensive retrofit for both PM and NOx abatement is not feasible. In this situation every effort should be made to use the least polluting equipment available including retrofitting technologies to reduce particulate emissions.

Developers will be required to provide a written statement of their commitment and ability to meet the requirement within their Construction and Demolition Management plans.

An inventory of all NRMM, including evidence of emission limits for all equipment must be kept on site and all machinery should be regularly serviced and service logs shall be kept on site for inspection. This documentation should be made available to local authority officers as required.

Reason: To protect local air quality and human health by ensuring that the production of air pollutants such as nitrogen dioxide and particulate matter are kept to a minimum during the lifetime of the development, to contribute toward National Air quality Objectives in accordance with the National Planning Policy Framework (NPPF) and policy 4/14 of the Cambridge Local Plan (2006).

4. All collections from or deliveries to the site during the operational phase shall only be permitted / undertaken as follows:

a) between the hours of 0800 hrs and 1800 hrs Monday to Friday, 0900 hrs and 1300hrs on Saturdays. There shall be no collections or deliveries on Sundays and any Bank / Public Holiday.

b) all Heavy Duty Vehicle deliveries/collections (HDV - defined as any vehicle over a maximum gross weight of 3.5 tonnes) shall only occur inside the main structures workshop / lab - strong floor area and support space (as detailed / annotated on Drawing Number EM00025-GAL-CE-GR-DR-A-40020 - Ground Floor Plan), with the external acoustic doors fully closed at all times save for the entry and exit of the vehicle, no external unloading or loading of HDVs is permitted.

c) when deliveries/collections occur directly via external acoustic doors into the main structures workshop / lab - strong floor area and or support space these said areas shall not be in use (no noise generating experiments, tests or similar noise generating activities permitted in main structures workshop / lab - strong floor area and support space in order to limit internal noise breakout).

d) the only exception to b. and c. above shall be general trade waste collections which shall be permitted externally.

Reason: To protect the amenity of nearby properties. (Cambridge Local Plan 2006 policies 3/4 and 4/13).

5. With the exception of general trade waste collections only 12 Heavy Duty Vehicle (HDV - defined as any vehicle over a maximum gross weight of 3.5 tonnes) collections from or deliveries to the site and approved use shall be permitted per year (24 HDV movements to and or from the site in total).

With the exception of general trade waste collections there shall be no more than 1 HDV collection / delivery occurrence per any single hour period (no more than two vehicle movements per any hour)

A detailed log record of the date, time of arrival / departure, vehicles details (vehicle make and model) and vehicle registration details of all HDV collections and deliveries to the site shall be kept at all times and retained for a rolling period of 2 years. At the request of the local authority the said log shall be made available within a maximum period of seven days.

Reason: To protect the amenity of nearby properties. (Cambridge Local Plan 2006 policies 3/4 and 4/13).

6. The eastern service road (as detailed / annotated on Drawing Number. EM00025-GAL-CE-XX-DR-A-4001 - Proposed Site Layout) shall only be used by vehicles servicing the development / building hereby approved. For the avoidance of doubt the said service road shall not be used to service any other existing building on the West Cambridge Site present at the time of the grant of permission apart from temporarily during the construction stage.

Reason: To protect the amenity of nearby properties. (Cambridge Local Plan 2006 policies 3/4 and 4/13).

7. The storage of materials, the use of forklifts or similar equipment used for the lifting, carrying and movement of materials / items including loading and unloading activities and the use of powered plant and equipment associated with the approved use shall not be permitted externally at ground floor level on the eastern façade / side of the main building to the eastern service road.

Reason: To protect the amenity of nearby properties. (Cambridge Local Plan 2006 policies 3/4 and 4/13).

8. Save for all external windows into office rooms on the first and second floors, when noise generating academic and research activities are undertaken within the ground floor CSC workshop, sensor maintenance room, mains structures workshop (inc strong floor and support space), concrete and durability laboratory and first floor void over main structures workshop / lab and façade engineering laboratory as highlighted on the attached Eastern Elevation (Drawing Number. EM00025-GAL-CE-XX-DR-A-42020 - West & East Elevation) all external windows and doors that serve those spaces shall be kept closed at all times during those activities. All activities associated with the approved use shall be carried out internally.

Reason: To protect the amenity of nearby properties. (Cambridge Local Plan 2006 policies 3/4 and 4/13).

9. 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 immissions, from and attributable to operation of the site and approved use when collectively measured at the property boundary of any residential 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 in the table below:

Operational Sound / Noise Rating Levels

Operational Sound / Noise Rating Levels (all free field)		
Monday to Friday	Saturday and Sundays (including public holidays)	Time Period
42 dB LAeq, 1 hour	42 dB LAeq, 1 hour	Day (0800 – 1800hrs) during any single one hour reference period
42 dB LAeq, 1 hour	41 dB LAeq, 1 hour	Evening (1800 – 2300hrs) during any single one hour reference period
40 dB LAeq, 15 mins maximum noise level of 55 dB LAmax for individual events	37 dB LAeq, 15 mins maximum noise level of 55 dB LAmax for individual events	Night (2300 – 0800hrs) during any single 15 minute reference period

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.

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.

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 2006 policies 3/4 and 4/13).

10. a) Prior to any above ground works a detailed noise and vibration insulation / mitigation scheme for the eastern façade of the building, in order to minimise and control the level of noise/vibration emanating from the approved use and to protect the amenity of residential properties shall be submitted to and approved in writing by the Local Planning Authority.

The said noise and vibration insulation / mitigation scheme for the eastern façade of the building shall include:

- i. sound reduction indices (R) of the airborne sound insulation properties / performance (in octave and 1/3 octave frequencies) for each external building façade construction element- walls/panels, windows and doors including any acoustic doorsets. The sound reduction index performance for each element shall be certified by official "third party" laboratories according to relevant international and or national standards.
- ii. the airborne sound insulation performance of the external composite building façade
- iii. detailed architectural construction and engineering specifications and drawings (with sections) for each composite element of the external eastern building façade and the main structure workshop inclusive of strong floor (structural floating strong floor and acoustically isolated 'Super Floor - Box in Box Containment System')

iv. operational noise data for any acoustic door opening / closing mechanism

v. administrative/management noise mitigation controls, as appropriate

The noise and vibration insulation / mitigation scheme for the building shall be in accordance with the principles, operational noise / vibration levels and mitigation measures and recommendations detailed in the submitted 'Noise and Vibration Impact Assessment - Prepared by Max Fordham, Submitted as part of the planning application for the Civil Engineering Building On the West Cambridge Site, Madingley Road, Cambridge - Version Rev F Dated October 2016 including APPENDIX C - VIBRATION IMPACT ASSESSMEN Ground vibration planning statement: Smith & Wallwork Ltd 7th October 2016 (rev 1) ' and shall demonstrate compliance with the operational sound / noise rating levels detailed in condition xxx above.

The development shall be constructed, operated and fully maintained thereafter in strict accordance with the noise and vibration insulation/mitigation scheme as approved.

b) Before the development/use hereby approved / permitted is occupied, a scheme for the insulation of operational plant and equipment to include mechanical and electrical building services and electricity transformer in order to minimise the level of noise emanating from the said plant shall be submitted to and approved in writing by the local planning authority.

The noise insulation / mitigation scheme shall be in accordance with the principles, operational noise levels and mitigation measures and recommendations detailed in the submitted 'Noise and Vibration Impact Assessment - Prepared by Max Fordham, Submitted as part of the planning application for the Civil Engineering Building On the West Cambridge Site, Madingley Road, Cambridge - Version Rev F Dated October 2016' and shall demonstrate compliance with the operational sound / noise rating levels detailed in condition 9 above

The scheme as approved shall be fully implemented before the use hereby permitted is commenced and retained thereafter.

Reason: To protect the amenity of nearby properties. (Cambridge Local Plan 2006 policies 3/4 and 4/13).

11. Prior to occupation of development an updated Servicing and Operational Noise Minimisation Management Plan / Scheme shall be submitted in writing to the Local Planning Authority (LPA) for approval. This shall include details of site wide measures to be undertaken and implemented to mitigate and reduce noise activities / operations. The approved plan / scheme shall be implemented and retained thereafter unless otherwise approved in writing by the LPA and shall be reviewed and revised as necessary at the reasonable request of the LPA.

The Plan / Scheme should include consideration of but not exhaustively the following:

- a) Advice and policy for drivers of service vehicles to minimise noise
- b) Consideration of the integration, interrelationship and connectivity with any future proposed engineering blocks / buildings that will form part of the eastern edge of the wider CUED 'Inset' Masterplan
- c) Implementation of a complaints procedure for verifying and responding to complaints about noise / vibration

Reason: To protect the amenity of nearby properties. (Cambridge Local Plan 2006 policies 3/4 and 4/13).

12. Heating and cooling of the building shall only be provided by a ground source (GSHP) heat pump system with heat recovery. The use of any combustion appliances / plant shall not be permitted. "Combustion appliance" means a fixed appliance which is designed to burn solid fuel, gas, oil or any other fuel source.

Reason: To protect local air quality and human health by ensuring that the production of air pollutants such as nitrogen dioxide and particulate matter are kept to a minimum during the lifetime of the development and to contribute toward National Air quality Objectives in accordance with the National Planning Policy Framework (NPPF) and policy 4/14 of the Cambridge Local Plan (2006)

13. Prior to the occupation/use of the development, details of equipment and systems for the purpose of extraction, filtration and abatement of odours, fumes and dust or similar particles shall be submitted to and approved in writing by the local planning authority. The approved extraction/filtration details / scheme shall be installed before the use hereby permitted is commenced and shall be retained thereafter.

Any approved scheme or system installed shall be regularly maintained in accordance with the manufacturer's specification / instructions to ensure its continued satisfactory operation to the satisfaction of the Local Planning Authority.

Reason: To protect the amenity of nearby properties.
(Cambridge Local Plan 2006 policy 4/13)

14. Prior to the installation of any artificial lighting an external artificial lighting scheme / impact assessment shall be submitted to and approved in writing by the local planning authority. The scheme shall include details of any artificial lighting of the site (external and internal building lighting) and an artificial lighting impact assessment with predicted lighting levels at proposed and existing properties shall be undertaken (including horizontal / vertical isolux contour light levels and calculated glare levels). Artificial lighting on and off site shall meet the Obtrusive Light Limitations for Exterior Lighting Installations for an Environmental Zone - E2 in accordance with the Institute of Lighting Professionals - Guidance Notes for the Reduction of Obtrusive Light - GN01:2011 (or as superseded) and any mitigation measures to reduce and contain potential artificial light spill and glare as appropriate shall be detailed.

The artificial lighting scheme as approved shall be fully implemented before the use hereby permitted is commenced and shall be retained thereafter.

Reason: To protect the amenity of nearby properties.
(Paragraph 125 of the National Planning Policy Framework and Cambridge Local Plan 2006 policy 4/13)

15. 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 (Cambridge Local Plan 2006 policy 8/16 and Supplementary Planning Document 'Sustainable Design & Construction' 2007).

16. 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 unless otherwise agreed 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 (Cambridge Local Plan 2006 policy 8/16 and Supplementary Planning Document 'Sustainable Design & Construction' 2007).

17. The approved renewable energy technologies shall be fully installed and operational prior to the first occupation of the development 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.

Reason: In the interests of reducing carbon dioxide emissions and to ensure that the development does not give rise to unacceptable pollution. (Cambridge Local Plan 2006 policy 8/16).

18. 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 submitted scheme will need to meet the Council's requirement for public art as set out in the Planning Obligation Strategy 2010 and the associated public art plan for Cambridge. 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 or within a timeframe set out and agreed within the submitted scheme.

Reason: In the interest of creating successful, high quality, attractive environments, Cambridge Local Plan 2006 policy 3/7.

19. No occupation of the proposed CEB shall take place before a schedule of landscape maintenance for a minimum period of five years has been submitted to and approved in writing by the local planning authority. The schedule shall include details of the arrangements for its implementation.

Reason: To ensure that the landscaped areas are maintained in a healthy condition in the interests of visual amenity. (Cambridge Local Plan 2006 policies 3/4, 3/11 and 3/12)

20. No occupation of the proposed CEB shall take place before a woodland and management and maintenance scheme has been submitted for the landscaped bund to the immediate east of the application site. The development shall be carried out in accordance with the approved details.

Reason: To ensure that the landscaped areas are maintained in a healthy condition in the interests of visual amenity. (Cambridge Local Plan 2006 policies 3/4, 3/11 and 3/12)

21. Prior to occupation of the development, details of facilities for the covered, secured parking of bicycles for use in connection with the development hereby permitted shall be submitted to and approved by the local planning authority in writing. The approved facilities shall be provided in accordance with the approved details before use of the development commences.

Reason: To ensure appropriate provision for the secure storage of bicycles. (Cambridge Local Plan 2006 policy 8/6)

22. Prior to the occupation of the building hereby approved, full details of a travel plan detailing the measures taken to promote sustainable travel modes shall be submitted to and approved by the Local Planning Authority. The travel plan shall be implemented in accordance with that agreed.

Reason: In the interests of promoting sustainable travel modes for future users of the building, Cambridge Local Plan 2006 policy 8/3

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 1 Section 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 3839.

Contact details for monitoring personnel, site manager including out of hours emergency telephone number should be provided.

INFORMATIVE: Dust condition informative

To satisfy the condition requiring the submission of a program of measures to control airborne dust above, the applicant should have regard to:

-Council's Supplementary Planning Document - "Sustainable Design and Construction 2007":

<http://www.cambridge.gov.uk/public/docs/sustainable-design-and-construction-spd.pdf>

-Guidance on the assessment of dust from demolition and construction

http://iaqm.co.uk/wp-content/uploads/guidance/iaqm_guidance_report_draft1.4.pdf

- Air Quality Monitoring in the Vicinity of Demolition and Construction Sites 2012

http://www.iaqm.co.uk/wp-content/uploads/guidance/monitoring_construction_sites_2012.pdf

-Control of dust and emissions during construction and demolition - supplementary planning guidance

https://www.london.gov.uk/sites/default/files/Dust%20and%20Emissions%20SPG%208%20July%202014_0.pdf

INFORMATIVE: Ventilation associated with fume and microbiological cupboards / cabinets shall be installed (including consideration of flue / exhaust termination discharge heights that are required for adequate dispersion) in accordance with national and industry standards, codes of practice and technical guidance, such as:

- Building Regulations
- BS EN 14175 - 'Fume Cupboards' - Parts 1 to 7
- BS 7989:2001 Specification for recirculatory filtration fume cupboards
- BS 5726 various - Microbiological safety cabinets.

INFORMATIVE: Building ventilation fresh air intake louvres / points

To ensure no recirculation of emissions inside the building from any proposed fume cupboards, dust extraction systems, combustion plant or similar, it is recommended that any fresh air intake louvres / points for building ventilation or heating, ventilation and air conditioning or handling (HVAC) systems are located as far from flues/stacks discharge terminations as possible and where possible upwind of the flues/stacks.

INFORMATIVE: Food Registration / Safety Informative

As the premises may have a kitchen providing food for staff or similar or facilities for food preparation the applicant is reminded that under the Food Safety Act 1990 (as amended) the premises will need to be registered with Cambridge City Council. In order to avoid additional costs it is recommended that the applicant ensure that the kitchen, food preparation and foods storage areas comply with food hygiene legislation, before construction starts. Contact the Commercial Team at Cambridge City Council on telephone number (01223) 457890 for further information.