



Summary Report

Introduction

This report has been prepared to assess the details provided to discharge conditions 14, 15, 16, 17, 20, 24, 28 for Bicester Eco Town Exemplar Site, Banbury Road, Bicester under Application Reference 21/01227/F.

The report aims to provide a view on whether these conditions can be discharged based on the evidence submitted and subsequently what further evidence or information may be required to satisfy the conditions.

The planning application constitutes a replan of the proposed Phase 4 of the development, comprising an amended house type mix and a change in the total number of dwellings within this phase from 54 to 57.

A full planning application is made for 57 dwellings and associated infrastructure, comprising a mix of two-storey housing across 9 house types.

Scheme Layout

According to the Sustainability Statement, 9 house types are being considered in the proposed Phase 4 of the development. However, no further description or information is given on each house type or their quantity within the proposed plot. It should be noted that the covering note does indicate 10 house types.

Condition 14

“No development shall commence until full details of the measures to achieve zero carbon energy use, as defined by Policy Bicester 1 of the Cherwell Local Plan Part 1 2011-2031, through on-site solutions, have been submitted to and approved in writing by the Local Planning Authority. Should it be demonstrated to the satisfaction of the local planning authority that it is not possible to achieve zero carbon on site, a scheme for offsite mitigation in Bicester shall be provided, prior to the first residential occupation, for that portion of the energy use that cannot be met on site.”

In the first instance we can't see reference to Policy BIC 1 in section 2, although it is mentioned in the planning condition.

The proposed design aims for sufficient, but unambitious, fabric specifications (Section 3 of the Sustainability Statement - Table 2). The target construction specifications are a modest improvement or present worse values than Part L1 2013 notional dwelling specification. There is a significant margin for further improvements in accordance with the energy hierarchy in Policy ESD 2, particularly concerning are the u-values of the external walls and windows. The 2013 part L notional building value for External Walls is 0.18W/m²K but the proposed specification is 0.21W/m²K. Rationale should be provided as to why proposed fabric specification is lower than the 2013 Part L.

Section 3 presents the obtained reduction from Target Fabric Energy Efficiency (TFEE) and Dwelling Fabric Energy Efficiency (DFEE) by house type. It is unclear what is the considered building sample per house type.

It is stressed in Section 4, for the predominant house type, that improving the building fabric leads to a higher Dwelling Emission Rate (DER). This statement is contradictory to building performance fundamentals and implies that a poorer building fabric is beneficial in reducing emission rates. The calculations should be revised. We presume this relates to the use of the heat network and CHP engine e.g. greater heat demand is beneficial to the system. However, the provided information is scarce to evaluate the validity of this claim, more detail should be provided. Further clarification and elaboration on the performed calculations are required, including the considered carbon factors for the CHP.

The information presented in Table 8 of Section 5 is not clear. The presented information should be clarified including the underlying calculations. Further detail should also be provided on whether the calculation in table 9 provides a definitive answer as to whether all unregulated emissions will be offset by the overall PV generation and this complying with BIC1.

Based on the above, further elaboration and detail is necessary to assess the robustness of the evidence to discharge condition #14.

Condition 15

“No development shall commence until details of how each dwelling within that phase achieves good day lighting by achieving at least 2 points of the former Code for Sustainable Homes level 5 for day lighting shall be submitted to and approved in writing by the Local Planning Authority. The development shall thereafter be carried out in accordance with the approved details such that each dwelling achieves good day lighting.”

Section 7 of the Sustainability Statement presents the computed daylighting credits obtained from the methodology in the Code for Sustainable Homes. It is stated that the worst-case scenario per each house type was chosen.

According to the presented results, every house type achieved the minimum requirement points (2) of the Code for Sustainable Homes on daylight. The presented results are adequate to discharge condition 15.

Condition 16

“No development shall take place until a report outlining how carbon emissions from the construction process and embodied carbon have been minimised has been submitted to and approved in writing by the Local Planning Authority. The development shall thereafter be carried out in accordance with the recommendations contained in the approved report.”

The evidence provides some information however it is not clearly demonstrated how sustainable construction methods are integral to the design and construction of the development following Policy ESD 3. It is not clearly outlined in Section 8 of the Sustainability Statement how carbon emissions have been minimised.

An embodied carbon assessment is provided in the Sustainability Statement for 1 house type. Further clarification is required on the choice of a single building.

The major resource contributors to the embodied carbon of the buildings are identified. Carbon footprint reduction options are presented for the most impactful materials. However, the measures provided are generic and it is not confirmed that any of the measures will actually be delivered.

The references on how the emissions from the construction process can be minimised are also scarce and generic, without any actual concrete and quantifiable commitment.

The Sustainability Statement should provide clear commitments to demonstrate high standards of sustainable design and construction including:

- how do low embodied energy, recycled and energy-efficient materials that can be sustainably, locally and responsibly sourced have been prioritised;
- how the waste and pollution will be reduced, maximising the use of existing resources and minimising waste generated from excavation and construction.

Further elaboration is necessary to assess the robustness of the provided evidence to discharge condition 16.

Condition 17

“No development shall take place until a study, by a suitably qualified person, has been submitted to and approved in writing by the local planning authority, demonstrating that the design of the dwellings within that phase is such that overheating will not occur and that heat island effects have been minimised. The development shall thereafter be carried out in accordance with the agreed details”

Section 6 of the Sustainability Statement introduced an overheating risk assessment for 2 buildings of different house types in accordance with CIBSE TM59 guidance. It is justified in the application that the modelled buildings have been selected as their orientation and glazing areas represent worst-case scenarios for the development.

The presented results show that the initial fabric configuration fails to comply with CIBSE TM59 requirements. The mitigation measure allowing the analysed buildings to comply with both CIBSE TM59 requirements is adopting a glazing g-value of 0.50 to all elevations instead of the initial specification (0.72).

It is not clear what glazing g-value was considered in Section 4 and Section 5 of the Sustainability Statement, concerning the DFEE and DER calculation. It should be clarified what value was used.

Table 3 of the Overheating Assessment shows different construction specifications than in Table 2 of Section 3, namely different u-values for the external walls. Clarification is required on the construction specification considered in the overheating analyses.

The evidence that the design of the dwellings is such that overheating risk is reduced and that heat island effects have been minimised is shown based on a preferable calculation methodology. Reasonable detail and information are provided on the overheating risk to discharge condition 17.

Condition 20

“Prior to the commencement of development to provide the garages identified to include a green roof, full details of the construction and planting of the green roofs together with details of the maintenance programme that will ensure the delivery and long-term maintenance of the roofs shall be submitted to and approved in writing by the Local Planning Authority. The green roof shall then be constructed and maintained in accordance with the approved details.”

Data from the manufacturer confirms that the green roof will be an “extensive green roof”. Details of the construction and planting of the green roof are shown in documents from the manufacturer.

The presented maintenance programme is generic and vague. It is not shown a detailed maintenance programme that will ensure the delivery and long-term maintenance of the roofs.

The green roof layout plan is not provided and therefore is not possible to assess the arrangement of the green roofs within the development.

Further information is required to discharge condition #20.

Condition 24

“Prior to the first occupation of each individual dwelling, the dwelling shall be provided with solar PV in accordance with a scheme to be first submitted to and approved in writing by the Local Planning Authority.”

The planning documents provide the PV scheme for the dwelling within Phase 4, PV mounting details and an energy generation estimate per plot in Phase 4.

It is shown in the PV layout plan that every dwelling is provided with solar PV.

More clarity is required on if the information presented in the carbon equivalent datasheet matches the carbon balance in the Sustainability Statement.

Clarification is required on condition 24.

Condition 28

“All properties shall be provided with a system for rainwater harvesting in accordance with details to be submitted to an approved in writing prior to the first occupation of any dwelling. The rainwater harvesting system shall be implemented in accordance with the approved details.”

The planning documents provide details on the proposed system for rainwater harvesting, including the plumbing plans for several house types and data from the manufacturer on the installation and operation of the system.

No information is provided concerning water-saving potential of the proposed system for rainwater harvesting.

Further information is required on condition 28.

Conclusion

The revised application for the development of Phase 4 at Elmsbrook partially addresses the conditions for planning permission. The application should be updated following the above comments to be able to discharge the planning conditions.

Planning condition 14 requires particular attention and the considered assumptions and calculations should be revisited and explained. This condition concerns the measures to achieve zero carbon energy use and therefore is of central importance.

Additionally, the evidence on planning condition 16 can also be highlighted by the shortage of substance and actual commitments to minimise embodied carbon.