

STRIDE TREGLOWN

**PLANNING, DESIGN &
SUSTAINABILITY STATEMENT**
CHANCELLOR'S BUILDING

UNIVERSITY OF READING

STRIDE TREGLOWN JOB NO.

153222

PREPARED BY

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1. Introduction

1.1. The Application

1.1.1 Stride Treglown, on behalf of the University of Reading, in accordance with the Government's National Planning Policy Framework (NPPF) for England, submit this statement in support of a full planning application for 'permanent retention of Chancellor's Building with associated landscape and drainage strategy.' Planning permission ref. 160574 was granted on the 17th June 2016 for "Temporary Academic and Office Accommodation" on the site of the former Rural Studies Centre at the University of Reading, known as the Chancellor's Building. The Chancellor's Building currently accommodates the Department of Construction Management and a substantial amount of general teaching space.

1.1.2 Condition 1 of Planning Permission 160574 states:

"The building which is the subject of this permission shall be removed and the land shall be restored to its former condition not later than the expiration of five years beginning with the date on which this permission was granted, in accordance with a scheme of works which shall first have been submitted to and approved in writing by the local planning authority.

Reason: The appearance of the building is unsuitable for this location in the long term, in the interests of the character of the area. The drainage system does not fully address the need for a sustainable solution. The building does not fully comply with the Council's sustainable building standards. In accordance with Policies CS1, CS7 and CS35 of the Reading Borough LDF Core Strategy 2008 (altered 2015), Policies DM1 and DM2 of the Reading Borough Sites and Detailed Policies Document 2012 (altered 2015) and Sustainable Design and Construction SPD 2011."

1.1.3 The Chancellor's building was originally conceived as a temporary building which would support the redevelopment of the University's URS building. The building was planned to serve the need for decant space whilst a complete refurbishment of the URS building was undertaken. The URS project is currently on hold following the listing of the building in 2017. This has had knock on consequences for the occupation of the Chancellor's building which will need to remain operational indefinitely. This planning application is therefore seeking to permanently retain the Chancellor's Building on the site.

1.2. Site Location and Description

1.2.1 The Chancellor's Building is of a modular type of construction and spans two floors with 14 teaching rooms varying from 24-150 seats, two teaching/research labs, a PC lab, along with social break out spaces. The layout of the building has been designed to further encourage the School's community environment, with academic offices situated around these social areas. The building also offers more specialist features, including a dedicated resource centre, a new Building Information Modelling (BIM) lounge and an immersive virtual reality 'CAVE' that enables students to interact with 3D digitised environments.

1.2.2 This purpose-built accommodation has been designed to house the School of Construction Management and Engineering. The £8.4 million accommodation provides students and staff with a versatile and stimulating teaching space, packed with specialist equipment and modern fittings.

- 1.2.3 Either side of the site are areas of green space. To the west this separates the site physically and visually from Shinfield Road and the grade II listed Whiteknights Park House. On the other side, the green space provides visual and physical separation from the Russell Building to the south east and the main campus, including the grade II listed Blandford Lodge. To the north of the site, on the opposite side of Chancellor's Way, are the University sports pitches and beyond these Queen's Drive and the Queen's Drive car park.
- 1.2.4 There are trees of varying species, age and size surrounding the site. Public footpath no.9 runs along Chancellor's Way in front of the building. The footpath continues through the campus to connect with Whiteknights Road at Earley Gate.



Image 1 – Aerial View of the Site

1.3. Pre-application Advice

- 1.3.1 Pre-application advice was provided on the proposed retention of the Chancellor's Building by Reading Borough Council in December 2019. In summary, the pre-application advice provided advised that the following key considerations would need to be addressed as part of the application for the permanent retention of the building:
- *The Officer report for the 160574/FUL permission fully appraised the erection of a two-storey temporary building in this location. Planning permission was ultimately granted, but for reasons of design and appearance, drainage and environmental sustainability the building was only considered to be appropriate for the five-year temporary period applied for. It is considered that significant upgrades are required to bring it up to a standard suitable for long term retention.*

- *It is considered that the building could be better screened with the planting of trees to the Chancellor's Way frontage. Views of the building extend across the sports pitches from Queen's Drive to the north. There is a limited amount of space immediately in front of the building, but plenty of room for tree planting to the northern side of Chancellor's Way. The planting of several trees of native species would be considered appropriate and would accord with Policy EN14.*
- *The permanent retention of the building affords the opportunity to add visual interest by upgrading the external facades. The existing external appearance is fairly basic. It is suggested that the use of distinctive, high quality materials would add visual interest, aiding the permanent appearance of the building.*
- *As per the Ecology consultation response, bats have been detected historically on the site. To address concern that bats may be roosting in the building, an ecological statement should accompany any future submission.*
- *The original permission for the building secured the provision of disabled parking spaces, and 80 cycle parking spaces. Users of the building would continue to utilise the existing access and parking arrangements within the wider Whiteknights Campus. However, the previous transport assessment was made on the basis that the building would be temporary in nature. Therefore, any future submission should include a transport assessment to consider the impact of the permanent retention of the building on the functioning of the transport network.*
- *A carefully considered scheme of landscaping should address the SuDS requirements. Any future submission should therefore include a proposed drainage strategy, which can be overlaid against the proposed landscaping scheme.*
- *Any future submission should include a detailed statement on how the requirements of policies CC2 (Sustainable Design and Construction), CC3 (Adaptation to Climate Change), CC4 (Decentralised Energy) and CC5 (Waste Minimisation and Storage) will be met. If any of the required standards cannot be met, robust justification will be required. It is advised that with careful consideration of the above matters, including the upgrade of the external facades of the building, improvements to landscaping and drainage, the environmental sustainability of the building could be improved to an acceptable standard. Adherence to these policy requirements will be essential to secure the permanent retention of the building.*

2. Planning Policy Context

2.1. National Planning Policy Framework (June 2019)

- 2.1.1 Planning law requires that applications for planning permission must be determined in accordance with the development plan unless material considerations indicate otherwise (*Section 38(6) of the Planning and Compulsory Purchase Act 2004 and section 70(2) of the Town and Country Planning Act 1990*).
- 2.1.2 The National Planning Policy Framework (NPPF), originally published in March 2012 and revised in February and June 2019, sets out the Government's planning policies for England and is a material consideration in planning decisions.
- 2.1.3 Planning law requires that applications for planning permission must be determined in accordance with the development plan unless material considerations indicate otherwise (*Section 38(6) of the Planning and Compulsory Purchase Act 2004 and section 70(2) of the Town and Country Planning Act 1990*).
- 2.1.4 The National Planning Policy Framework (NPPF) centres on the 'presumption in favour of sustainable development', which is seen as key to both plan making and decision taking.
- 2.1.5 Chapter 4 relates to decision making and makes reference to the importance of pre-application engagement with the Local Planning Authority (LPA). Para. 39 states that "early engagement has significant potential to improve the efficiency and effectiveness of the planning application system for all parties. Good quality preapplication discussion enables better coordination between public and private resources and improved outcomes for the community."
- 2.1.6 Chapter 9 of the NPPF focuses on promoting sustainable transport. It is expected that transport issues are considered from the earliest stages of plan-making and development proposals so that opportunities from proposed transport infrastructure are realised and that opportunities to promote walking, cycling and public transport use are identified and pursued (Para 102).
- 2.1.7 Local planning authorities are encouraged to make decisions that promote an effective use of land in meeting the need for homes and other uses, while safeguarding and improving the environment and ensuring safe and healthy living conditions. This should be done in a way that makes as much use as possible of previously developed or 'brownfield' land (Para 117).
- 2.1.8 Good design is considered to be key in achieving sustainable development (Para 124), as this ensures the supply of places that people want to live and work. Good design ensures the longevity of a development often through quality (Para 127). Consideration should be paid to the local context to ensure consistency, although design should be tailored to each circumstance (of each place) and allow for a degree of variety. All proposals should be inclusive in their design, to ensure a high quality of amenity for current and future users and provide a safe environment that can deter crime and disorder.

2.2. Reading Borough Local Plan (November 2019)

- 2.2.1 The Reading Borough Local Plan was adopted on the 4th November 2019 and sets out the planning policies for development in Reading up to 2036. The Local Plan replaces the previous development plan documents – the Core Strategy, Reading Central Area Action Plan and Sites and Detailed Policies Document – which no longer apply.

Policy CC1: Presumption in Favour of Sustainable Development

- 2.2.2 The Government has placed the presumption in favour of sustainable development at the heart of its approach to planning, and this is articulated in the NPPF. This policy aims to ensure that decisions are taken in line with that presumption. In doing so, it helps to achieve all of the core objectives.

Policy CC2: Sustainable Design and Construction

- 2.2.3 Proposals for new development, including the construction of new buildings and the redevelopment and refurbishment of existing building stock, will be acceptable where the design of buildings and site layouts use energy, water, minerals, materials and other natural resources appropriately, efficiently and with care and take account of the effects of climate change.

- 2.2.4 To meet these requirements:

- All major non-residential developments or conversions to residential are required to meet the most up-to-date BREEAM 'Excellent' standards, where possible;
- All minor non-residential developments or conversions to residential are required to meet the most up-to-date BREEAM 'Very Good' standard as a minimum;
- All non-residential development or conversions to residential should incorporate water conservation measures so that predicted per capita consumption does not exceed the appropriate levels set out in the applicable BREEAM standard. Both residential and non-residential development should include recycling greywater and rainwater harvesting where systems are energy and cost effective.

Policy CC3: Adaptation to Climate Change

- 2.2.5 All developments will demonstrate how they have been designed to incorporate measures to adapt to climate change. To achieve this, it is expected that proposals involving existing buildings demonstrate how they have been designed to maximise resistance and resilience to climate change for example by including measures such as solar shading, thermal mass, heating and ventilation of the building and appropriately coloured materials in areas exposed to direct sunlight, green and brown roofs, green walls etc.; incorporate trees and other planting, where appropriate as part of a landscape scheme, to provide shading of amenity areas, buildings and streets and to help to connect habitat; and minimise the impact of surface water runoff from the development in the design of the drainage system.

Policy CC4: Decentralised Energy

- 2.2.6 In meeting the sustainability requirements of the plan, non-residential development of over 1,000sqm shall consider the inclusion of decentralized energy provision, within the site, unless it can be demonstrated that the scheme is not suitable, feasible or viable for this form of energy provision. Where there is existing decentralized energy provision present within the vicinity of an application site, further non-residential developments of 1,000sqm or more will be expected to link into the existing decentralized energy network or demonstrate why this is not feasible.

Policy CC5: Waste Minimisation and Storage

- 2.2.7 Development should demonstrate measures to minimise the generation of waste in the construction, use and life of buildings and promote more sustainable approaches to waste management, including the reuse and recycling of construction waste and the promotion of layouts and designs that provide adequate, well-designed space to facilitate waste storage, reuse, recycling and composting.

Policy CC6: Accessibility and Intensity of Development

- 2.2.8 The scale and density of development will be related to its level of accessibility by walking, cycling and public transport to a range of services and facilities, with the densest and largest scale development taking place in the most accessible locations.

Policy CC7: Design and the Public Realm

- 2.2.9 All development must be of high design quality that maintains and enhances the character and appearance of the area of Reading in which it is located. The various components of development form, including: -

- Layout: urban structure and urban grain;
- Landscape;
- Density and mix;
- Scale: height and massing; and
- Architectural detail and materials

- 2.2.10 Developments will also be assessed to ensure that they: -

- Respond positively to their local context and create or reinforce local character and distinctiveness, including protecting and enhancing the historic environment of the Borough and providing value to the public realm;
- Create safe and accessible environments where crime and disorder or fear of crime does not undermine quality of life or community cohesion;
- Address the needs of all in society and are accessible, usable and easy to understand by them, including providing suitable access to, into and within, its facilities, for all potential users, including disabled people, so that they can use them safely and easily;
- Are visually attractive as a result of good, high-quality built forms and spaces, the inclusion of public art and appropriate materials and landscaping.

Policy EN1: Protection and Enhancement of the Historic Environment

- 2.2.11 Historic features, areas of historic importance and other elements of the historic environment, including their settings will be protected and where possible enhanced. This will include:

- Listed Buildings;
- Conservation Areas;
- Scheduled Monuments;
- Historic parks and gardens; and
- Other features with local or national significance, such as sites and features of archaeological importance, and assets on the Local List.

Policy EN12: Biodiversity and the Green Network

- 2.2.12 On all sites, development should not result in a net loss of biodiversity and geodiversity and should provide a net gain for biodiversity wherever possible. Development should:
- Protect and wherever possible enhance features of biodiversity interest on and adjacent to the application site, incorporating and integrating them into development proposals wherever practicable; and
 - Provide new tree planting, wildlife friendly landscaping and ecological enhancements (such as wildlife ponds, bird and bat boxes) wherever practicable.

Policy EN14: Trees, Hedges and Woodland

- 2.2.13 Individual trees, groups of trees, hedges and woodlands will be protected from damage or removal where they are of importance, and Reading's vegetation cover will be extended. New development shall make provision for tree retention and planting within the application site... to improve the level of tree coverage within the Borough, to maintain and enhance the character and appearance of the area in which a site is located, to provide for biodiversity and to contribute to measures to reduce carbon and adapt to climate change. Measures must be in place to ensure that these trees are adequately maintained.

Policy EN15: Air Quality

- 2.2.14 Development that would detrimentally affect air quality will not be permitted unless the effect is to be mitigated. The following criteria should be taken into account:
- Whether the proposal, including when combined with the cumulative effect of other developments already permitted, would worsen air quality;
 - Whether the development is within, or accessed via, an Air Quality Management Area; and
 - Whether it can be demonstrated that a local worsening in air quality that would not detrimentally affect human health or the environment would be offset by an overall improvement in air quality, for instance through reduction in the need to travel.

Policy EN16: Pollution and Water Resources

- 2.2.15 Development will only be permitted where it would not be damaging to the environment and sensitive receptors through land, noise or light pollution; where it would result in no deterioration in, or ideally enhance, ground and surface water quality; and where adequate water resources, sewerage and wastewater treatment infrastructure will be in place to support the proposed development prior to occupation.

Policy EN18: Flooding and Sustainable Drainage Systems

- 2.2.16 All major developments must incorporate sustainable drainage systems (SuDS) as appropriate and in line with the Government's Technical Standards. Smaller schemes are encouraged to incorporate SuDS, where possible.

Policy TR1: Transport

- 2.2.17 All development proposals should make appropriate provision for works and contributions to ensure an adequate level of accessibility and safety by all modes of transport from all parts of a development, particularly by public transport, walking and cycling, in accordance with any agreed transport assessment submitted as part of the application.

Policy TR3: Access, Traffic and Highway-Related Matters

2.2.18 In determining proposals involving the generation of additional trips on the transport network, consideration will be given to the effect on safety, congestion and the environment. Development will only be permitted where:

- The development would not have a detrimental impact on the functioning of the transport network;
- The proposals would not be detrimental to the safety of users of the transport network, including pedestrians and cyclists;

Policy ER2 – Whiteknight Campus, University of Reading

2.2.19 The University of Reading is a national and international educational establishment of strategic importance which will continue to adapt and expand over the plan period. The Whiteknight Campus as shown on the proposals map will continue to be a focus for development associated with the University of Reading. Such development may include additional staff, teaching, research and enterprise accommodation, infrastructure and services, and sports and leisure facilities among other uses. Access to and within the site will be improved where necessary.

2.3. Supplementary Planning Documents (SPD)

- Sustainable Design and Construction SPD is intended to guide developers and decision-makers on the implementation of key sustainability policies set out in the Reading Local Plan, namely CC2-CC5, EN18 and H5. It will be a material consideration in the determination of planning applications. This document also brings together relevant national guidance. It provides practical advice on forms of sustainable design and construction, as well as waste minimisation that will meet these policy requirements. It also details how policies will be applied. This should assist applicants in ensuring that the relevant information is submitted at the appropriate stage of the application and development process.

2.4. Planning History

2.4.1 The site of the Chancellor's Building has been subject to the following planning submissions:

- 061006/OUT – Outline application for the erection of a 151 guestroom hotel and conference centre (access, layout and landscaping) – Refused 24/04/07
- 070909/OUT – Outline application for the erection of a 151 guestroom hotel and conference centre with adjacent car parking, and a new car park on Queens Drive totalling 400 spaces (access, scale, layout and landscaping) (re-submission of 061006/OUT) – Permitted 28/09/07
- 100726/EXT – Application for an extension of the time limit for implementation of planning permission 070909/OUT – Permitted 16/09/10
- 151284/DEM – Application for prior notification of proposed demolition (Rural History Centre building) – Prior approval not required 21/09/15
- 151895/PRE – Temporary accommodation units comprising 3,400 square metres of floor space provided over two floors as an initial phase – Observations sent 23/02/16
- 160574/FUL – Temporary academic and office accommodation – Permitted 17/06/16
- 161504/APC – Application for approval of details reserved by condition 4 of permission
- 160574/FUL (tree protection) – Condition discharged 23/08/16
- 161923/APC – Application for approval of details reserved by conditions 5, 6, 7, 9 and 10 of permission

3. Design and Access

3.1. Overview

- 3.1.1 This proposal solely relates to retaining the building that was completed following (temporary) approval in June 2016. The building provides 3,638 (GEA) square metres of floor space over 2 floors. The structure is a high-quality modular building that connects to form a fully functioning facility with teaching, office and student space.
- 3.1.2 A Post Occupancy Evaluation (POE) was carried out of the building and a report produced in May 2020 in order to understand the user experience of the building for staff and students. The finding of this can be summarised as:
- The functionality and space planning of the building appeared to meet users' reasonable expectations.
 - Security and safety appeared to meet users' reasonable expectations.
 - The performance of heating, ventilation and air conditioning did not appear to meet performance criteria or reasonable expectations.
 - Noise transmission and movement in corridors did not appear to meet users' reasonable expectations. It was recommended that an assessment be carried out of noise and detectable movement.
 - The functional performance of toilet and related sanitary and water facilities does not appear to meet the expectations of users or Maintenance. It was recommended that a review of the capacity of sanitary facilities be carried out.
- 3.1.3 The results of the POE have been combined with pre-application advice received from RBC in order to address main issues governing the retention of the building. These can be summarised as:
- Sustainability – Conserving energy and resources in terms of how the building is used.
- Landscaping – to address biodiversity net gain and assist in visual enhancements to the building.
- Drainage – to address sustainable drainage requirements.
- Visual amenities – to improve the visual appearance of the building noted as secondary to the above considerations.

3.2. Layout and Appearance

- 3.2.1 There are no changes proposed to the layout of the building as approved and built, thereby having a neutral effect upon the campus.
- 3.2.2 The original layout of the building was designed along two principal axis; the deeper plan element allowed the creation of larger classrooms and teaching space at ground and first floor, and a narrower element built on the north/south axis is appropriate for smaller classrooms and offices. The layout enables the creation of sheltered courtyards on the southern side to promote congregation spaces outside.

3.2.3 The planning committee report dated 1st June 2016 commented that:

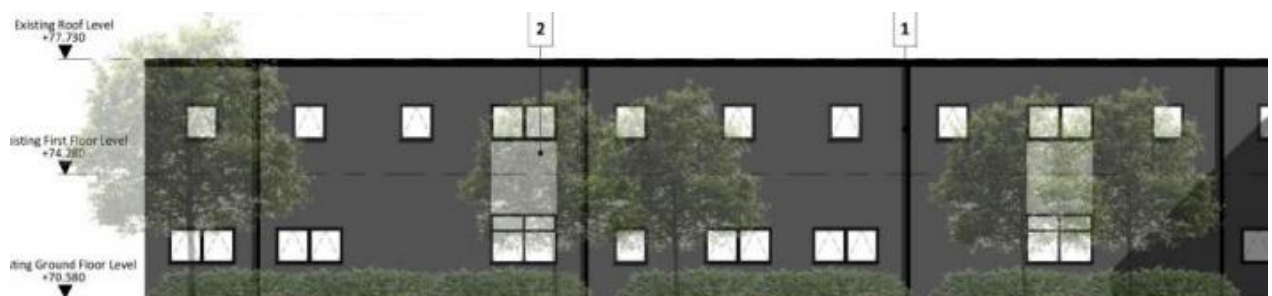
“It is considered that the proposed height and massing is acceptable (having regard to the previously approved scheme for a 4 storey hotel on the site), and on the basis that the proposal would not appear overly dominant when viewed from the surrounding campus or Shinfield Road. It is acknowledged that attempts have been made by the applicant to design a building with an appearance that is better than a typical prefabricated temporary building. The use of coloured cladding panels, some variation in the window design, and provision of canopies does add visual interest to some extent.”

3.2.4 Consideration has been given to options such as recladding the building or adding a new facade but these options were difficult to achieve given that they were considered likely to compromise the building's structure. A light brise soleil structure was initially given design consideration, however this was compared with other measures to manage solar gain and considered not as effective. This is covered later in this statement.

3.2.5 The proposal for permanent retention of the building proposes to paint the existing render system. This was originally painted in the university's emblematic orange and grey, however it is considered that the orange, in particular, is a strong colour element that draws attention to the building.

3.2.6 To address the requirements of policy CC7 - Design and the Public Realm, two different tones of grey have been selected to assist with the building appearing more recessive within the context of the campus. Policy CC7 requires that development 'responds positively to the local context and creates or reinforces local character and distinctiveness, including protecting and enhancing the historic environment of the Borough and providing value to the public realm.'

Image 2 – Proposed west elevation – painted grey



3.2.7 The proposal also incorporates timber fencing elements to surround the external plant which can appear unattractive. The combination of proposed painting and timber surrounds creates a more sympathetic appearance of the building, consistent with policy CC7.

3.3. Landscape Proposals

3.3.1 The landscaping scheme has been conceived with two main purposes in mind;

- i) To increase biodiversity net gain across the site as required by local plan policies CC3 – Adaptation to Climate Change, EN12 – Biodiversity and Green Network and EN14 – Trees, hedges and woodland;
- ii) To enhance the visual amenities at the site in both immediate views of the building and long-range views across the sports pitches when viewed from Queen’s Drive, consistent with policy CC7 Design and the public realm and as advised in pre-application advice from RBC.

3.3.2 The landscaping strategy that supports the proposals shows new trees proposed to the west of the building, along the perimeter of the existing vehicular parking area. In addition, a line of tree planting is proposed to the north of Chancellor’s Way, along the southern boundary of the existing sports pitches. All these trees will assist in screening the view of the building across the sports pitches and contribute to enhancing the character and appearance of the site in this part of the campus consistent with policy CC7.

3.3.3 6no. new timber raised planters with feature trees are proposed to be installed to the north of the building on the existing grassed space, adjacent the pedestrian footpath which extends along Chancellor’s Way.

3.3.4 A wildflower seed mix on existing turf/lawn areas to the north west and south west of the building and surrounding the 2no. new pond/ SuDS features. Decorative shrub planting is proposed to the north and west of the building. The variance and combination of wildflower areas, ornamental planters and SuDS features have all assisted in contributing to a biodiversity net gain across the site of 22.6%. This is a significant gain and more than meets the advocated 10% in the forthcoming Environment Bill, consistent with policies EN12 – Biodiversity and Green Network, which requires that developments ‘protect and wherever possible enhance features of biodiversity interest on and adjacent to the application site.’

Image 3 – Post development habitats – Biodiversity Net Gain calculation



3.4. Sustainability

3.4.1 In order to address the outcomes of the POE and key policy considerations, set out in policies CC2 – Sustainable Design and Construction, and Policy CC3 – Adaptation to Climate Change, the following actions have been carried out:

- The university commissioned a 'BREEAM Feasibility Report', which has been produced by Stride Treglown's Sustainability Consultant, a qualified and licenced BREEAM assessor who has undertaken or worked on multiple BREEAM assessments since 2010.
- The university commissioned Troup Bywaters and Anders to undertake a review of the mechanical, electrical and plumbing (MEP) performance of the building.
- The university commissioned Aecom to produce a drainage strategy which supports the planning submission
- The university commissioned EnPlan to produce a landscaping scheme incorporating SuDS and, in association with the ecologists, meet a Biodiversity Net Gain of at least 10%, consistent with the requirements of the forthcoming Environment Bill.
- The university commissioned Ecological Planning and Research to undertake a Biodiversity Net Gain calculation in association with EnPlan

BREEAM – Policy CC2 – Sustainable Design and Construction

3.4.2 The BREEAM feasibility report sought to independently assess the following:

- BREEAM assessment schemes which could be applied to the development
- The likelihood the building could meet the 'Excellent' rating desired
- BREEAM credit criteria it may be possible to adhere to

3.4.3 Having regard to this and given the modular nature of the building The BREEAM feasibility report concluded that:

"Policy CC2 in Reading Local Plan states that that development is required to meet the most up-to-date BREEAM 'Excellent' standards "where possible". In this case, it is the view of an independent BREEAM assessor that it will not be possible to achieve BREEAM Excellent for the Chancellor's building under any BREEAM scheme."

3.4.4 That said para 6.15 of the planning committee report for the original application explains that:

"The submitted Energy and Sustainability statement explains that the current proposals would score very highly in terms of energy use due to the precision with which the units can be built in a factory off-site resulting in high levels of airtightness. Also, in terms of the embodied energy of the buildings and the energy and waste associated with construction due to the efficiencies associated with factory pre-fabrication. The submitted statement suggests a 46% reduction in CO2 emissions over the lifetime of the development, compared with a conventional building constructed in situ. However, the applicant has suggested that the prescriptive nature of BREEAM does not fit well with the type of modular building proposed."

Energy and Sustainability Statement

3.4.5 The Energy and Sustainability Statement that supported the application for temporary permission is attached as Appendix 1 to this statement.

3.4.6 It concludes that:

“The site which has been chosen for the temporary accommodation is inherently sustainable. It is well-related to existing facilities on campus. It is previously developed land. It benefits from convenient access to services (drainage, water supply, etc.) which previously served the Rural History centre Buildings and existing service runs can be used to serve the new development.

The modular construction of the temporary accommodation offers many sustainability benefits. These include reduced resource consumption in the construction of the modules; reduced construction timescales; up to 90% less waste generated on site (volumetric modular construction); reduction of carbon emissions.

The temporary accommodation provider (Built Off Site) has extensive experience and adopts a fabric first approach to the manufacture of its buildings. The performance of the fabric alone is comparable to Passive House standards. Dynamic Thermal modelling of all buildings is done at design stage and the designs developed to ensure that the buildings surpass all building regulations, and the maximum energy efficiency is achieved. Built Offsite buildings routinely achieve an A rating on the EPC certificate, and more than 70 percent of projects delivered over the last 2 years have achieved a BREEAM rating of Very Good or better.”

Solar gain

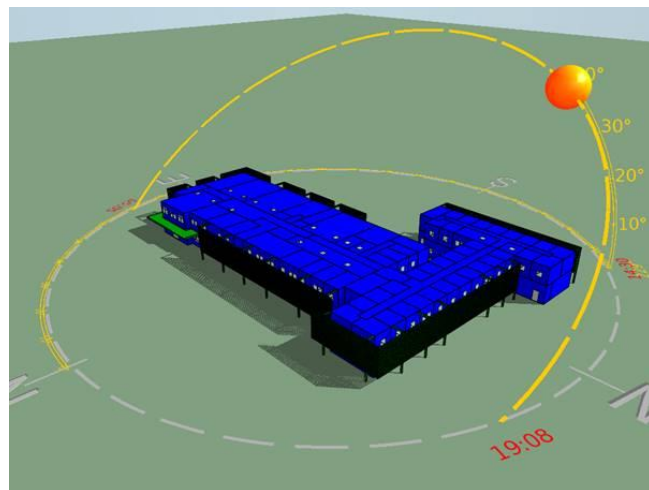
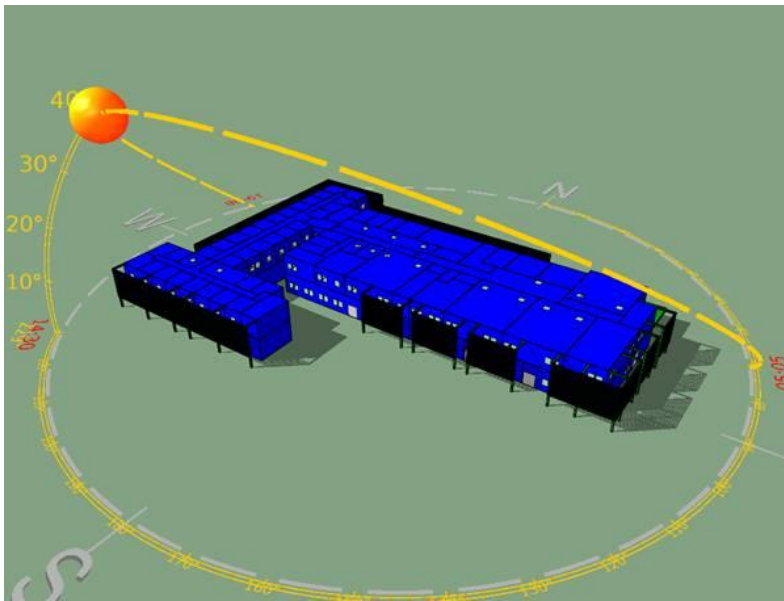
3.4.7 In order to address problems of overheating in some parts of the building identified in the POE, and to improve the energy use and performance of the building in terms of temperature control, a Solar Shading Assessment was undertaken by Troup Bywaters and Anders. The study sought to compare two different types of approaches to managing solar gain; i) the installation of a brise soleil structure on some parts of the building, and ii) the application of solar control film to the existing glazing externally. The purpose of the study was to ascertain the solar gain within the building, and the potential effectiveness of the two solar shading solutions.

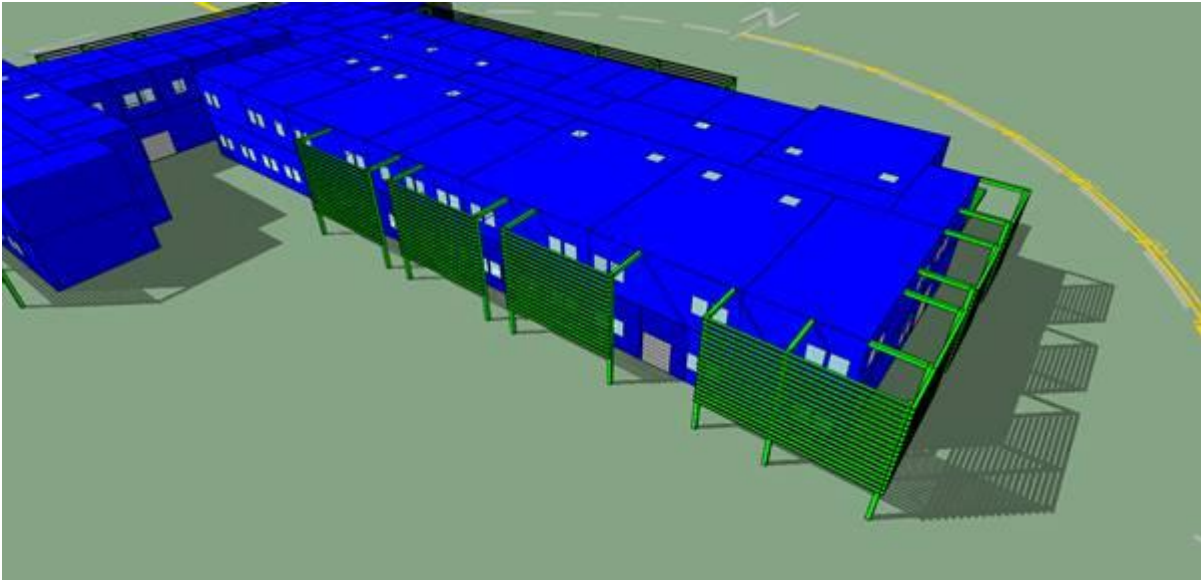
3.4.8 In order to conduct this exercise, a thermal model of the Chancellor’s Building was constructed to simulate the indoor environment and assess the solar gains into the building. The modelling software used for the study was Integrated Environmental Solutions Ltd’s Virtual Environment (IESve) Version 2019.3.1.0. In order to create an accurate representation of the building within the chosen modelling software it was essential to gather and record an array of comprehensive data pertaining to the building. In order to achieve this a variety of different methods and techniques were used, these included:

- Review of Operation & Maintenance Manuals (O&M’s)
- Review of As-Built Drawings

3.4.9 An initial baseline model was constructed based on the current arrangement, in order to ascertain the peak solar gains within each of the spaces at the perimeter on each of the four elevations. Natural shading elements external to the building such as trees, bushes etc were not included. These elements will provide a degree of shading, and thus ultimately reduce the peak solar gain into the spaces, however there are many variables involved when trying to model these elements that including them can affect the results. Given that the main objective of the task was to assess the effectiveness and compare two different solar shading solutions, it is all relative.

- 3.4.10 It is also important to note that this study did not take into consideration daylighting i.e., the distribution of visible radiation in illuminated spaces, such as light levels and daylight factors. This study focuses solely on the solar shading aspects. Finally, it is also important to note that the options modelled as part of the study are notional in the sense that actual dimensions and constructions are subject to particular manufacturers' products and may vary.
- 3.4.11 A second model was then constructed which took the baseline model and applied a local shading device externally to the building to simulate the installation of a timber louvred screening system. The external louvred screening system was modelled within IES using the information provided by GSSarchitecture i.e., Revit model. The external louvred screening system was applied to all four elevations of the building as pictured below.





- 3.4.12 A third model was then constructed which took the baseline model and involved modifying the existing glazing's transmittance and thus its g-value (solar heat gain coefficient), which represents the fraction of incident solar radiation transmitted by a window, in order to simulate the application of a solar control film to the existing glazing externally. The modification to the existing glazing's transmittance was applied to all four elevations of the building. There is a vast array of solar control films available on the market, many of which offer additional benefits such as solar glare reduction, one-way privacy and security. Solar films can be installed onto existing glazing either internally or externally. Installing films externally is far more effective, as external films reflect solar energy before it enters the glazing which reduces the absorbance by the glass, resulting in less solar energy being dissipated inwards, which in turn results in a lower total solar energy transmittance and thus a lower solar heat gain.
- 3.4.13 There is normally some trade off when installing solar films, as the visible transmittance (VT), which is the fraction of the visible spectrum of sunlight that passes through the window (natural light), decreases as the total solar heat gain coefficient (SHGC) is reduced. In addition to reducing the amount of daylight into a space, given that the solar films are not retractable they also reduce useful solar gain in winter too. For the purpose of this study, the solar film considered is a 3M product '3M Prestige 40 Exterior Film'. This is an exterior multi-layer and metal free film based on nanotechnology. It has a uniquely high visual light transmission for a film that has exceptionally high heat reduction capabilities. The film also significantly reduces the amount of UVA and UVB rays which are the main cause of fading. This is the same film which was specified and installed at the Enterprise Centre in order to reduce the peak solar gains and thus heat gains. In our opinion this grade of film offers the best balance between solar heat gain reduction and visible transmittance.
- 3.4.14 Based on the findings from this investigation, for this particular scenario, the solar filming of glazing offers a far more effective solution in comparison to the external louvred screening system from a performance, cost and installation perspective. On average the installation of the solar film offers around a 50% reduction on the solar gain in comparison to the base model.
- 3.4.15 In contrast, the installation of the Brise Soleil offers on average around a 20% reduction on the solar gain in comparison to the base model.

- 3.4.16 In terms of the effectiveness of each solution on each of the four elevations. Regardless of which elevation the solar film is applied too, the reduction in peak solar gain is consistently in the region of 50%.
- 3.4.17 As for the Brise Soleil solution, where installed on the South elevation an average reduction of around 30% in peak solar gain was observed. Where installed on the East and West elevations, average reductions in peak solar gain of 30% and 17% respectively were observed.
- 3.4.18 On this basis, given the study proved that the application of solar film externally was a more effective solution to reducing solar gain, this is the approach that has been by the university.

3.5. Drainage

- 3.5.1 A Drainage Strategy has been produced by Aecom and supports the application for permanent retention of the building.
- 3.5.2 The strategy sets out in relation to on site attenuation that 'the surface water runoff from the development will be collected within the site and discharged using SuDS features to the proposed outfall.
- 3.5.3 The objectives of sustainable drainage systems are threefold:
- To limit the peak run-off rate to that of the greenfield condition;
 - To limit the volume of run-off to that of the greenfield condition;
 - To maintain the quality of the surface water which is discharged to that of the greenfield condition.
- 3.5.4 The nature of run-off from the building is mainly limited to roof water, with some drainage from footpaths immediately adjacent to the building. The majority of the attenuation will be provided in a below ground cellular tank. Due to limitations on space, this will be located beneath the existing cycle parking area, which will be reinstated above the tank on completion.
- 3.5.5 A landscaped depression is to be constructed within the existing grassed area adjacent to the cycle parking to provide additional volume in more extreme rainfall events. This will also provide direct drainage to the adjacent footpath areas.
- 3.5.6 A localised swale is also to be provided to the rear of the building to intercept overland flows resulting from limited capacity of the existing drainage network, where upsizing of downstream pipes is not possible due to excavation within tree root zones.' The drainage strategy responds to the requirements of Policy CC3 – Adaptation to Climate change which requires proposals for existing buildings to demonstrate measures that 'minimise the impact of surface water runoff from the development in the design of the drainage system'.
- 3.5.7 The strategy concludes that:

"The modular form of construction for the building limits the opportunities to retrofit SuDS systems, such as green roofs or water re-use options.

Run-off from the scheme is to be limited to as close to greenfield rates as possible, with a minimum discharge rate of 2.0l/s.

Run-off from the building is to be attenuated prior to discharge into the existing drainage network.

The scheme will include the formation of a landscaped basin and grassed swale to provide source control, interception and storage during extreme rainfall events.

An attenuation tank will be installed beneath the cycle park area.

Surface water design calculations and an associated drainage scheme have been prepared to indicate the required changes to the existing drainage network."

4. Planning Considerations

4.1. Heritage

- 4.1.1 It is considered that the proposal to retain the Chancellor's Building in the long term will have a neutral impact on the significance of nearby heritage assets.

Image 5 Map to show heritage assets in vicinity of the site (source: Historic England)



- 4.1.2 Whiteknights Park House is located on the southern corner of the junction between Chancellor's Way and Shinfield Road. It is Grade II listed described in the listing as:

"Late C19. Single storey asymmetrical lodge formerly serving Whiteknights Park House. Red brick with a diaper of grey headers. Slate roof. Two gables to front with bargeboards. Porch to right, bay window to left. Paired octagonal chimneys. Gabled projection to road. Decorative timbering in gable to east. Brick gate pier and quadrant dwarf wall with railings."

- 4.1.3 Blandford Lodge is located east of Salt Way. It is Grade II listed and described in the listing as:

"Late C19. 2 storeys. Grey brick, mostly headers. Stone dressings with architraves. 2:1:2 bays. Central gable. Plate glass sash windows. Modified Doric porch. Two gables to west with two storey angled bay. Part of the Whiteknights Park development, probably of 1870s. Now part of the University and altered."

Images 6 Whiteknights Park House (top) / Blandford Lodge (below) (source: Google street view)



- 4.1.4 There is adequate separation distance between Chancellors Building and these heritage assets for them to not be affected by the proposal to retain the building in the longer term, consistent with policy EN1 of the Local Plan. This is supported by the planning committee report for the original application, which details heritage considerations and states:

“The building would affect the setting of two Grade II listed buildings. Whiteknights Park House and Blandford Lodge. Whiteknights Park House is mainly viewed from Shinfield Road and would be separated from the proposal by approximately 80 metres of open space and a dense barrier of vegetation between. It is considered that the provision of larger buildings nearby would not harm the relatively limited and constrained setting of this historic ancillary building, or its heritage significance. Blandford Lodge is sited approximately 90 metres to the east. This would be separated visually by a small woodland. In this instance the building is surrounded at close quarters by large modern buildings. It is considered that the proposed (temporary) buildings would have less of an effect than the existing buildings and would not impinge unduly on, or result in harm to, the setting of this building.”

4.2. Trees

- 4.2.1 The proposal to retain the building will not result in any removal of trees consistent with the advice in policy EN14 – Trees, hedges and woodland.
- 4.2.2 The pre-application advice provided by RBC advised that, as part of the submission of an application for the permanent retention of the building, the following is provided:
- An up-to-date tree survey of trees in the vicinity, to assess their post-build condition and recommendations for work
 - A landscape plan
 - Details of ongoing landscape maintenance
- 4.2.3 In addition, the pre-application advice provided considered that the building could be seen as a detrimental view from the main sports field to the north and that consideration of tree planting along the northern edge of Chancellors Way (south side of the field) to provide further screening/softening, should be given.
- 4.2.4 As set out within the landscaping strategy, the proposals are seeking to introduce tree planting to the north of the Chancellor's Building, along the northern edge of Chancellor's Way, as advised by the Local Planning Authority through the pre-application process, and consistent with the advice in policy CC7 – Design and the Public Realm.

4.3. Ecology

- 4.3.1 In order to understand any impacts the proposals may have on ecology and ecological features, Ecological Planning and Research Ltd. was commissioned to undertake an Ecological Impact Assessment (EclA).

Ecological Appraisal

- 4.3.2 An ecological appraisal was carried out to determine the ecological features potentially needing to be considered within the EclA. The appraisal identified two Statutory sites within 2km of the Site boundary. These include Highwood and Maiden Erlegh Local Nature Reserves (LNR) which are both situated to the east of the Site. The main habitats of interest for these reserves are lowland mixed deciduous woodland. Highland LNR is particularly biodiverse and supports a number of bird species.
- 4.3.3 Several non-statutory sites were identified as being located within 2km of the site, the closest of which are Whiteknights Park and Whitely Park Farm/St. Patricks Hall Pond which are both less than 1km distance from the Site. Both are designated for their valuable floral assemblages which also support a number of invertebrate species.
- 4.3.4 The ecological appraisal has considered that, given that the project will only involve intrinsic landscape changes and upgrades to the building and there will be no extra residential accommodation, there will be no significant impacts regarding recreational pressure or disturbance to the wildlife and no further impact assessment is considered necessary.
- 4.3.5 A habitat survey carried as part of the EclA has considered that there are no habitats of particular conservation value within the area of proposals, however the wooded boundary to the west of the site is considered to be an important connective feature. The EclA identified a number of opportunities for enhancements to the grassland areas and suggested measures to achieve this, including:
- reduced management regime to allow the assemblage to develop into a more diverse sward. This would satisfy the aims and objectives of policy EN12 relating to biodiversity.
 - There is also scope to provide additional wildflower meadow planting to enhance the less diverse areas

Desk Top Study and Field Survey

- 4.3.6 A Desk Top Study and Field Survey were also carried out to determine the presence of any ecological species on, or near to the site. The Field Study was carried out on 7th July 2020. The study and survey work concluded that, with respect to bats, the likelihood of any bats using the building is low as the features are not considered to be suitable enough to support a substantial roost and, given that that the works regarding the building itself will be minimal and no impacts on any roosting features anticipated and no further lighting or tree removal has been identified, any impacts on this species are considered to be negligible.
- 4.3.7 Two badger sets were discovered during the field survey, however it was considered that these were located far enough away from the Site boundary that they would not be directly affected by the proposals and there is no recent activity close to the area of the proposals. However, due to the highly mobile nature of the species and presence of records in the surrounding area, to ensure compliance with legislation measures are required to avoid any impacts which include:
- Ensure that any construction fencing allows a continuous route around the site for commuting badgers to use. It is suggested that this route should allow badgers access to the wooded boundary to the west and also the surrounding green space to the south and north of the building;

- Cover any excavations overnight with boarding or provide escape ramps for any animals that become trapped; and
- Avoid siting the construction area close to the wooded boundary to the west. A 10m exclusion buffer is suggested.

4.3.8 The field survey also considered that there are a number of suitable areas within the Site boundary which could be used by over wintering reptiles and amphibians. However, these habitats are relatively isolated and there is no suitable habitat around the Site to connect it to the wider landscape, therefore if these species are present then they would only be in small numbers and might visit the habitats on a transient basis. Notwithstanding, as protection is afforded to this species under the Wildlife and Countryside Act there is a legal obligation to clear the Site sensitively with respect to this species. Methods to achieve this include:

- Delivery of a toolbox talk to all personnel on the Site to inform on the risks and legislation surrounding these species and application of the safe working methods;
- Supervised removal of any suitable hibernacula features such as log piles or debris which has been left in situ for an extended period of time. An ecologist should be present to safely extract any sheltering reptiles or amphibians;
- Phased vegetation clearance of areas of scrub and long grass to discourage any reptiles out of the working area; and
- Apply sensitive timing to any ground works to avoid hibernation season for reptiles and amphibians which is typically **October to March**.

The EcIA concludes that an assessment of impacts is not required due to the lack of important ecological features within the site and Zone of Influence.

Biodiversity Net Gain

4.3.9 Biodiversity Net Gain is an approach to development that leaves biodiversity in a better state than before. The aim of Biodiversity Net Gain is to minimise losses of biodiversity and help to restore ecological networks. Biodiversity Net Gain is covered under paragraphs 170 and 175 of the NPPF.

4.3.10 The proposed landscaping strategy will achieve at 22.6% net gain in biodiversity. In addition, it is proposed to provide:

- Wildlife Pond/SUDS feature: The proposed SuDS features will provide habitat enhancements for any amphibians that may be present in the area and also invertebrate populations.
- Stumpery/Stag Beetle Creche: Due to the high number of Stag Beetle records within the local area it is proposed that habitats be created specifically for this species such as a Stumpery or Beetle creche.
- A selection of wildlife boxes is proposed to provide and increase habitat opportunities for species which have been recorded within the local area. Such boxes include;
 - Hedgehog houses to be installed within any habitat borders;
 - Insect boxes and bee houses to be installed on retained trees;
 - A selection of bat and bird boxes.
- The species diversity of the grasslands surrounding the building will also be increased.

5. Summary and conclusion

- 5.1.1 Temporary planning permission was approved for the Chancellor's Building for a period of 5 years in June 2016. Since that time, and as a result of the listing of the URS building, the needs of the university's estate have changed, and the teaching and office space provided by the Chancellor's Building is now required indefinitely.
- 5.1.2 The reason cited by RBC for the approval of the building for a temporary period related to the appearance of the building, the drainage system and sustainability considerations.
- 5.1.3 In reviewing the sustainability credentials of the building, the energy performance in terms of how the building is used has been given priority over aesthetics; it would not be cost effective to make significant changes to the fenestration of the building purely in the interests of aesthetics, if this was not going to lead to improvements in the building's performance overall.
- 5.1.4 A study was undertaken of measures to address overheating on the southern side of the building. This concluded that applying a solar control film to the external windows was the most effective way of addressing solar gain and therefore improve temperature control within the building and efficient use of electricity. This directly responds to the requirements set out under policy CC3 – Adaptation to Climate Change.
- 5.1.5 A landscaping strategy has been conceived with the two main purposes of screening the building in views across the sports pitches, as advised in the pre-application advice, and increasing biodiversity as required by policy EN12 and CC3 of the Local Plan. A biodiversity net gain of 22.6% can be achieved based on the landscape strategy, more than meeting the required 10%.
- 5.1.6 In addition to the above it is proposed to paint the existing render system in two tones of grey to improve the appearance of the building and assist in making it appear more recessive in views of the campus compared to the emblematic orange, consistent with policy CC7 of the Local Plan.
- 5.1.7 Policy ER2 – Whiteknights Campus, University of Reading supports the University of Reading as a national and international educational establishment of strategic importance, recognising it will continue to adapt and expand over the plan period. The Chancellor's Building was approved as a temporary building in 2016 to enable the decant of the URS building prior to redevelopment. However, since the listing of the URS building the university has had to review its space requirements and the Chancellor's Building is now required in the longer term.
- 5.1.8 The proposals for its retention have been considered having regard to the POE, pre-application advice received from RBC and policy requirements of the Local Plan – especially policies CC3, CC7 and EN12.. Measures are proposed to improve the appearance of the building, the landscaping around the building, the energy performance of the building and the drainage, in order to improve the sustainability performance of the building overall. The primary aim of these measures is to ensure the longevity of the building for the continued use and enjoyment of university staff and students.

STRIDE TREGLOWN

Energy and Sustainability Statement

Temporary Accommodation, University of
Reading, Whiteknights Campus

March 2016

Turley

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1. Introduction

- 1.1 This Energy and Sustainability Statement has been prepared to support a planning application for the provision of 3638 sq.m. (GEA) of temporary buildings at University of Reading Whiteknights Campus.
- 1.2 The need for temporary accommodation was identified following a feasibility and project management review of a number of capital investment projects planned for Whiteknights Campus. These projects include:
- refurbishment and extension of the Library (planning permission granted in December 2015)
 - extension and refurbishment of the URS building
 - development of a new Health and Life Sciences Building
 - subsequent removal of obsolete buildings from the estate
- 1.3 The establishment of temporary accommodation is a critical first phase to support future proposed development and to enable the decanting of existing teaching and support facilities from those buildings identified for refurbishment and /or redevelopment.
- 1.4 This report has been prepared by Turley to demonstrate how the proposed development will respond to national and local policy taking into account the requirements of the Council's Policy CS1 and the Sustainable Design and Construction SPD (2011).

The Site and Surroundings

- 1.5 The application site is located on the western part of the Whiteknights campus on the site of the former Rural History Centre to the south of Chancellor's Way.
- 1.6 Until very recently the application site was occupied by the Rural History Centre (RHC), the demolition works were of which was completed in autumn 2015.
- 1.7 The site is generally flat and is set within an area surrounded by set landscaping and tree cover. The application site extends to approximately 0.9 hectares.
- 1.8 The application site is well connected to and easily accessible from the main campus road network to the east. The site is also closely related to the central part of the Whiteknights Campus where the proposed development projects such as Library, URS building, and Health and Life Sciences are located.

Proposed Development

- 1.9 The applicant is applying for outline planning permission for :
- "Erection of temporary teaching and office accommodation comprising 3 638 square metres (GEA) floor space over 2 floors on former Rural History Centre site"

2. Sustainability at University of Reading

- 2.1 The University is strongly committed to the sustainable development of its Estate.

Estate Strategy

- 2.2 The University Estate Strategy considers the composition and condition of the estate looking, amongst other things, at scale, functional suitability, space type, condition, location, core/non-core and Carbon Management.

- 2.3 The key issues identified in the Estate Strategy include:

Scale

The university currently operates with an area of 13.5m²/FTE, which in comparison with peer organisations, is an ineffective utilisation of space. The university has targeted a ratio of 10m²/ FTE which will give a significantly improved level of utilisation and financial efficiency.

- 2.4 Capital investment projects should be strategic and of a sufficient scale, as opposed to smaller and tactical in nature, if they are to drive out overall space from the academic portfolio.

Functional Suitability

- 2.5 There are a number of buildings within the academic estate which currently provide functionally unsuitable specialist space (excluding office and teaching space).

- 2.6 Space has been categorised according to its functional suitability according to the following classification.

Grade 1: Excellent – The space is highly suitable for current functions

Grade 2: Good – The space is suitable for current functions

Grade 3: Fair – The space is generally unsuitable for current functions

Grade 4: Poor – The space is very unsuitable for current function

- 2.7 At Whiteknights the buildings which contain functionally unsuitable specialist space are the Library, Engineering, Food Biosciences, AMS, Harborne, Knight, TOBs, Archway Lodge and Elmhurst Barn.

- 2.8 There are also a number of buildings which currently provide functionally unsuitable teaching space these include URS, Engineering, JJ Thompson, Philip Lyle, and Hopkins.

- 2.9 With regards to office space, functionally unsuitable space is located at Whiteknights and includes: the Library, Engineering, Park House, Whiteknights House, URS, Sports Park and Hopkins buildings.

- 2.10 Capital investment is required to reconfigure, refurbish or re-provide space in order to enhance the accommodation, improve student journey and provide space that can flex to meet the future requirements.

Space Type

- 2.11 There is a need to increase the proportion of modern flexible accommodation, such as modern office accommodation, across the academic estate including an increased provision of social and informal spaces. This depends on delivering more efficient and effective design and use of space across the portfolio.

Condition

- 2.12 The most important buildings within the estate with the poorest condition include the Library at Whiteknights and HumSS, which are both category C.

Location

Across Whiteknights campus there are defined areas of Faculty zoning. Certain Schools and Departments are not positioned in the optimal location based on the zoning of the campus.

Carbon Management

- 2.13 Since publishing its original Carbon Management Plan in 2011 the University has made excellent progress in reducing its total CO2 emissions. A 15% reduction in carbon footprint has been achieved to date, with committed projects and known changes to the estate likely to increase the total reduction to c32%. Additional projects will be developed to achieve the 2016 interim target of 35%.

Strategic Response

- 2.14 The Estate Strategy responds to these issues by requiring that all new developments and refurbishment projects will aim to:

- Reduce the overall scale of the academic estate with particular focus on areas of known overprovision
- Increase the efficiency of the portfolio and ensure the balance space within premises is usable. This will consequently drive down the overall requirement for space.
- Create flexible spaces that can be adapted to changing academic programmes and alternative uses.
- Provide more community spaces across all building types, not just within Faculty and School buildings.
- Reflect the changing demand for more facilities that accommodate changing teaching approaches and the greater use of technology within programmes.

Relevance of Temporary Accommodation Project

- 2.15 The proposed temporary accommodation will provide critical decant accommodation to for buildings which are to be refurbished, extended, up-graded or replaced through the University's programme of capital investment. These include the Library, URS engineering and Health and Life Sciences buildings. Delivery of the projects will reduce

the total size of the University's academic portfolio, particularly on the Whiteknights campus, and deliver significant improvements in space efficiency, functional suitability of building and the over-all condition of the estate. The projects will have a significant impact on the University's ability to meet its 2020 Carbon Reduction target.

Carbon

- 2.16 The University is committed to reducing its environmental impacts, underlined by its pledge to reduce carbon emissions by 35% by 2015/16 and 45% by 2019/20, compared with a 2008/09 baseline. The University has achieved the Carbon Trust Standard.

Environmental Management System

- 2.17 The University has implemented an Environmental Management System (EMS) at all three of its campuses; Whiteknights Campus and London Road Campus in Reading and Greenlands Campus in Henley. The EMS aims to reduce the significant environmental impacts of the University activities by using the structured EMS framework based on continual improvement.
- 2.18 The EMS covers all University activities on campus and includes; setting objectives and targets, implementing policy, complying with environmental legislation, pollution prevention procedures, providing training and embedding a commitment to improve environmental performance. The EMS, which is now fully operational, will continue to provide a framework for monitoring and measuring performance, internal auditing and communicating progress.

Energy Consumption

- 2.19 The University has become one of just a handful of universities in the UK to achieve certification to the international ISO50001 Energy Management standard.
- 2.20 The standard sets strict guidelines for how energy consumption is managed throughout the University's operations; providing a framework to ensure energy is effectively managed for the long term.

Eco Campus

- 2.21 The EMS has been awarded the highest standard given by EcoCampus, the Platinum Award. The University has also undergone thorough auditing against the international standard for ISO14001 by the external auditors at NQA.
- 2.22 Accreditation for both of these schemes shows that the University is committed to continually improving its environmental performance by embedding sustainable practices into all aspects of the University's operations.

3. Policy Context

UK Sustainable Development Strategy

- 3.1 In 2005, the Government published an updated strategy for implementing sustainable development across the UK.
- 3.2 This strategy acts as an overarching document from which a range of specific policies and legislation was derived. Although published in 2005, the strategy has taken a recently renewed focus in light of the government's definition of Sustainable Development in the NPPF.
- 3.3 One of the key aims of this strategy is to recognise the threats of climate change and ensure that the UK develops a strategy to mitigate and adapt to this phenomenon.
- 3.4 The document established five key principles that will underpin the national sustainable development strategy:
- Living within Environmental Limits;
 - Ensuring a Strong, Healthy and Just Society;
 - Achieving a Sustainable Economy;
 - Promoting Good Governance; and
 - Using sound science responsibly.
- 3.5 The strategy will be implemented at a national level through the development of more specific strategies at a government department or sector level.
- 3.6 With regards to planning and the built environment, this document set the basis for the development of plans and policies that promote development that mitigates and adapts to climate change.

Climate Change Act

- 3.7 The Climate Change Act (2008) sets a legally binding target for reducing UK CO₂ emissions by least 80% on 1990 levels by 2050.
- 3.8 It established the Committee on Climate Change, which is responsible for setting binding interim carbon budgets for the Government over successive five year periods. The first three carbon budgets were announced in the Budget 2009, resulting in an interim target of a 34% reduction in CO₂ equivalent emissions on 1990 levels by 2020.

UK Carbon Plan

- 3.9 In 2011, the government published an updated Carbon Plan setting out how the UK will achieve decarbonisation and make the transition to a low carbon economy. It sets this objective within a framework of mitigating and adapting to climate change and

maintaining energy security in a way that minimises costs and maximises benefits to the economy.

- 3.10 With regards to development, the Carbon Plan presents the government's approach to promoting the delivery of low carbon, resilient and adaptive buildings and enabling sustainable transportation as positively contributing to these national carbon reduction targets.

Building Regulations

- 3.11 Whilst not planning policy, the Building Regulations and specifically Approved Document Part L: Conservation of Fuel and Power has relevance to the requirements for energy efficiency and carbon emissions of new buildings.
- 3.12 The primary mechanism for reducing carbon emissions in new commercial development is progressive changes to Part L aiming to deliver zero carbon buildings by 2019.
- 3.13 On this basis, a minimum requirement for the reduction in carbon emissions to be delivered by new buildings' is set within the Building Regulations, with each update requiring lower carbon emissions than the previous version to achieve compliance.
- 3.14 This change aims to strike a balance between the commitment to reducing carbon emissions and improving energy efficiency and ensuring that the overall effect of regulation does not stifle growth.
- 3.15 These changing national regulations will drive energy efficiency and carbon reduction improvements in new buildings. The government has stated that developers will continue to have flexibility in how they meet carbon reduction targets; but that the emphasis is on using a fabric first approach.

BREEAM

- 3.16 BREEAM is the most widely used environmental assessment standard for non-domestic buildings within the UK and its use as a 'nationally described standard' is supported at national policy level within the NPPF and the NPPG.
- 3.17 BREEAM is based upon predefined tradable credits split into nine sections relating to sustainable design, procurement and construction:
- Management;
 - Health and Wellbeing;
 - Energy;
 - Transport;
 - Water;
 - Materials;

- Waste;
 - Land Use & Ecology; and
 - Pollution.
- 3.18 The different sections are weighted within the assessment (with Energy and Health and Wellbeing carrying the highest weight) and the final percentage score is translated into an overall rating.
- 3.19 In addition, there are a number of mandatory credits (also referred to as minimum standards) relevant to different ratings in order to prevent a building that does not appropriately address straightforward issues achieving a high BREEAM rating.
- 3.20 There are also credits available for exemplary level performance under the standard credit issues and for innovation within the design and construction process.
- 3.21 In 2011, the Building Research Establishment (BRE) launched the BREEAM New Construction scheme which amalgamated all of the existing, sector specific BREEAM guidance into a single assessment to be applied across a wide range of new buildings.
- 3.22 Since then, a further iteration of the BREEAM New Construction scheme (2014) has been released and is the current scheme against which new developments are assessed.
- 3.23 The methodology remains very prescriptive and has numerous mandatory and voluntary requirements, some of which are not relevant or are less appropriate to specific building types which must be accounted for within the design process.

National Planning Policy Framework

- 3.24 Following its publication in March 2012, national planning policy is now provided by the National Planning Policy Framework (NPPF) which sets out the government's planning policies for England and how these are expected to be applied. It also sets out the requirements for the planning system only to the extent that it is relevant, proportionate and necessary to do so.
- 3.25 The government has made clear its expectation that the planning system should positively embrace well-conceived development to deliver the economic growth necessary and the housing we need to create inclusive and mixed communities.
- 3.26 The NPPF states that: 'the purpose of the planning system is to contribute to the achievement of sustainable development'.
- 3.27 It states clearly that in order to deliver sustainable development, the planning system must perform three distinct roles, aligned to the three pillars of sustainability, which must not be taken in isolation and should be pursued jointly:

An economic role contributing to building a strong, responsive and competitive economy, by ensuring that sufficient land of the right type is available in the right places and at the right time to support growth and innovation; and by identifying

and coordinating development requirements, including the provision of infrastructure;

A social role supporting strong, vibrant and healthy communities, by providing the supply of housing required to meet the needs of present and future generations; and by creating a high quality built environment, with accessible local services that reflect the community's needs and support its health, social and cultural well-being; and

An environmental role contributing to protecting and enhancing our natural, built and historic environment; and, as part of this, helping to improve biodiversity, use natural resources prudently, minimise waste and pollution, and mitigate and adapt to climate change including moving to a low carbon economy.

Planning Policy Guidance (The Guidance)

- 3.28 The National Planning Practice Guidance (NPPG) provides further advice on various planning issues associated with development, including those linked to sustainability and renewable energy and underpins the policies within the NPPF.
- 3.29 The guidance states that the distribution and design of new development, and the potential for servicing sites through sustainable transport solutions, are particularly important considerations and that good design is an integral part of sustainable development to deliver a wide range of planning objectives.

Local Development Plan

Development Plan

- 3.30 The Reading Borough Development Plan comprises the Core Strategy (adopted 2008) and the Sites and Detailed Policies Document (adopted 2012). There are also a number of relevant supplementary planning documents related to the implementation of the Development Plan policies.

Core Strategy (2008)

- 3.31 Policy CS1: Sustainable Construction and Design confirms that new development will be acceptable where the design and site layouts use energy, water, minerals, materials and other natural resources appropriately, efficiently and with care and take account of the effects of climate change. The policy sets out the following requirements:
- Commercial development to meet BREEAM 'Very Good' as a minimum;
 - Developments of over 1,000sqm to ensure that 50% of the provision meets BREEAM 'Excellent' standards;
 - Maximise energy efficiency and energy conservation measures in design, layout and orientation to reduce overall energy demand;
 - Developments of over 1,000sqm to incorporate on-site generation of energy from renewable sources and energy efficiency design measures to off-set at least 20%

of predicted CO2 emissions from the estimated energy usage of the completed and occupied development;

- Reduce mains water use and demonstrate water conservation measures to meet appropriate BREEAM standards; and
- Incorporate sustainable urban drainage facilities and techniques as part of the layout of a development as appropriate and as advised by the EA, including minimising the size of impermeable areas so that peak run-off and annual water run-off is reduced where possible and in any case is no greater than the original conditions of the site.

Reading Sites and Detailed Policies Document

- 3.32 Policy SD1: Presumption in Favour of Sustainable Development confirms that the Council will approve development that accords with the Development Plan without delay, unless material considerations indicate otherwise.
- 3.33 Policy DM1: Adaptation to Climate Change requires applicants to demonstrate how design incorporates measures to adapt to climate change. This includes the use of natural heating and ventilation and minimising surface water runoff.
- 3.34 Policy DM2: Decentralised Energy requires development over 1,000sqm to consider the inclusion of CHP, or biomass-fuelled heating scheme, or other form of decentralised energy provision, within the site, unless it can be demonstrated that the scheme is not suitable or feasible for this form of energy provision. Development of this size will be expected to link to existing CHP or a district heating energy networks if present, subject to feasibility.

Revised Sustainable Design and Construction Supplementary Planning Document (2011)

- 3.35 The SPD seeks to promote high standards of sustainable design and construction, providing detail on development plan policies. It also brings together relevant national guidance.

Summary of Policy Context

- 3.36 Both national and local policy recognises the need to provide sustainable development which responds to the challenges of Climate Change.
- 3.37 Since the adoption of the Council's Core Strategy in 2008, national policy has seen significant change with a number of improvements in relation to energy and sustainability targets:
- The Building Regulations now require commercial developments to achieve a 34% reduction in carbon emissions; and
 - The Housing Standards Review has consolidated many of the standards related to new construction, winding down the Code, and removing Local Authorities ability to set standards such as Lifetime Homes in favour of a Building Regulations only approach which includes a set of new technical standards.

- 3.38 The Core Strategy requires development proposals to be submitted with an Energy and Sustainability Statement setting out how the development incorporates key sustainable design to achieve a high BREEAM rating and delivers a portion of the developments energy through renewable energy sources.
- 3.39 The following section of the report sets out the proposed development's response to the requirements of both national and local sustainability policy in the context of an application for temporary planning permission.

4. Energy and Sustainability in Relation to Modular Temporary Accommodation

Inherent Sustainability of Modular Construction Techniques

- 4.1 Offsite construction, in general, is recognised for the savings it can bring in terms of construction time spent on site, building quality and reduced impacts on the environment. Modular building helps to increase the speed at which construction takes place and reduces the carbon footprint of the overall build by requiring fewer materials to be transported onto a site.
- 4.2 The environmental benefits of offsite construction are related in large part to the benefits generated by the manufacturing process. The time saving on site and the controlled designed quality processes indicate better environmental performance in terms of use of energy, deliveries to site, waste and, as a result, carbon emissions. The most significant impacts are as follows:
- 75% fewer operatives on site (volumetric modular construction)
 - 60% reduced construction time (volumetric modular construction)
 - Up to 90% less waste generated on site (volumetric modular construction)
 - 65% of the waste generated by the manufacturing process is re-cycled or re-used
 - Offsite methods can reduce carbon emissions by 50% and generate 2.5 times less waste than traditional construction
 - Material requirements for equivalent buildings are in average 34% less (offsite construction typologies)

Waste

- 4.3 Studies commissioned by the Waste Reduction Action Programme (WRAP) have considered in more detail the impacts of using offsite construction methods on the amount of waste generated on site. Their study states that: *“volumetric construction eliminates all waste except that generated through excavating foundations and a small amount of off cuts from connecting the services pipe work/cabling to the mains”*.
- 4.4 The report also suggests that the reduction in waste generated on site could be up to 90% compared to traditional methods of construction.
- 4.5 WRAP also looked at the waste generated at the factory settings of exemplar offsite manufacturers and determined that volumetric manufacturers generate less than 1.8% of the total weight processed through the factory, of which 65% is recycled or re-used. These results reflect the lean manufacturing process that is in place in most of the offsite construction factories, which implies that waste is designed out of the process from the very early stages to the delivery on site.

Re-Use of Modules

- 4.6 A key sustainability feature of temporary modular accommodation is the ability to re-use modules, and re-deploy them to alternative sites and projects when they are no longer required for their original purpose. The ability to re-use the modular units is a significant sustainability benefit.

Built-Off-Site modular Construction

- 4.7 The University has appointed Built Off-Site (BOS) to provide the temporary teaching and office accommodation. BOS has over 35 years' experience in off-site construction processes and construction.
- 4.8 Built Off-site's method of construction lends itself to very high levels of fabric efficiency due to the factory based construction methods and rigorous levels of quality control, both within the manufacturing environment and onsite whilst installing the building and undertaking all works to the building envelope and internally.
- 4.9 Built Off-Site appointed independent consultants (Mtech) to undertake a detailed 'life-cycle' assessment of its modular construction product against a comparable (notional) traditional building. The results are summarized in the table below:

Descriptions	Traditional Notional Building	Built Off-Site Standard Product
Impacts on the Environments (Ecopoints)	1.1 to 1.82	0.7103
Improvement compared to traditional (percent)	-	- 35% to -61%
Construction		
Embodied Energy / Carbon (kg CO2 eq. / m2)	134.6	98.8
Improvement in Embodied Energy / Carbon (percent)	-	-28.6%
Overall		
Total carbon emission for construction and maintenance over 35 years (tons CO2)	390.1	210.8
Improvement of carbon emission compared to traditional (notional) construction (percent)	-	-46%

- 4.10 It can be seen that the Built Off-Site standard module offers a reduction of 46% of the global carbon emission over the whole life of the building compared to traditional (notional) construction methods.
- 4.11 High levels of insulation are installed carefully ensuring continuity of insulation with a continuous air and vapour control layer to ensure high levels of air tightness.
- 4.12 Built Offsite have adopted a fabric first approach to building design and the performance of the fabric alone is comparable to Passive House standards. Dynamic Thermal modelling of all buildings is done at design stage and the designs developed to ensure that the buildings surpass all building regulations and the maximum energy efficiency is achieved. As part of the overall design development process, lighting designs are produced and highly energy efficient electrical and mechanical services strategies are developed and installed.
- 4.13 Built Offsite Buildings routinely achieve an A rating on the EPC certificate and more than 70 percent of projects delivered over the last 2 years have achieved a BREEAM rating of Very Good or better.

BRUKL

- 4.14 A BRUKL Output Document has been completed for the proposed temporary accommodation and confirms the high levels of fabric efficiency achieved by Built Off-Site.
- 4.15 The Output Document also demonstrates that building emissions are below the target level and that energy and CO2 emissions are lower than for the notional comparative building.

Site Selection Sustainability Considerations

- 4.16 The site selected for the temporary accommodation has a number of inherent sustainability attributes:
- It is previously developed land having been occupied, until autumn 2015, by the former Rural History Centre;
 - It is predominantly hard surfaced and thus the proposed temporary accommodation will not give rise to a material increase in surface water run-off;
 - In benefits from existing services (including foul and surface water drains) which run through, or very close to, the site
 - It is well-related to the main buildings on campus
 - It is accessible and will benefit from good public transport links

5. Conclusion

5.1 This Energy and Sustainability Statement demonstrates how the proposed development of the temporary teaching and office accommodation at University of Reading's Whiteknights campus responds to the Council's sustainable development objectives as articulated in development plan policy and SPD.

5.2 The temporary nature of the accommodation (permission is sought for a period of five years) was acknowledged by the local planning authority at pre-application stage to represent a material constraint to the achievement of full policy compliance. A copy of the pre-application advice is attached as Appendix 1 and it is noted that the LPA advised:

"It is acknowledged that the temporary nature of the scheme may make it difficult to comply with some aspects of the BREEAM standards. The Council would be open to considering a relaxation of the requirements, provided that these are fully explained and justified in detail. This is on the basis that the buildings would be of a temporary nature and this would mitigate long term environmental harm that may otherwise occur."

5.3 Against the above background, this Energy and Sustainability Statement sets out how the University proposes to meet the objectives of sustainable development through this proposal. Specifically:

- The requirement for the temporary accommodation is intrinsically linked to, the University's proposals for significant capital investment in its Estate at Whiteknights Campus. The temporary accommodation will provide decant space which is necessary to allow other major capital projects to proceed. These capital projects include the Library refurbishment, URS building refurbishment, a new Health and Life Sciences Building and subsequent removal of obsolete buildings from the estate. Provision of the temporary accommodation is therefore a key early phase of work which will allow delivery of significant sustainability improvements and carbon reduction on the campus.
- The site which has been chosen for the temporary accommodation is inherently sustainable. It is well-related to existing facilities on campus including the buildings which are to be refurbished, extended and replaced. It is previously developed land which until very recently been occupied by the Rural History Centre Buildings (which were demolished in autumn 2015). It benefits from convenient access to services (drainage, water supply, etc.) which previously served the Rural History centre Buildings and existing service runs can be used to serve the new development.
- The modular construction of the temporary accommodation offers many sustainability benefits. These include reduced resource consumption in the construction of the modules; reduced construction time-scales; up to 90% less waste generated on site (volumetric modular construction); reduction of carbon emissions.

- The temporary accommodation provider (Built Off Site) has extensive experience and adopts a fabric first approach to the manufacture of its buildings. the performance of the fabric alone is comparable to Passive House standards. Dynamic Thermal modelling of all buildings is done at design stage and the designs developed to ensure that the buildings surpass all building regulations and the maximum energy efficiency is achieved. Built Offsite Buildings routinely achieve an A rating on the EPC certificate and more than 70 percent of projects delivered over the last 2 years have achieved a BREEAM rating of Very Good or better.
- A BRUKL Output Document has been completed for the proposed temporary accommodation and confirms the high levels of fabric efficiency achieved by Built Off-Site.
- The development will include measures to facilitate sustainable travel such as secure cycle storage and provision of showers and changing facilities,

Turley

Appendix 1: Pre-application Advice from LPA

FAO Mr. Perrins
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☎ 0118 9373787

Our Ref: 151895

Direct: ☎ 0118 9372980

e-mail: stephen.vigar@reading.gov.uk

23 February 2016

Your contact is: **Mr Stephen Vigar, Planning**

Dear Mr. Perrins,

PRE PLANNING APPLICATION ENQUIRY RESPONSE

Enquiry Reference: 151895

Address: Rural History Centre, Whiteknights Campus, University of Reading, Reading, RG6 6UR

Proposal: Temporary Accommodation units comprising 3 400 square metres of floor space provided over 2 floors as an initial phase.

Thank you for your enquiry.

Trees

A tree survey would be needed at application stage. In addition, although it appears that that Phase 1 would have a similar impact on trees to the recently approved demolition works, an Arboricultural Impact Assessment should also be submitted at application stage to confirm this. This AIA would also need to address any conflicts between the new building and tree roots or canopies. If the AIA advises that an Arboricultural Method Statement is required, it is recommended that this should also be provided at application stage to avoid a pre-commencement condition.

Phase 2, as shown on drawing 17003 Rev.02, would lead to a significant loss of trees that currently form a small woodland area that contributes positively to the visual amenity of the area and forms part of the parkland setting of the campus as well as forming part of the setting of the Grade II listed Blandford Lodge. The loss of these trees to make way for a temporary building is not considered to be acceptable and would be harmful in visual terms (as well as the loss of other benefits associated with trees). It is unlikely that Phase 2 would be granted permission for this reason.

Policies CS33 and CS38 of the Adopted Core Strategy (Altered 2015) apply.

Scale and Appearance

The two storey scale referred to in the pre-app submission reflects that of the demolished building on the site and is considered appropriate on that basis, subject to details of its appearance. The lapsed hotel permission 10/01162/EXT involved a building rising to 4 storeys. Given the tree constraints described above, it may be appropriate to increase the height to a maximum of four storeys to compensate for the limited opportunity to extend laterally. It is important to note that the temporary nature of the current proposal means that direct comparison between the hotel and the temporary accommodation is not appropriate. I.e. the scale of the hotel does not necessarily justify a temporary building of the same size.

Transport

It has been stated within the additional information that ‘the first phase of the temporary accommodation is required for a period of 5 years in order to support the implementation of the various development projects across the campus over this time’. On this basis the proposal is unlikely to generate an increase in trips to and from the site however this would need to be clarified within any full planning application.

If the proposal would result in an increase in trips as a result of the additional floor space a provision of car and cycle parking will be required in line with the Council’s Revised Parking Standards and Design SPD.

It is recommended that the Construction Management Plan should be submitted alongside the planning application at application stage as the proposals are likely to affect the adjacent Public Right of Way. The CMS will need to be in accordance with the Council’s ‘Guidance Notes for Activities on The Public Highway’ which sets out the information required.

The CMS should also include details of how noise and dust are to be minimised on site.

Policies CS20, CS24, and Sites and Detailed Policies Document (2012) policies DM4, DM12 and Revised Parking Standards and Design SPD apply.

Archaeology

Berkshire Archaeology advise that the site is located within an area of archaeological potential. Within the Historic Environment Records for the surrounding area there are a number of entries which include prehistoric worked flint ‘findspots’, an excavation approximately 500m to the south recorded part of what is thought to have been quite an extensive Roman settlement complex, a possible Bronze Age barrow located in the grounds of Leighton Park School to the south. A desk based assessment is needed which considers the archaeological potential of the site along with past and proposed impacts. Berkshire Archaeology would be consulted on this and may decide that further trial trenching is required prior to the determination of any future application. You may wish to discuss the detail of this directly with Berkshire Archaeology. Policy CS33 applies.

Environmental Sustainability / Energy

Policy CS1, supported by the Sustainable Design and Construction SPD (2011) would require the buildings to meet BREEAM Very Good standard with a minimum score of 62.5 points (equating to an average of the 50:50 split between Very Good and Excellent referred to in

Policy CS1). It is acknowledged that the temporary nature of the scheme may make it difficult to comply with some aspects of the BREEAM standards. The Council would be open to

considering a relaxation of the requirements, provided that these are fully explained and justified in detail. This is on the basis that the buildings would be of a temporary nature and this would mitigate long term environmental harm that may otherwise occur.

Temporary Period

There is a strong relationship between the quality of architecture proposed, the scale of building and the degree of compliance with Planning policy and the length of time that a temporary consent would be granted. For example, it would not be appropriate for a building of a more functional appearance, rising to several storeys, but with relatively poor environmental performance, to remain for any significant length of time.

A five year period would seem appropriate initially. It may be possible to extend this by a further application in the future. Although it should be noted that government guidance is that “it will rarely be justifiable to grant a second temporary permission - further permissions should normally be granted permanently or refused if there is clear justification for doing so. There is no presumption that a temporary grant of planning of planning permission should be granted permanently”. The circumstances on site and the planning policy context would need to be taken into account at the time of any second application and cannot be accurately predicted at this stage.

Conclusion

In summary, it would appear to be appropriate to provide temporary accommodation up to a maximum of four storeys on the site of the former MERL building, i.e. the footprint of ‘Phase 1’, subject to the final details of its massing and overall appearance.

However it is not considered appropriate for temporary accommodation to extend across the undeveloped land to the east which is currently occupied by woodland trees of amenity value due to the visual harm that would occur.

Please note that the advice contained within this letter is that of an officer of the Borough Council and is provided without prejudice to the decision of the Borough Council in the event of a formal application for planning permission.

Yours sincerely

pp. *A. Amoah*

Mr Stephen Vigar
Principal Planning Officer

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Turley