

PROJECT | ROYAL BERKSHIRE HOSPITAL

UROLOGY

ENERGY AND SUSTAINABILITY
STATEMENT

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Contents

1	INTRODUCTION	1
2	DESIGN APPROACH	1
3	NATIONAL PLANNING POLICY FRAMEWORK	2
4	READING BOROUGH LOCAL PLAN.....	3
4.1	Policy CC1: Presumption in favour of sustainability development.....	3
4.2	Policy CC2: Sustainable design and construction	3
4.3	Policy CC3: Adaptation to Climate change	4
4.4	Policy CC4: Decentralised energy.....	4
4.5	Policy CC5: Waste minimisation and storage	4
4.6	Policy ENE12: Biodiversity and the green network.....	5
4.7	Policy EN15: Air quality	5
4.8	Policy EN16: Pollution and water resources	6
4.9	Policy ENE17: Noise generating equipment	6
4.10	Policy ENE18: Flooding and drainage	6
4.11	Policy TR1: Achieving the transport strategy	7
4.12	3.2.12 Policy TR3: Access, traffic and highway-related matters	7
4.13	Policy TR4: Cycle routes and facilities	7
4.14	Policy TR5: Car and cycle parking and electric vehicle charging	8
4.15	Policy ER3: Royal Berkshire Hospital.....	8
5	PROJECT CARBON EMISSIONS	8
6	MTX APPROACH TO RESOURCE MINIMALISATION AND CARBON EMISSIONS.....	8

1 INTRODUCTION

This report is prepared to support the planning application at Royal Berkshire Hospital in support of the new modular Urology department project.

This Energy and Sustainability Statement has been prepared on behalf of the Royal Berkshire Hospital NHS Foundation Trust (the Trust), in support of a new modular, 2 storey extension at Royal Berkshire Hospital. This statement accompanies an application for full planning permission.

All major healthcare proposals are required to address the adverse impacts of climate change. The proposed building has therefore been designed to optimise its carbon performance by measures referred to in this energy statement report.

The development is an extension to the main hospital building and is classified as an extension under the Building Regulations Approved Document L Volume 2.

This Statement sets out a range of sustainability measures that could be applied to the development to address the effects of climate change and meet the requirements of National and Local planning policies and guidance set out below this being:

- National Planning Policy Framework (NPPF)
- Reading Borough Local Plan (2019)
- SPD – Climate change, Sustainable design, construction and energy 2020.

It is proposed that the building is not provided with a mains gas supply and will be an electrically fed building which incorporates appropriate systems and technology that minimises the carbon impact.

2 DESIGN APPROACH

The Trust are targeting a low carbon building utilising renewable technologies along with a BREEAM Excellent rating.

We are aiming to follow both the guidance set out in the national planning framework and the Reading Borough Local Plan (2019). Whilst fully achieving the requirements set out within those documents will not be realised, the development has looked to maximise the decarbonisation through the energy efficiency and NZC measures listed below.

- Reduce energy consumption through implementation of a high efficiency building envelope.
- Selective solar control glass to give a high light transmittance and low g-value
- Optimise natural light. (due to the nature of the Clinical usage of the building, this will be difficult to achieve in Clinical areas. Non-clinical spaces will look to maximise the availability of natural light).
- LED lighting, including lighting / day lighting controls where appropriate i.e., recognising need for clinical function
- Metering of primary energy use items
- Provision of fully integrated and intelligent building management system for effective and adaptive control of all services
- High performance heat recovery systems on ventilation plant utilising plate heat exchangers
- Low specific fan powers on air handling units

- Low use water fittings for showers, WC's & tap outlets
- Limiting heat gains and losses from pipes, ducts and vessels by provision of thermal insulation to all services.
- All services will be commissioned and adjusted as necessary to ensure they use no more fuel and power than is required.
- Maximise the use of off-site fabricated products to ensure that efficiency in construction energy is realised.

In addition to the measures listed above, renewable and LZC technologies will be applied. From the preliminary analysis, the technologies that are showing to be most beneficial to the scheme are air source heat pumps. The heat pumps are applied to various systems within the development serving the air handling unit and also rooms which require dedicated local cooling.

The building mounted heating system requirements are minimised due to the main body of the heating and cooling requirements being provided by the ventilation system which benefits from the load being generated from air source heat pumps.

Where building mounted heating is required, this will be provided via ceiling mounted electric heating panels with full user control.

The domestic hot water generation will be via new electrically generated hot water storage vessels.

The building electrical supplies will be derived from the existing hospital site network. A comprehensive load assessment for the scheme will be carried, but from preliminary assessments, the load requirement is envisaged to be within the range of what the existing site wide infrastructure can accommodate thus negating the need for new demands from the grid and a new sub-station.

Photovoltaics have also been considered for the scheme. We are proposing at least the minimum requirement with regards to Part L. However, we will look to maximise the use of PV where we can. The proposal at present to utilise the plantroom roof for the PV locations.

3 NATIONAL PLANNING POLICY FRAMEWORK

The NPPF was published in 2023 and replaces the previous NPPF. The document sets out the Government's planning policies for England and how they are expected to be applied. Its purpose is to perform a number of key roles to ensure:

- A strong, responsive and competitive economy;
- Strong, vibrant and healthy communities; and
- Protection and enhancement of the natural, built and historic environment.

Central to achieving sustainable development is to secure reductions in greenhouse gas emissions, reduce vulnerability and provide resilience to the impacts of climate change.

To support and promote the move to a low carbon future, and reduce vulnerability to climate change, local planning authorities should:

To help increase the use and supply of renewable and low carbon energy and heat, plans should:

- Provide a positive strategy for energy from these sources, that maximises the potential for suitable development, and their future re-powering and life extension, while ensuring that

adverse impacts are addressed appropriately (including cumulative landscape and visual impacts);

- Consider identifying suitable areas for renewable and low carbon energy sources, and supporting infrastructure, where this would help secure their development; and 53 In line with the objectives and provisions of the Climate Change Act 2008. 46
- Identify opportunities for development to draw its energy supply from decentralised, renewable or low carbon energy supply systems and for collocating potential heat customers and suppliers.
- Direct development away from areas at highest risk of flooding or coastal change and ensure that flood risk is not increased elsewhere.

4 READING BOROUGH LOCAL PLAN

The development falls within the Reading area and as such consideration has been given to the guidance set out within the local plan and supplementary planning documents.

The key areas of the planning policies considered within this Royal Berkshire Hospital development sustainability report are below.

4.1 Policy CC1: Presumption in favour of sustainability development

This policy is designed to ensure that decisions are taken in line with the National Planning Policy Framework and presumption is placed in favour of a sustainable development. Where appropriate, the Council will work proactively with applicants jointly to find solutions which, mean that proposals can be approved wherever possible.

Planning law requires that applications for planning permission must be determined in accordance with the development plan unless material considerations indicate otherwise. Planning applications that accord with the policies in the development plan (including, where relevant, with policies in neighbourhood plans) will be approved without delay, unless material considerations indicate otherwise. Proposed development that conflicts with the development plan will be refused, unless other material considerations indicate otherwise.

4.2 Policy CC2: Sustainable design and construction

The policy seeks to encourage the incorporation of sustainable design and construction techniques in order to minimise the impact of future growth. As such, proposals for new developments, 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, with care and take account of the effects of climate change. 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.

4.3 Policy CC3: Adaptation to Climate change

This policy requires Reading's growth to take place in a sustainable manner, incorporating climate change adaptation technologies. All developments will demonstrate how they have been designed to incorporate measures to adapt to climate change. The following measures shall be incorporated into a development;

- Wherever possible, new buildings shall be orientated to maximise the opportunities for both natural heating and ventilation and reducing exposure to wind and other elements;
- Proposals involving both new and existing buildings shall 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;
- Use of 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, designed with native plants that are carefully selected, managed and adaptable to meet the predicted changed climatic conditions; and
- All development shall minimise the impact of surface water runoff from the development in the design of the drainage system, and where possible incorporate mitigation and resilience measures for any increases in river flooding levels as a result of climate change.

4.4 Policy CC4: Decentralised energy

This policy promotes use of decentralised energy including CHP and district heating, which has particular applications to a dense urban area such as Reading. In meeting the sustainability requirements of this plan, developments of the sizes set out below shall demonstrate how consideration has been given to securing energy for the development from a decentralised energy source.

Any development of more than 20 dwellings and / or non-residential development of over 1,000sq m shall consider the inclusion of decentralised 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 decentralised energy provision present within the vicinity of an application site, further developments of 10 dwellings or more or non-residential development of 1,000sq m or more will be expected to link into the existing decentralised energy network or demonstrate why this is not feasible.

4.5 Policy CC5: Waste minimisation and storage

This policy seeks to achieve a more sustainable approach to methods of waste management and requires developments to 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.

4.6 Policy ENE12: Biodiversity and the green network

This policy seeks to attain a balance between accommodating development activity and preserving important biodiversity and geodiversity.

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. In exceptional circumstances where the need for development clearly outweighs the need to protect the value of the site, and it is demonstrated that the impacts cannot be;
 - o Avoided;
 - o Mitigated or;
 - o Compensated for on-site;

then, new development will provide off-site compensation to ensure that there is “no net loss” of biodiversity.

4.7 Policy EN15: Air quality

This policy requires developments to have regard to the need to improve air quality and reduce the effects of poor air quality. 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.

Where a development would introduce sensitive uses (such as residential, schools and nurseries, hospitals, care facilities) into, or intensify such uses within, an Air Quality Management Area, detrimental effects on that use will be mitigated. Mitigation measures should be detailed in any planning application. If there are significant detrimental effects that cannot be mitigated, the application should be refused.

Where required, planning obligations will be used to secure contributions to measures to tackle poor air quality or for air quality monitoring.

4.8 Policy EN16: Pollution and water resources

This policy recognises that the effective protection of the environment is a key aspect of sustainable development, and reducing pollution is one of the core planning principles in the NPPF. As such, developments will only be permitted as follows;

- 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.

Proposals for development that are sensitive to the effects of noise or light pollution will only be permitted in areas where they will not be subject to high levels of such pollution, unless adequate mitigation measures are provided to minimise the impact of such pollution.

Development will only be permitted on land affected by contamination where it is demonstrated that the contamination and land gas can be satisfactorily managed or remediated so that it is suitable for the proposed end use and will not impact on the groundwater environment, human health, buildings and the wider environment, during demolition and construction phases as well as during the future use of the site.

4.9 Policy ENE17: Noise generating equipment

Where noise generating equipment is proposed, the noise source specific level (plant noise level) should be at least 10dBA below the existing background level as measured at the nearest noise sensitive receptor.

4.10 Policy ENE18: Flooding and drainage

This policy seeks to reduce flood risk within Reading and, in the first instance, developments will be directed to areas at lowest risk of flooding, following the Sequential and Exceptions Test set out in the NPPF, and taking into account the effects of climate change. It will consider flooding from all sources, including fluvial, surface water, groundwater and sewer flooding.

Where development in areas at risk of flooding is necessary, it will not reduce the capacity of the flood plain to store floodwater, impede the flow of floodwater or in any way increase the risks to life and property arising from flooding. Wherever possible, development should be designed to reduce flood risk, both on, and off site.

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. Runoff rates should aim to reflect greenfield conditions and, in any case, must be no greater than the existing conditions of the site. Schemes should ensure that the movement of water through vertical infiltration as well as horizontal run-off does not worsen contamination effects. Wherever possible, SuDS provision should maximise ecological benefits, link into the existing Green Network, incorporate tree planting and landscaping and avoid damage to existing significant trees, including through changes to the site hydrology. All new developments in areas of flood risk should give priority to SuDS.

4.11 Policy TR1: Achieving the transport strategy

This policy requires developments to contribute appropriately to meeting the objectives of the most up-to-date Local Transport Plan (2011-2026) or any successor document, including sub-strategies, specific projects identified and the local action plans.

Planning permission will not be granted for major development proposals unless there is a commitment to implement measures to promote and improve sustainable transport facilities, such as through provision to encourage walking, cycling and the use of public transport and through agreed travel plans, safe routes to local facilities and services, including schools and parks, and similar measures. Additionally, 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.

4.12 3.2.12 Policy TR3: Access, traffic and highway-related matters

This policy seeks to ensure that development proposals will not interfere with the free flow of traffic on the highway and that there would be no risk to the safety of people using that road. In determining proposals involving a new or altered access onto the transport network, improvement works to the transport network, the creation of new transport infrastructure or 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;

- Accesses and works to the highway comply with the adopted standards of the Transport Authority;
- The development would not have a material 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;
- The proposal would not generate regular movement of heavy goods vehicles (HGVs) on unsuitable roads, or on roads without easy access to the Classified Highway Network; and
- For non-residential uses, or new dwellings on classified roads, off-street servicing would be provided.

Proposals involving either the construction of a new site access, or a material increase in the use of an existing site access, directly onto the Classified Highway Network will not be acceptable if they would be likely to result in the encouragement of the use of the network for short local trips or compromise the safe movement and free flow of traffic on the network or the safe use of the road.

4.13 Policy TR4: Cycle routes and facilities

This policy recognised cycling as one of the most sustainable forms of transport, and forms an important part of Reading's transport strategy. As such, developments will be expected to make full use of opportunities to improve access for cyclists to, from and within the development and to integrate cycling through the

provision of new facilities. Development of new facilities for cycling, such as cycle hire points and cycle parking, will be acceptable.

The cycle routes identified in the most up-to-date Cycling Strategy will be maintained, enhanced and added to or extended. Development will not detrimentally affect an identified cycle route. Where opportunities exist, improvements to that route, including the provision of connecting routes, and / or cycling facilities will be sought within developments or through planning contributions.

4.14 Policy TR5: Car and cycle parking and electric vehicle charging

The policy seeks to reduce local air quality issues linked to traffic and congestion. As such, developments should provide car parking and cycle parking that is appropriate to the accessibility of locations within the Borough to sustainable transport facilities, particularly public transport. Developments should also make the following provision for electric vehicle charging points:

- All new houses with dedicated off-street parking should provide charging points;
- Within communal car parks for residential or non-residential developments of at least 10 spaces, 10% of spaces should provide an active charging point.

4.15 Policy ER3: Royal Berkshire Hospital

This policy recognises The Royal Berkshire Hospital as a highly significant facility which serves the needs of Reading as well as much of its hinterland. Unless it is proposed to move to a new site, the Hospital site on Craven Road will continue to be a focus for healthcare development to meet requirements, and the site will need to be flexible to adapt to changing technologies or modes of service delivery. Such development will be supported where it complies with the following criteria:

- Where development would result in an increase in staff or visitors, it should be accompanied by measures which ensure that development does not have an adverse effect on the functioning of the highway, either as a result of increased use or by resulting in additional on-street parking in surrounding streets;
- Development will conserve the listed main block on London Road and 17 Craven Road, ensuring that their use is consistent with its conservation;
- Development would not result in adverse effects on the setting of listed buildings and conservation areas; and
- There will be no significant detrimental impact on neighbouring residential properties

5 PROJECT CARBON EMISSIONS

Due to the project aiming to use a zero carbon fuel by means of electric the project carbon emissions are as shown below.

Carbon Emissions are to be calculated based on the building services and materials chosen for this project when the M&E design has further progressed.

6 MTX APPROACH TO RESOURCE MINIMALISATION AND CARBON EMISSIONS

MTX are happy to be delivering the Royal Berkshire modular Urology development which throughout the course of the project will assist us on our commitment to the UK's ambition to reach net zero by 2050. Since 2010, we've consistently reduced our CO2 emissions year-on-year and limited our CO2 output, contributing to national targets.

We seek to target energy and low carbon on the project by:

- Exceeding carbon management standards and regulations

- Using the most sustainable, environmentally friendly materials, technology and equipment which is specified in drawings.
- Driving carbon reduction with our customers and supply chain.

We use where possible the most sustainable, environmentally friendly and up to date technology and equipment to increase our energy efficiency please see below key areas where we are implementing the use of modern construction to reduce the carbon footprint for the Royal Berkshire modular Urology building.

Utilisation of modular buildings for the modular theatres allows for a lot of the build to be done off site in controlled environments, which reduces the material waste on site and a fast turnaround time in terms of construction.

Where possible we have opted to use pre cast concrete products opposed to pouring for example lift shafts, block and beam roof for the services building. This means that there is less likely to be errors with the products on site and can be installed correctly first time round again reducing labour time and being able to be worked on and utilized immediately enabling works to continue at pace which ultimately speeds up programme times which in turn reduces plant on site.

The drainage design has been optimised to ensure water retention both on the roof of our building and within the system itself, thus minimising the peak impact on the existing drainage system. As the development is above existing accommodation, a separate drainage network has been incorporated under the new modular development.

