Summary Report (October 2023)

Introduction

This report has been prepared to assess the evidence provided for the discharge of Conditions 8, 13, 20 and 36 of Outline Application 14/02121/OUT amended by 22/03492/NMA for Phase 2 of Himley Village.

The report also contains a review of the S106 evidence submitted to Cherwell District Council (CDC) which applies to the masterplan site at Himley Village. The project is being assessed against planning policies from Cherwell District Council Local Plan 2011-2031, including Policy Bicester 1.

Recent relevant applications addressed in this statement include:

Masterplan

- 14/02121/OUT – outline application for the Himley Village masterplan
- 22/03492/NMA – non-material amendment seeking to change the wording of conditions
- 23/01496/DISC – application for discharge of Condition 8 for the masterplan

Phase 1

- 23/00183/DISC – application for partial discharge of Condition 20 (Carbon Emissions) and Condition 30 (CEMP) for Phase 1

Phase 2

- 23/01502/DISC – application for partial discharge of Condition 20 (Carbon Emissions) for Phase 2
- 23/01608/DISC – application for partial discharge of Conditions 13 (Future Climate Change) and 36 (Water Neutrality) for Phase 2
- 23/02786/OBL – application for partial discharge of the S106 Schedule 11 requirements for Phase 2.

23/01496/DISC

Condition 8 – Design Code

Documents reviewed: Cover Letter (Cala Homes, 02.06.2023); Design Code (Pegasus Group, June 2023); Mixed-use Framework Plan (26.05.2023); Mixed-use Development Principles drawing (26.05.2023); Open Space Provision Plan (26.05.2023); Green Space Framework Plan; Framework Plan.

Application 23/01496/DISC has been submitted to CDC for discharge of Condition 8 of application 14/02121/OUT as amended by application 22/03492/NMA for the masterplan.

Condition 8 states: *"Prior to or alongside the submission of any application for approval of reserved matters for the first phase of the development apart from where the first phase relates to an agreed infrastructure only phase (and other than on the area annotated as 'Other Uses' on Land Use Parameter Plan 4 drawing number 592-PL-103 Rev K where a Masterplan has been approved for that area pursuant to Condition 9), a site wide Masterplan and Design Code shall be submitted to and approved in writing by the Local Planning Authority prior to the determination of any reserved matters application for the first phase of development apart from where the first phase relates to an agreed infrastructure only phase. The Masterplan and Design Code shall set out the urban design approach for the site to include a regulating plan and supporting information to include:*
- Details to provide continuity with adjacent development

- A detailed masterplan for the area fronting the Middleton Stoney Road annotated as 'Other Uses' on Land Use Parameter Plan 4 drawing number 592-PL-103 Rev K showing the location of each of the land uses
- Key approaches to deliver sustainable development that as a minimum meets the Eco Town PPS standards
- The identification of Character Areas and for each, the built form and green spaces to include their key features, density, block layout and principles, structure and permeability
- Movement network and principles of streetscape including access locations, hierarchy, street type, form and design, cross sections, surface materials and landscaping, cycleways, footways, crossing points, street furniture, bus routes and stop locations
- Parking strategy including car and cycle parking standards and approach for residential and non-residential uses
- Public realm
- Building heights, scale, form, design features materials, architectural details and frontages
- Boundary treatments
- Key views, vistas, landmarks
- Landscape character, landscape types, green infrastructure, amenity spaces, public open space, play areas including their distribution, existing trees and retained hedges and biodiversity measures
- Provision and details of buffers to retained hedgerows and dark corridors for biodiversity
- Legibility and diversity of built form and landscape
- Landscape and boundary treatment principles for the buffer surrounding Himley Farm
- Drainage including sustainable urban drainage features
- Adaptability
All reserved matters applications and the development shall thereafter be carried out in accordance with the principles of the approved Masterplan and Design Code."

The Applicant has submitted:

- Mixed-use Framework Plan and Mixed-use Development Principles drawings for Phase 1
- Framework Plan, Open Space Provision Plan and Green Space Framework Plan for the masterplan
- Design Code

Phase 1 appears to be an infrastructure only phase. Therefore, the site-wide design code has been submitted with regards to the masterplan.

The Government's objectives for planning are set out in PPS 1 and include: *"to promote sustainable development by …. ensuring that eco-towns achieve sustainability standards significantly above equivalent levels of development in existing towns and cities by setting out a range of challenging and stretching minimum standards for their development, in particular by:*

- *providing a good quantity of green space of the highest quality in close proximity to the natural environment*
- *offering opportunities for space within and around the dwellings*
- *promoting healthy and sustainable environments through 'Active Design'2 principles and healthy living choices*
- *enabling opportunities for infrastructure that make best use of technologies in energy generation and conservation in ways that are not always practical or economic in other developments*
- *delivering a locally appropriate mix of housing type and tenure to meet the needs of all income groups and household size, and*
- *taking advantage of significant economies of scale and increases in land value to deliver new technology and infrastructure such as for transport, energy and community facilities".*

The Design Code (Pegasus Group, June 2023) sets out the Applicant's proposed approach to achieve sustainable development in line with the Eco Town PPS standard, as required within Condition 8, as follows:

Healthy and sustainable environments

The Sports England Active Design principles and the Applicant's response are:

1. 'Activity for all'
    - Accessibility for all ages and abilities has not been demonstrated. For example, there is no confirmation that wheelchair users have been considered. Or specific measures to ensure activity for the residents of the care home. Furthermore, have tactile paving and dropped curbs for wheelchairs and buggies been considered?
    - It is confirmed that pedestrian and cycle route will be well lit, with high quality surface materials and natural surveillance. Traffic calming measures are proposed.
2. 'Walkable communities'
    - 500m is stated to be the desirable distance for pedestrians, acceptable 1km and maximum distance 2km. Looking at the diagram on page 112, it appears that within 1200m of the site there are no bus stops or railway station, and that the nearest bus stops are within the maximum of 2000m. Can this be confirmed.
    - It is not clear whether any new bus stops or routes are planned. It is stated on page 114 that *"The future build out of the development includes provision of a bus link outside of the Himley Village development from the new strategic link road into the development to provide a priority route for bus services. The means of designing and enforcing the bus links will be determined through agreement with OCC".*
3. 'Connected active travel routes':
    - Cycle links to connect to existing National Cycle Network in Bicester.
    - 3m wide shared pedestrian / cycle footway on both sides of the roads (Middleton Stoney Road West, East, Axis J9 industrial road, Eastern site boundary, Northern site boundary and North-western site boundary).
    - It could be demonstrated that a continuous network is proposed, and a plan used to show the routes between public transport and key sites on site. It could also be shown how pedestrian and cycle routes have been prioritised to sites such as the school, the community centre and the village green.
4. 'Mixed uses and co-locating facilities'
    - People are more likely to combine trips and use active travel to get to destinations with multiple reasons to visit. Other than the primary school in the centre of the site, the care home and neighbourhood centres are located along the Middleton Stoney Road (B road). This suggests that people who are not residents or pupils at the school are not likely to explore the site. Therefore, the Applicant should confirm how they will reduce or restrict journeys by car to the site to drop off/pick up children from school.
    - Car clubs are proposed for non-residential plots (page 133)
5. 'Network of multi-functional open spaces'
    - Accessible high quality open space is proposed along the Wildlife Corridor which is also connected to the Village Green space. These are also the locations of the allotments, community gardens, community orchards and edible landscapes. The wide variety of green infrastructure measures is shown on page 26.
6. 'High-quality streets and spaces'
    - Active high quality streets are proposed. Secondary swales and ditches in the residential streets provide informal play spaces. It could be confirmed that the streets and open spaces are durable.
    - It is confirmed that *"A co-ordinated approach to street furniture, signage, and wayfinding elements along with the materials palette shall help to inform the sense of place at Himley".*
7. 'Providing activity infrastructure'
    - This measure is to enable sport, recreation and physical activity to take place should be provided across all contexts including workplaces, sports facilities and public space.
    - Himley Farm, Himley Meadows and Himley Green community park greenspaces are proposed to be used for information recreation including walking, jogging, play. Could signage be used to show routes for people to walk/run around the site?

- Allotments are provided which are good spaces for recreation and gentle exercise.
- The community pavilion in the sports park will have changing rooms with showers and lockers.

8. 'Active buildings, inside and out'
    - Active circulation spaces could be confirmed for the neighbourhood centre and the care home. Eg: in the neighbourhood centre the stairs are the easiest choice, with lifts off the main building entrance.
9. 'High-quality flexible spaces'
    - It is stated that "gully or permeable paving/overedge" will act as drainage measures to the shares surface/mews streets and tertiary streets, but it is not confirmed that permeable paving is proposed throughout.
    - Very little information provided on the flexibility of spaces.
10. 'Activating spaces'
    - This measures requires a commitment to encouraging people to be more physically active and increasing the awareness of activity opportunities within a community. For example, how community buildings will be run in a way that promotes an active lifestyle could be confirmed. Furthermore, confirmation that the greenspaces and variety of growing spaces will be managed to ensure they remain attractive, inviting spaces for all ages and abilities and promote neighbourhood participation and active lifestyles.

<u>Opportunities for infrastructure</u>

Proposed infrastructure for infrastructure and energy generation technologies that go above and beyond what is typically provided include:

Eco towns zero-carbon approach

- Page 129 states that *"all plot developers should work to the guidelines provided by LETI (London Energy Transformation Initiative) and UKGBC (UK Green Building Council) to achieve operational net zero balance:"*
    - *"This includes the use of low carbon heating systems from the outset of the design; Individual heat pumps and/or communal energy centres (powered from renewable and/or low carbon technology not CHP)".*
    - The Applicant should state that the plot developers must fully explore the opportunities for heat networks before individual systems (eg heat pumps) are explored. This is required in order to comply with the energy hierarchy.
- Page 129: *"To achieve net zero operational carbon, and to align itself with future Government policy, the development will be all-electric to benefit from the future renewables market and rapid decarbonisation of the national grid".* This is welcomed.
- Page 129: *"No new gas connections shall be provided as part of the site". This* is welcomed.
- The Applicant has committed to passive design measures and u-values that meet or improve on the Future Homes Standard requirements (page 130). This ambition is positive to see.
- The Applicant has stated on page 130 that "As the development is to be all-electric, a site wide district heating system is not proposed and the heating strategy will be developed at an individual plot level to promote innovative design solutions". This is insufficient justification for the decision to adopt at individual-heating based solution. The Applicant should consider a heat network with centralised energy centre and heat pumps (at the second/Be Clean stage of the energy hierarchy) before exploring an individual strategy (for the third/ Be Green stage).
- It is stated that plot developers should consider heat pumps, direct electric and ambient loop systems. The Applicant could state here the targeted minimum efficiencies for these systems (and equipment, eg: the heat pumps) to ensure that a minimum performance is achieved.
- Has wastewater heat recovery been considered? It does not appear to be.
- An energy generation and energy storage centre is proposed – could more detail be provided on this?
- It is confirmed that *"Electric vehicle (EV) charging points are to be included to all dwellings that have on-plot parking and garages. Residential parking spaces within parking courts and basement car parks*

are to include provision for 40% active charging spaces, with the remainder provided with passive provision for installation at a future date". This is welcomed.

- Page 130: *"Unless justified as part of a reserved matters application, roof mounted PV panels are to be maximised across the site. The following should be included:*
    - *Flat roof PV target of at least 70% of their area;*
    - *Pitched roofs oriented southeast/south/southwest and fully covered in PV;*
    - *Garage and parking structures to also be included where structure allows; and*
    - *Consideration given to ground mounted PV where space allows".*
    - Could it be required that all garages have bio-solar roofs (PV in addition to a sedum/green roof)?
- Also on page 130: *To facilitate the installation of PV panels across the site, pitched roofs should have a pitch of 35 degrees to maximise electricity generation. Pitched roofs should be oriented within 90 degrees of due South (i.e South, Southwest or Southeast facing slopes). Flat roofs shall be designed with minimum parapet heights to reduce overshading and maximise suitable area for panel installation".* This is welcomed.
- Are any demand-side response measures proposed such as metering capability requirements? Can it be confirmed that infrastructure to allow for these measures will be incorporated?

Embodied carbon:

- It is stated that "consideration should be given….to reduce embodied carbon" and that "each building architype should target the LETI 2020 target for embodied carbon emissions" (40% reduction over the 'business as usual' case). Targeting LETI 2020 targets is not ambitious given that a number of the dwellings will not be built until 2030, and therefore the LETI 2030 targets could be applied. The measures to reduce embodied carbon listed in page 131 are generic and therefore do not demand a minimum level of ambition from the plot developers. We would recommend that this section is strengthened to require a more ambitious approach to embodied carbon. Furthermore, could recommendations for whole life carbon be incorporated too?

Climate change adaptation:

- Each phase of the development will create a site-specific Future Climate Change Report.
- It is confirmed that overheating analysis will be carried out in line with CIBSE TM59 and TM52. Could TM49 be used to analyse future risk from climate change?
- Glazing will be designed in line with the ratios recommended by LETI and Passivhaus. *"Where large expanses of glazing are proposed on facades that face within 90 degrees of due south, the following strategies shall be implemented unless reasonable justification is provided: Brise soleil to reduce summertime solar gains; and enhanced G-value glazing" (page 132).* This is welcomed.
- Food growing spaces are provided to combat food security risk.

Water:

- A range of SuDS measures are proposed (swales, attenuation ponds, wetlands) for reducing flood risk.
- The site is in an area of water stress and water efficiency should be confirmed. Dwellings are targeting a potable water use of <105 litres/person/day. Could a more ambitious target be applied? Eg: LETI or RIBA Climate Challenge 2030 targets?
- Rainwater butts are proposed for dwellings to collect water for irrigation. Drought-resistant species are proposed for landscaped areas. Greywater or rainwater harvesting does not appear to be proposed – the Applicant should consider implementing water harvesting to reduce pressure on natural resources and to ensure water efficiency.

In general, the Design Code sets out the minimum standards for ensuring that the eco-town achieves the eco-town standard. However, we do not believe sufficient information has been provided to demonstrate that sustainability standards are "significantly above equivalent levels of development in existing towns and cities" and would recommend that the Applicant provides more detail to

demonstrate that the targets are "challenging" and "stretching". The Applicant could refer to industry guidance such as LETI 2030 and the RIBA 2030 Climate Challenge to demonstrate how the targets set will ensure challenging requirements for net zero and energy efficiency will be met.

Please note that we have not provided comments regarding (taken from the wording of Condition 8):

- Urban design approach and regulating plan.
- Details to provide continuity with adjacent development.
- A detailed masterplan for the area fronting the Middleton Stoney Road annotated as 'Other Uses' on Land Use Parameter Plan 4 drawing number 592-PL-103 Rev K showing the location of each of the land uses.
- The identification of Character Areas and for each, the built form and green spaces to include their key features, density, block layout and principles, structure and permeability.
- Movement network and principles of streetscape including access locations, hierarchy, street type, form and design, cross sections, surface materials and landscaping, cycleways, footways, crossing points, street furniture, bus routes and stop locations.
- Parking strategy including car and cycle parking standards and approach for residential and non-residential uses.
- Public realm.
- Building heights, scale, form, design features materials, architectural details and frontages.
- Boundary treatments.
- Key views, vistas, landmarks.
- Landscape character, landscape types, green infrastructure, amenity spaces, public open space, play areas including their distribution, existing trees and retained hedges and biodiversity measures.
- Provision and details of buffers to retained hedgerows and dark corridors for biodiversity.
- Legibility and diversity of built form and landscape.
- Landscape and boundary treatment principles for the buffer surrounding Himley Farm.
- Drainage including sustainable urban drainage features.
- Adaptability.

23/00183/DISC

Condition 20 – Carbon Emissions

Documents reviewed: Construction Environmental Management Plan (Hydrock, 21.02.2023); Cover Letter (Cala Homes Cotswold Limited, 23.01.2023)

Condition 20 states: *"No phase of development shall commence until a report has been submitted to and approved in writing by the Local Planning Authority outlining how carbon emissions from the construction process and embodied carbon within that phase will be minimised. To ensure development achieves a reduced carbon footprint in accordance with Policy Bicester 1 of the Cherwell Local Plan and guidance contained with Government Eco Town PPS".*

The Applicant has submitted a Construction Environmental Management Plan (Hydrock, 21.02.2023) which contains some suggestions for how direct carbon emissions will be reduced for construction site emissions. These include, as examples, *"consideration of low carbon transport modes for the transportation of construction materials to and from site"* and *"maximising the efficient planning of machinery and consider zero emission construction plant"* (see page 26). These suggestions are useful but do not provide any specific details, do not confirm which measures will be applied and at which Phase of the development the measures will be applied.

Page 26 of the CEMP also suggests that "historically there has been little guidance and regulation with regards to embodied carbon" which is not accurate. It is confirmed that an embodied carbon assessment will be carried out (has not been done yet) using the OneClick software and containing a comparison of the scheme against industry benchmarks (RIBA, UKGBC, LETI).

Insufficient evidence has been provided to demonstrate that embodied carbon emissions and emissions from construction have been adequately considered and measures implemented to reduce these. Insufficient evidence has been provided for Condition 20 for Phase 1. We would recommend that the questions above are addressed.

Please note we have not reviewed the evidence for Condition 30.

23/01502/DISC

Condition 20 – Carbon Emissions from Construction

Documents reviewed: Carbon Emissions for Construction Process Report (Hydrock, 19.04.2023).

Application 23/1502/DISC has been submitted to CDC for partial discharge of Condition 20 (Carbon Emissions) of application 14/02121/OUT for Phase 2.

Condition 20 states: *"No phase of development shall commence until a report has been submitted to and approved in writing by the Local Planning Authority outlining how carbon emissions from the construction process and embodied carbon within that phase will be minimised. To ensure development achieves a reduced carbon footprint in accordance with Policy Bicester 1 of the Cherwell Local Plan and guidance contained with Government Eco Town PPS".*

The Applicant has submitted a Carbon Emissions for Construction Process Report (Hydrock, 19.04.2023). This report states in several places that it relates to Phase 1 of the development but in other places to Phase 2 of the development. The Applicant should confirm which Phase of the development this report relates to.

Embodied carbon

The Applicant refers to the residential Greater London Authority and LETI benchmarks for embodied carbon, however the GLA benchmarks are not provided on page 8, instead the following benchmarks are provided:

- LETI 'business as usual' 800 kgCO2e/m2
- RIBA 2030 <625 kgCO2e/m2
- LETI 2020 target <500 kgCO2e/m2
- LETI 2030 target <300 kgCO2e/m2

It is not clear if the target for Phase 2 of Himley Village is shown on page 8 or if the Applicant is just showing potential benchmarks which could inform a target for embodied carbon.

OneClick has been used for the embodied carbon modelling. The report states that five house types have been modelled (titled Himley type 3, 5, 6, 7 & 8). How were the samples chosen? Are they representative and are they the worst performing of the dwelling types? Do we know how many homes of each type there are?

The table on page 13 confirms that the embodied carbon assessment based on the Bill of Quantities and industry benchmarks has only been carried out for Types 3, 5, 6, 7 & 8 but no further information is provided to confirm why this is the case.

Results for embodied carbon (page 11) show that LETI 2020 target <500 kgCO2e/m2 is achieved for Himley Type 7 and Himley Type 8 only. Himley Type 3, 5 & 6 all exceed LETI 2020. No justification is provided for this, so it is not clear if further measures are proposed or will be investigated in order to meet this benchmark.

When the number of dwellings is used to calculate a weighted average embodied carbon to represent the whole of Phase 2, the estimated embodied carbon is 560 kgCO2e/m2. This exceeds the LETI 2020 target.

The graph on page 12 is hard to read because of the scale. It could be useful to also have the graphs for each building element separately so they can be more easily analysed.

We would recommend that insufficient information has been provided to demonstrate how embodied carbon within Phase 2 will be minimised.

Whole life carbon

Modelling for RICS life cycle stages for in-use (B1-B5) and end of life cycle stages (C1-C4) have also been considered and results for whole life carbon provided. The results show than the house types meet the 'industry baseline' but not the additional industry recommended benchmarks (RIBA and LETI). What is the 'industry baseline' used here?

Results for the whole life carbon calculations (page 11) show the results against RIBA 2020 and 2030 embodied carbon figures of circa 600 kgCO2e/m2 and circa 300 kgCO2e/m2 respectively which are not correct. RIBA Climate Challenge 2030 has targets for 2025 and 2030 and these are <800 kgCO2e/m2 for 2025 and <625 kgCO2e/m2 for 2030. It is not clear from this evidence what the Applicant is actually demonstrating.

We would recommend that insufficient information has been provided to demonstrate how whole life carbon within Phase 2 will be minimised.

Construction emissions

The wording of Condition 20 explicitly refers to *"carbon emissions from the construction process"*. The Applicant addresses this on page 14. Have the calculations for A4 been based on a RICS benchmark? (in particular the HGV average laden (50% capacity to and from site).

Suggestions for reducing emissions from stages A4 and A5 are suggested however it is not confirmed if these measures have been implemented:

- For A4: emissions could be reduced through the use of low or zero emission vehicles for material delivery and collection – will this be implemented?
- For A5: just-in-time delivery, modern methods of construction, pre-fabrication, and using electric vehicles and equipment on site are suggested, but will they be implemented?

The Applicant should verify the assumption made on page 14:

- For B7 a water demand level of 84 litres/person/day was used in line with the Water Neutrality Statement. However, the Water Neutrality Statement (Hydrock, 01.06.2023) states a water use rate of 100 litres/person/day, not 84 litres/person/day. Which is correct?

Insufficient evidence has been provided for Condition 20 for Phase 2. We would recommend that the questions above are addressed.

23/01608/DISC

Condition 13 – Future Climate Change Impacts

Documents reviewed: Future Climate Change Statement (Hydrock, 09.05.2023).

Application 23/1608/DISC has been submitted to CDC for partial discharge of Conditions 13 (Future Climate Change Risks) and 36 (Water Neutrality) of application 14/02121/OUT amended by 22/03492/NMA for Phase 2.

Condition 13 states: *"Each reserved matters application shall be accompanied by a statement setting out how the design of buildings and the layout has taken account of future climate impacts, as identified in TSB research 'Future Climate Risks for NW Bicester', or any more recent assessment that has been published, and how the proposed development will be resilient to overheating, changing rainfall patterns and higher intensity storm events".*

The Applicant has submitted a Future Climate Change Statement (Hydrock, 09.05.2023). This is based on 500 units at Himley Village, which appears to be Phase 2 only (based on page 2). This is not clear from the report and should be confirmed by the Applicant.

The report states on page 1 that *"the TSB research 'Future Climate Change Risks for NW Bicester' was published in 2013, Hydrock have decided to base the report on the more recent guidance "UK Climate Change Risk Assessment 2022" (UK CCRA 2022)".* It could have been useful to also provide some evidence of how the proposals will take into account the future climate change impacts in the TSB research report, however this is not compulsory since the Climate Change Risk Assessment (CCRA) Report has been used.

The UK CCRA identifies the main risks from future climate change to be:

1. Risks to viability and diversity of terrestrial and freshwater habitats and species
2. Risks to soil health from increased flooding and drought
3. Risks to natural carbon stores and sequestration….leading to increased emissions
4. Risks to crops, livestock and commercial trees from multiple climate hazards
5. Risks to supply of food, goods and vital services due to climate-related collapse of supply chains and distribution networks
6. Risks to people and the economy from climate-related failure of the power system
7. Risks to human health, wellbeing and productivity from increased exposure to heat in homes and other buildings
8. Multiple risks to UK from climate change impacts overseas.

The Hydrock report contains a climate risk and vulnerability assessment and overheating analysis based on CIBSE TM59 and Building Regulations Part O.

Page 4 of the report contains Table 1: 'Key risks and opportunities' which lists the risks and provides an 'urgency score' for each (either labelled as 'further investigation' or 'more action needed'). Does this translate to, using a red/amber/green rating 'further investigation' representing amber and 'more action needed' for red? Suggesting that all climate change risks are 'urgent' and not currently fully addressed in the proposed development? The Applicant should confirm this.

Baseline future climate risks are estimated to be:

- Very low – Ground movement/subsidence; fluvial flooding; and pluvial flooding
- Low – Extreme or prolonged high temperatures (heat stress)
- Medium - Drought and water availability; and wildfire

Climate risks where the proposed development is likely to increase the likelihood or consequence of the risk are estimated to be:

- Low – High winds and lightning
- Medium – Fluvial and tidal flooding
- High – Pluvial flooding; and drought
- Very High – Extreme prolonged high temperatures (heat stress); and wildfire. These have been rated as 'very high' because of the very high likelihood that these events could take place and the high consequence of these events.

Risk reduction strategies are suggested including:

- Green infrastructure and vegetation to reduce heat loads, act as natural drainage features and reduce wildfire severity/spread (aiming to mitigate heat stress, drought and flooding risks). The actual extent of these measures has not been made clear, the report states that "significant" green

infrastructure will be incorporated. More detailed information should be provided to demonstrate measures designed to mitigate climate risks, including plans.

- SUDS measures to mitigate drought and flooding risk, however no specific details are provided for proposed measures. The report states *"the development will give consideration to these measures"*. Details of incorporated measures should be provided.
- Building design, both passive and active measures are suggested however these are generic and detail could be provided to confirm, for example, what "reliable and efficient" systems have been prioritised in order to reduce risk of heat stress causing a greater reliance on cooling systems. Details of incorporated measures should be provided.
- Water efficiency measures including water efficient sanitaryware and smart meters are proposed and generic commentary provided on these (for example the actual target for low flow taps and targeted water consumption in litres/person/day are not provided). Details of incorporated measures should be provided.
- Rainwater harvesting suggestions are provided including collecting from green roofs and from floor-tiled areas, and it is stated that water recycling systems would mitigate the risks of drought and flooding. However, it is not confirmed that these measures are proposed and the statement simply says *"the development will give consideration to these systems"*. Details of incorporated measures should be provided.

The wording of Condition 13 specifically states a requirement to demonstrate how resilience to overheating, changing rainfall patterns and higher intensity storm events are incorporated into proposals.

Overheating:

Chapter 18 focuses on overheating:

50% of the homes failed the simple overheating criteria from Building Regulations Part O. Of these failing homes, 30% were selected for dynamic thermal modelling using CIBSE TM59. This does not confirm that the worst-performing dwellings were modelling using CIBSE TM59. It is not clear why 30% of the 'failing' homes were selected. The Applicant should clarify the modelling approach taken. We would recommend justification is provided to confirm why all of the failing homes were not modelled using dynamic thermal modelling, and how the homes that were selected for modelling were chosen.

We would also recommend that the Applicant demonstrates how compliance with Building Regulations Part O is achieved, based on the modelling and proposed overheating risk mitigation measures.

It is stated on page 16 that *"the worst-case units assessed passed the 2020 and 2050 weather scenario overheating test. This demonstrates a 'future-proof' approach to the design at this point. 2080 climate scenarios were not tested. This suggests that the remaining units which failed to meet the Simplified Method are unlikely to be at risk of overheating. As dynamic thermal modelling and CIBSE TM59 analysis is more accurate than the Simplified Method no further testing is required"*. We would recommend the Applicant demonstrate that the units selected for the thermal modelling were expected to be the worst performing.

Did the Applicant consider using CIBSE TM49 for the thermal modelling? Although based on London data, TM49 *"enables designers to analyse the summer performance of their buildings and investigate the impact of urban macroclimatic factors and climate change when carrying out overheating risk assessments for buildings in London"* (quote from CIBSE Website: https://www.cibse.org/knowledge-research/knowledge-portal/technical-memorandum-49-design-summer-years-for-london-2014-pdf)?

The CIBSE Overheating Position Statement 2020 (from https://www.cibse.org/policy-insight/position-statements-and-briefings/overheating-position-statement) states that *"CIBSE recommends the use of future weather files (TM48 and TM49), that capture future projections of changes in climate when assessing overheating risk and mitigation options at the design stage. The use of the 2020s (2011 – 2040) medium emission scenario Design Summer Year 1 (DSY1) was introduced as the minimum requirement in order to demonstrate compliance with the TM59 methodology as well as for compliance with DfE's BB101 requirements in the design of schools. CIBSE recommends it is adopted as the minimum weather file used for all overheating assessments. Additional weather files such as DSY 2&3 for the 2020s, as well as future timelines (2050s and 2080s), are recommended to explore performance where there is particular concern, for example presence of*

vulnerable occupants, and/or where required in the client's brief, or for testing the performance of mitigation options under more extreme events". The Applicant should confirm that appropriate future weather files have been used for the analysis.

Rainfall patterns

As noted in the report, the geology of the catchment area in which the site is located makes it vulnerable to periods of below average rainfall and at risk of future drought. Drought has been suitably considered during the risk assessment however it has not been made clear if the suggestions to mitigate against this risk have been incorporated into the design of Phase 2.

Pluvial or surface water flooding has been considered as a risk to the development and estimated to be a high risk. Measures to mitigate this risk (SUDS measures including retention vegetation, SUDS-enabled street trees, retention systems, infiltration trenches, filter drains and permeable surfaces) are listed however it is not confirmed which measures are proposed for Phase 2.

Storm events

It is stated in the report that *"the proposed development is not expected to intensify any impacts from storm events therefore the risk remains low and the proposed development has no significant impact".*

In conclusion, the Applicant should address the queries above and demonstrate how the climate change risks identified in the report have been mitigated by the design proposals for Phase 2. Insufficient evidence has been provided for Condition 13 for Phase 2.

Condition 36 – Water Neutrality

Documents reviewed: Water Neutrality Report (Hydrock, 01.06.2023).

Application 23/1608/DISC has been submitted to CDC for partial discharge of Conditions 13 (Future Climate Change Risks) and 36 (Water Neutrality) of application 14/02121/OUT amended by 22/03492/NMA for Phase 2.

Condition 36 of 22/03492/NMA states *"Prior to the commencement of the any development in a phase that includes the construction of any new buildings, details of the strategy to work towards water neutrality, in accordance with the Eco Towns PPS shall be submitted to and approved in writing by the Local Planning Authority. Each reserved matters application that includes the construction of any new buildings shall demonstrate how it contributes to and is in accordance with the approved strategy".*

For application 23/1608/DISC, the Applicant has submitted a Himley Village Water Neutrality Statement (Hydrock, June 2023). This appears to apply to Phase 2 of the masterplan only. Therefore, an overall Water Neutrality Strategy is required for the whole site AND a statement for each phase is required to demonstrate how each phase contributes to and is in accordance with the site-wide strategy.

The definition of water neutrality is provided in the statement to be from Annex B of the Eco Town PPS Guidance Document and is: *"the concept where the total water used after a new development is no more than the total water used before the development. This requires meeting the demand through improving efficiency of the use of the existing water resources. Water neutrality needs to be assessed within a defined area, normally the water company's water resource zone".*

Hydrock Water Neutrality Report (01.06.2023) confirms:

- Existing or pre-development water consumption is based on people per household and the Part G requirement of <125 litres/person/day. This is the minimum requirement set in Building Regulations Part G.

- Water efficiency measures have been proposed and the targeted post-development water efficiency level is 100 litres/person/day.
- Rainwater harvesting is not proposed. It is discounted due to generic cost estimates that are no project specific. We would recommend that more detailed calculations of potential applications for rainwater harvesting are explored and evidenced.
- Greywater harvesting is not proposed due to estimated low yield for greywater (the level of greywater that could be created is estimated to be 6 litres/person/day, but the amount required for the system to be efficient is not provided). It is also stated that cost is a prohibiting factor for a greywater system. This conclusion is based on the predominantly residential uses for the site, however there are non-residential uses at the proposed development where greywater recycling could be used. We would recommend that the Applicant provides further information to demonstrate their approach, as it may be difficult to achieve water neutrality without consideration of greywater recycling.
- No water offsetting options were deemed to be available (at time of writing of report).
- Therefore, reductions in water consumption are only achieved for Stage 1 of the water neutrality hierarchy (Figure 2, page 3).

The proposed measures result in a 20% saving in water consumption (between the baseline or pre-development estimated water consumption and the proposed water use for Phase 2). Since rainwater harvesting and water offsetting opportunities are not proposed, this suggests that there is a shortfall of 80% which the development would need to be addressed in order to achieve water neutrality.

Insufficient evidence has been provided for Condition 36 for Phase 2. In addition, evidence demonstrating the water neutrality approach for the masterplan is missing.

23/02786/OBL

S106 Schedule 11 - Evidence Review

The overarching Zero Carbon Strategy for the masterplan (1700 homes) is missing. This should be provided as a priority.

Relating to Phase 2 only, document reviewed: Energy Strategy, Hydrock, 01.06.2023.

The S106 agreement for 14/02121/OUT dated 30th January 2020 contains Schedule 11: Zero Carbon. Schedule 11 requires:

"1.1 Prior or to or no later than submission of an application for Reserved Matters approval for the first Phase of the Development, a strategy for zero carbon generation and carbon balance ("Zero Carbon Strategy") shall be submitted to and approved by the District Council. The strategy shall show how the Development achieves zero carbon as defined in the Eco Towns PPS and referenced in the Cherwell Local Plan Policy Bicester 1.
1.2 This Zero Carbon Strategy shall include (as a minimum):
1.2.1 An energy demand assessment which:
1.2.1.1 Specifies thermal performance standard and estimate total energy demand in kWh/year. This can be calculated using Standard Assessment Procedure (SAP) for residential buildings or the Simplified Building Energy Model (SBEM) for non-residential buildings or other software tools approved under the Notice of Approval or agreed in writing by the District Council, that calculated energy demand based on information provided, including construction materials, insulation levels, choice of fuel for heating and efficiency and control of heating systems.
1.2.1.2 Estimates hot water demand in kWh/year.
1.2.1.3 Estimates regulated and unregulated residential electrical demands (kWh/year). Regulated demand can be calculated using SAP or SBEM as above. Unregulated demand should be estimated using best practice benchmarking and referencing suitable historic demand data.

1.2.2 Energy demand reduction proposals, which:
1.2.2.1 Provides details of how energy demand will be reduced through design and specification and the estimated carbon savings. This could be through a range of measures e.g. enhanced fabric energy efficiency, energy efficient appliances, low energy lighting. Quantity this reduction in kWh/year.
1.2.2.2 Provides details on how the balance between ensuring good insulation and air tightness to minimise heat loss in the winter months, and potential overheating in the summer months has been carefully considered.
1.2.3 An energy generation strategy which
1.2.3.1 Specifies energy generation technologies and their outputs in kWh/year (including efficiencies and coefficient of performance)
1.2.3.2 Specifically for photovoltaics, provides the estimated area of panels and locations
1.2.3.3 For gas CHP, provides the separate heat and power outputs and efficiencies and the heat:power ratio as well as the overall efficiency of the plant
1.2.3.4 Provides details of thermal storage is applicable
1.2.3.5 Provides detail of back and peak boilers is applicable
1.2.3.6 Provides details of predicted losses, such as distribution losses.
1.2.4 Carbon balance:
1.2.4.1 Provides appropriate carbon factors. These currently include: grid electricity – 0.254 kgCO2/kWh, natural gas – 0.184 kgCO2/kWh (DEFRA 2019)
1.2.4.2 Provides a spreadsheet showing the overall carbon balance of zero or better
1.2.4.3 If necessary, and if the carbon balance has not satisfied the True Zero Carbon target, then details of local off-site carbon saving measures must be provided with details of the carbon saved. Such measures must be deliverable and must show local benefit.
1.2.5 Prior to Implementation of any part of the Development to submit and secure the written approval for the District Council for a Zero Carbon Implementation Strategy which shall build on and include the details of the Zero Carbon Strategy approved pursuant to paragraph 1.1 above and shall provide additional detail of design and as to how the strategy will be implemented including
1.3.1 SAP, SBEM or other software tools approved under the notice of approval analysis for each individual property
1.3.2 Daylighting analysis showing how all residential properties achieve both of the following:
1.3.2.1 Kitchens achieve a minimum Average Daylight Factor of at least 2%
1.3.2.2 All living rooms, dining rooms, studies and home offices achieve a minimum Average Daylight Factor of at least 1.5%
1.3.3 Detailed photovoltaic area schedule
1.3.4 Assessment of overshading, either from adjacent buildings or from trees, and the consequent building by building effect on photovoltaic output (kWh/year)
1.3.5 Overheating assessment using CIBSE TM52 as the methodology or such other approach as agreed in writing by the District Council, and including modelling of future climate scenarios
1.3.6 Details of back up boilers, peak boilers, sizing of plant, thermal storage capacity and district heating efficiencies
1.3.7 Details as to how the zero carbon measures set out in the Zero Carbon Strategy will be delivered
1.3.8 All zero carbon measures identified in the Zero Carbon Strategy and Zero Carbon Implementation Strategy are to be provided from first Occupation of any building comprising the Development unless otherwise agreed in writing by the District Council".

The Eco Town PPS definition of zero carbon includes regulated and unregulated energy.

Application 23/02786/OBL for the discharge of clause 1.1, Schedule 11 of the S106 has been submitted. The Applicant has provided and Energy Strategy (Hydrock, 01.06.2023) for this application.

The Energy Strategy (Hydrock, 01.06.2023) partially provides the information required for Schedule 11. Responses are broken down into clauses, as follows:

The energy demand assessment (Schedule 11 paragraph 1.2.1)

Using regulated emissions only, the reduction in carbon emissions over the Part L 2021 baseline is 100%.

Using both regulated and unregulated emissions, the reduction in emissions over the Part L 2021 baseline is 87.6%.

On page 15 the report states that "as the grid decarbonises, it will eventually become carbon negative" – this does not demonstrate how net zero carbon will be achieved for the development, in line with the Eco Towns PPS zero carbon definition.

Page 13 of the report compares the results of the Himley Village EUI breakdown against Part L 2021 and RIBA 2025. The results could also be compared against RIBA 2030 and LETI (both 35 kWh/m2/year), in line with the other evidence submitted (Conditions 8, 13, 20 & 36). Have these been excluded because the EUI does not meet these benchmarks? The EUI for Phase 2 of Himley Village is targeted at 54.7 kWh/m2/year. Further clarification is required.

The report states on page 14 that *"the strategy has shown that it significantly outperforms current industry benchmarks, as it falls below both the Part L 2021 notional building and the RIBA 2025 EUI target benchmarks"* – but this is not true if the RIBA 2030 and LETI benchmarks are included too. Clarification is required.

The report states on page 13 that the bulk of EUI is now attributed to unregulated energy. Whilst it is true that unregulated energy is the largest contributor to the EUI (23.3 kWh/m2/year) , the result also show that domestic hot water (17 kWh/m2/year) and space heating (8.4 kWh/m2/year) contribute to the overall picture.

<u>Energy demand reduction (Schedule 11 paragraph 1.2.2)</u>

Suitable information provided for passive design measures:

- Proposed u-values: Wall 0.18, Roof 0.10, Floor 0.13 and Glazing 1.2 W/m2K. Targeted air permeability of 3 m3/hour/m2.
- Ventilation strategy includes openable windows and MVHR with heat recovery (with low specific fan power).
- Heat emitters proposed are low temperature radiators and underfloor heating.
- All lighting will be LED.
- Smart metering is proposed to all dwellings to provide real time energy use and cost data.

Information on insulation levels and performance is missing.

Wastewater heat recovery is proposed for the showers – is this all showers?

<u>Energy generation strategy (Schedule 11 paragraph 1.2.3)</u>

The Himley Villate site wide heat network is proposed in the outline planning application with space heating and domestic hot water to be provided by the site-wide district heating network powered by a gas CHP. However, the report states (page 10) that *"as a site wide heat network is not currently being brought forward, a smaller heat network could be developed at phase level. Phase 2 consists of low-density housing and the annual heat load would not be sufficient to support a heat network. Furthermore, to align with the UK Government Future Homes Standard, it is the desire of the development to be gas free and all heat will be provided via electricity. To provide more control in the future to residents over how their heat is produced, heating and hot water infrastructure will be provided at a localised level."*. Is the proposal to provide all electric systems at the phase level (phase 2 centralised heat pumps) or individual level (per household)? If individual systems are proposed, this is a significant deviation from the outline application.

GSHPs are proposed for space heating and domestic hot water for the apartments in Phase 2. ASHPs will be used for the terraced, semi-detached and detached houses in Phase 2.

The Applicant could state here the targeted minimum efficiencies for these systems (and equipment, eg: the heat pumps) to ensure that a minimum performance is achieved.

High thermal efficiency and low distribution losses for heating equipment are proposed – but the Applicant should provide estimated figures for these.

The Applicant should confirm the proposals for thermal storage.

Hot water demand is estimated to be 150 litres per day for a *"typical dwelling at Himley Village, however this maybe increased for larger family houses"* (page 12) and the hot water demand for Himley Village Phase 2 is stated to be 17 kWh/m2/year on page 13 – the hot water demand in total in kWh/year is missing.

PV is proposed *"on all roofs that receive sunlight (those that are oriented east through west)".*

"The site layout has been designed to maximise the number of roof spaces that will be suitable for installing PV panels. Due to the roofs being pitched, panels can be installed without the need for spacing to account for overshadowing, increasing the overall roof area available". Energy Supplied: 2,474 kWp and Carbon Emissions Saved 289,000 kgCO2/m2/year.

"This PV installation takes advantage of all suitable roof space within the development to maximise carbon emission reduction. The PV proposed will provide a carbon offset of approximately 289,000 kgCO2/yr, this is equivalent to a 35% reduction in carbon emissions from PV alone (taking into account both regulated and unregulated carbon)".

Appendix A shows a single dwelling type has been analysed for amount of PV. The Applicant could analyse further dwellings. Why have all of the dwelling types not been analysed?

The Applicant could justify the proposed small area of roof and the dormer windows which reduce the space available for PV. We would recommend the Applicant re-submits Appendix B PV array diagram, which has too many colours and symbols and cannot be easily read.

<u>Carbon balance (Schedule 11 paragraph 1.2.4)</u>

A carbon balance spreadsheet is missing. Confirmation that should the true zero carbon balance not be met on site, that locally beneficial and deliverable off-site carbon saving measures will be provided, including details of these is missing.

As noted above, on page 15 of the report, it is shown that the regulated carbon emissions reduction on site meets 100%, however the total carbon emissions reduction (including both regulated and unregulated emissions) is 86.7%. No further analysis is provided to demonstrate how the shortfall of 12.4% will be achieved.

Page 14 of the report states that *"Although phase 2 does not currently meet net zero, it is likely that the future parcels will have greater potential to reach net zero. This is due to both the green skills gap and the increased opportunity for renewable energy".* These arguments do not demonstrate that the overall carbon balance of zero or better has been achieved or will be achieved.

The Applicant states that due to the current green skills gap for Passivhaus level performing fabric that achieving a LETI EUI of 35 kWh/m2/year is *"extremely difficult to achieve in practice and at a scale where optimal orientation to reduce demand may also not be possible for energy home".*

The Applicant also states that the wider masterplan for Himley Village includes commercial buildings with flat roofs which will be able to generate more renewable energy and improve the incentive to include batteries int eh design. We would welcome the Applicant to demonstrate this with indicative calculations to demonstrate how contributions from the wider masterplan could enable Phase 2 to meet the requirements of the Section 106 Schedule 11 requirement to achieve Eco Towns PPS zero carbon definition.

Comparison on page 15 with NW Bicester Eco Town Exemplar Site states that using electricity makes the Himley site more futureproofed and more able to meet zero carbon as the grid decarbonises. It is not clear what this comparison is provided for?

It is stated that the carbon factors used are from SAP 10.1 (page 2) – but elsewhere in the report it is confirmed that SAP 10.2 software has been used. Which is correct? On page 3 it is stated what the gas carbon factors are in the latest Part L, but it is not confirmed that these have been used in the analysis.

Zero Carbon Implementation Strategy (Schedule 11 paragraphs 1.2.5 to 1.3.8)

No Zero Carbon Implementation Strategies have been provided or committed to in the Energy Strategy (Hydrock, 01.06.2023).

The Applicant has used suitable SAP and SBEM software for the modelling (SAP 10.2 and IES Virtual Environment).

No information provided in the Energy Strategy to respond to the S106 Schedule 11 daylighting requirements. The Applicant should provide this.

The assessment of overshading, either from adjacent buildings or from trees, and the consequent building by building effect on photovoltaic output (kWh/year) is missing. The area of PV proposed should also be calculated and provided to meet the wording of S106 schedule 11.

Overheating analysis is missing from the S106 evidence.

Details of back up boilers, peak boilers, sizing of plant, thermal storage capacity and district heating efficiencies should be provided to meet the wording of schedule 11. This is missing.

We would recommend that the Applicant submits one document to comprehensibly respond to the S106 requirements and to address the queries above.

Conclusion

The documents submitted for Conditions 8, 13, 20 and 36 partially address the requirements of the planning Conditions. The Applicant should review the comments provided above and update the evidence submitted accordingly.

With regards to the S106 evidence, it has not been made clear if the Energy Strategy applies to the masterplan site or just to Phase 2 of the proposals.

The Applicant should address the comments made within this report, in addition to submitting the amended evidence in a more coherent manner, making it clear which Phase of the development the evidence relates to, and clearly labelling evidence that submitted to address requirements relating to the masterplan strategies.