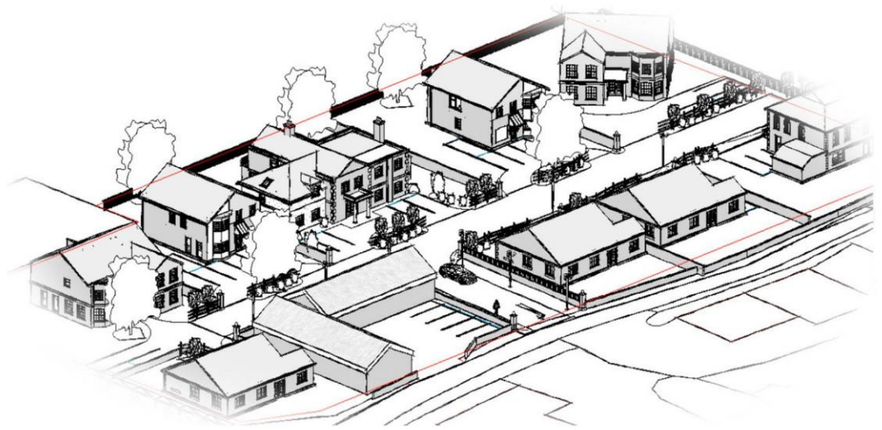
Sustainability Appraisal

The Dairy, Horndean



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Revisions

Rev.	Date	Reason for issue	Prepared	Reviewed		Approved	
0	03.12.2020	Draft issue for comment	RC	SP	12.2020	GS	12.2020
1	14.12.2020	Issued for planning	RC	SP	12.2020	GS	12.2020

Contents

1 Executive Summary

The report has been prepared to support the planning application for The Dairy in Cathrington and focuses on the key sustainability targets for the proposed development. The development will consist of 9 new dwellings, 2 new commercial units and a portion of land allocated to the Scouts.

As demonstrated in detail in this appraisal, the proposed sustainability features are summarised below:

- Demonstrate compliance with Approved Document Part L1A: conservation of fuel and power in new dwellings and aim to achieve a 19% improved in CO_2 emissions;
- Apply the passive design measures to align with the fabric first approach;
- Where possible, use environmentally certified materials and source locally;
- Sort on site waste into the appropriate waste streams;
- Provide adequate internal and external storage space for operational waste;
- Reach a target of no more than 100 litres per person per day of domestic water consumption;
- Prevent flooding of the site through on-site soakaways;
- Minimise sources of air and light pollution during operation by specifying all electric building services and time controlled external lighting;
- Provide a healthy space for the occupants to live and work in with natural daylight;
- Protect and increase the ecological value of the site by planting native species;
- Minimise pollution and waste production during construction with a Site Waste Management Plan.

Figure 1 Proposed Site Master Plan

2 Introduction

2.1 Purpose of the Report

The aim of this report is to describe the sustainability strategy for The Dairy ("proposed development") to outline the measures taken to enhance the site and provide a new sustainability driven development.

This Sustainability Appraisal will respond to the emerging policies defined in the new Local Plan 2017-2036 for East Hampshire District Council.

2.2 Development Description

The proposed development consists of 9 new build dwellings comprising a mix of single and two storeys. In addition to these, 2 new commercial units will be provided for light industrial use. A portion of land has been gifted to the Scouts for a new community driven facility.

3 Policy Context

East Hampshire District Council adopted their Local Plan in 2014 also called the Joint Core Strategy (JCS) with the Supplementary Planning Documents (SPDs) proving further detailed guidance on polices within the Local Plan.

East Hampshire District Council is reviewing the current JCS and are aiming to adopt the new Local Plan 2017-2036, which will provide the planning framework up to 2036. The Council are aiming to adopt the revised policies by the end of 2020. This document is still under review; however it is important to address the future policies and where relevant, the current policies are included.

Section 7 of the adopted JCS sets out the Strategic Objectives for environmental sustainability: '*In trying to create sustainable communities it is imperative that the Council and the National Park Authority continue to protect and enhance the District's high quality natural and built environment'.*

The Council aims to deliver the above statement through the implementation of the below current Core Policies relevant to sustainability development:

- Core Policy CP21: Biodiversity
- Core Policy CP24: Sustainable Construction
- Core Policy CP25: Flood Risk
- Core Policy CP26: Water Resources/ Water Quality
- Core Policy CP27: Pollution
- Core Policy CP29: Design
- Core Policy CP31: Transport

The emerging draft East Hampshire District Local Plan 2017 – 2036 has little, if any weight, in the consideration of planning applications as at Winter 2020/21. Emerging policies such as S19, DM25, S24, DM27, DM28, S25, S26, DM29 and S30 have been considered against the background of extant adopted policies in the JCS and the principles the Council will be seeking in its new Local Plan when that progresses beyond its present initial stages.

4 Sustainability Statement

4.1 Sustainable Development

Sustainable development is defined as development that meets the needs of the present without compromising the ability for future generations to meet their own needs. To achieve this, developments can not focus on one single aspect but must use the overlapping three pillars of sustainability: Environmental, Social, Economic.

To ensure that tangible sustainability measures are incorporated into the design and to prevent a 'tick box' exercise, it has been determined that HQM One is not a suitable methodology for the site. This is due to the size and bespoke nature of the development. Where feasible, issues from HQM One have been incorporated into the design where beneficial to the sustainability of the project.

The industrial units on site are scoped to shell only therefore a BREEAM assessment will not offer sustainable solutions towards the design. These are not included in the report due to the size of these.

4.2 Energy

The proposed development's energy performance is assessed using the accredited SAP software to demonstrate compliance with Part L1A of the building regulations for new dwellings. The Dwelling Emission Rate (DER) is calculated based on the proposed specification for the dwelling. The dwelling's performance is then assessed against the notional building's Target Emission Rate (TER). The fabric first approach adopted by the SAP methodology allows for more passive measures to be implemented prior to considering the active heating and cooling options.

In accordance with the new Local Plan 2017-2936 *Policy DM28: Resource efficient design* and the UK Green Building Council (UKGBC), the dwellings will aim to achieve a reduction in CO_2 emissions of 19% of the DER compared to the TER of Part L1A of the Building Regulations. Where this is not feasible, the dwellings will achieve the most viable reduction in CO_2 emissions.

As stated above, passive design measures are the first steps toward energy efficient dwellings. These take advantage of site location and climate to reduce the dwellings energy demand. Those that are incorporated into the design are outlined below.

Table 1 Passive design analysis for the proposed development

Passive Design Measure	Design Feature
Building Orientation	The dwellings are designed to maximise solar gains
Building Fabric	In accordance with the minimum requirements set out in AD Part L1A
Thermal Mass	White paint render on some of the dwellings to prevent excess overheating and passive cooling measures
Daylighting	Windows are designed to allow adequate daylight into each room while preventing excess glare to the occupants Where feasible, dual and triple aspect to allow daylight to the space throughout the day
Ventilation	Windows are designed to provide natural ventilation by being openable and provide cross ventilation in larger spaces.

These passive design features contribute to the sustainability strategy for the development and align with the fabric first approach required by the SAP calculations.

4.3 Materials

As part of the overall sustainability approach for the dwellings, materials will be selected where possible to encourage sustainable procurement in line with *Policy DM28: Resource efficient design* and *Policy S24: Planning for climate change.*

All timber procured for the dwellings will be legally and responsibly traded and harvest in accordance with the Forest Stewardship Council (FSC) or the Programme for the Endorsement of Forest Certification (PEFC).

As part of preserving natural resources, reclaimed bricks will be used where feasible to avoid the emissions generated by the manufacturing of raw bricks. In addition to this, roof tiles to the three bungalows and the industrial units will be manufactured from Supaslate which is a suitable alternative to slate and is 100% recyclable at end-of-life. Supaslate is manufactured in the UK, preventing unnecessary overseas shipping and associated emissions.

Where possible, materials will be sourced locally to cut down on fuel emissions and support the local economy.

Where feasible, materials will be certified under an Environmental Management System (EMS) or be BES 6001 accredited.

4.4 Waste Management

Demolition

An initial walk around of the site indicated large amounts of hardstanding, scrap and derelict buildings. The site is considered brownfield and currently occupied.

Figure 2 Current site plan (Google Map data 2020)

The sheet roofing is contaminated with asbestos and will be disposed of by a licenced waste carrier to prevent exposure and pollution to the surrounding area. The brickwork for the superstructures and the concrete hardstanding will be broken up and disposed of for crushing and recycling. The hardstanding will be re-used for the proposed development to prevent importing stone for the temporary site works.

Overall, the site consists of unusable materials including debris and scrap. As part of the sustainability strategy, these will be collected and sorted into separate waste streams for recycling and where relevant landfill.

Construction Waste Management

After assessing the existing building and identifying opportunities for reuse of in-situ materials, the proposed development is aiming to reduce the waste generated during construction. Waste management targets will be set prior to construction activities and monitored throughout. Waste generated on site will be sorted into the appropriate waste categories.

Operational Waste Management

Another key aspect of sustainability is how waste is managed during the dwelling's occupancy and ensuring that adequate provision is provided to support building occupants in their sustainable waste decision-making. This is typically through the integration of facilities for recycling and composting of organic waste streams, and through the accessibility of these services to the occupants.

East Hampshire District Council is the refuse collector for the site and provides general, recycling and glass collection. The dwellings will have the appropriate external space to store their bins. This complies with *Policy S30: Transport* of the new Local Plan 2017-2036.

Adequate internal storage room for each dwelling for general and recycling waste will be provided in accordance with the HQM One requirements below.

Dedicated internal space with fixed unit to store recyclable waste will be provided:

- 30 litres for homes with 1-2 bedrooms
- 40 litres for homes with 3 or more bedrooms
- Separate composting bin
- Dedicated wheelie bins

4.5 Water Consumption

Water supplies are being put under pressure due the increased demand of the population and the intensifying droughts brought on by climate change. The average person in the UK consumes 150 litres per day. This is partially due to the consumer's routine however this can also be attributed to inefficient sanitaryware which have a high-water consumption.

The water efficiency of sanitaryware components are crucial in reducing water consumption and in meeting local and national targets. The proposed development will target a minimum domestic water consumption of no more than 100 litres per person per day which exceeds the criteria outlined in the new Local Plan 2017-2036 *Policy DM28: Resource efficient design*. These are based on the water fitting standards determined in HQM One – Water Efficiency for water-consuming components.

Table 2 below sets out the proposed minimum performance requirements, in accordance with the sustainability assessment methodology HQM One.

Table 2 Proposed minimum performance requirements for the sanitaryware components at the proposed development

Water fitting – Non-Domestic Areas	Capacity / flow rate	Units
WC, dual flush (effective)	4/2	litres dual flush
Wash hand basin taps	5	litres/minute
Showers	6	litres/minute
Kitchen sink taps	6	litres/min
Baths	170	litres capacity
Kitchen sink taps	5	litres/minute
Dishwasher	1.25	litres/place setting
Washing machines	8.17	litres/kg

4.6 Flood Risk and Drainage

The risk of flooding is set to increase in the UK due to the increase in rainfall forecast by the UN Intergovernmental Panel on Climate Change (IPCC). The National Planning Policy Framework (NPPF) encourages developments to be built in areas of low risk of flooding and to be resilient and resistant to future

storm events. This issue is particularly important in addressing the impacts of climate change and the overall sustainability strategy of the site.

This section responds to *Policy S25: Managing Flood Risk* in the new Local Plan 2017-2036 which will supersede the Joint Core Strategy *Policy CP25: Flood Risk*.

The Proposed Development is located in Flood Zone 1, which is designated as having a low risk of flooding from fluvial/tidal sources. Figure 2 shows the location of the site on the Environment Agency's Flood Map for Planning.

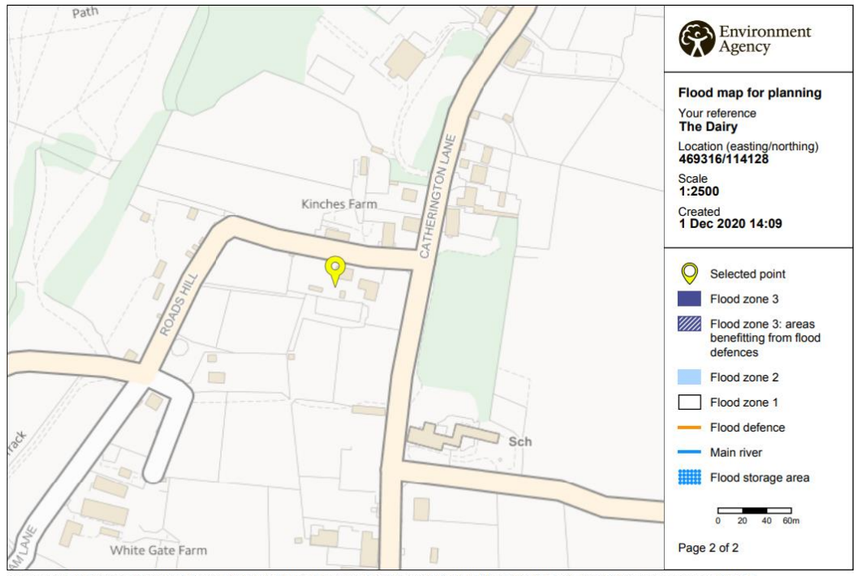

Figure 3 Potential flood extent map to show the location of the Proposed Development within Flood Zone 1 (Environment Agency).

As outlined in the Flood Risk Assessment completed by HRP Architects Ltd, a development located within Flood Zone 1 is defined as having a less than 1 in 1000 annual probability of river or sea flooding in any year.

Table 3 Table to show predicted flood risk from various identified sources, as per the Flood Risk Assessment.

Potential Source of Flooding	FRA Identified Risk Level
Fluvial/tidal	Low
Sewers	Low
Groundwater	Low
Artificial Sources	Low
Surface Water	Low

Sustainable Drainage Strategy

The current site consists primarily of impermeable hard standing with a high run-off rate. By integrating Sustainable Drainage Systems (SuDS) to mimic natural drainage, any future risk of flood or groundwater contamination is minimised. Additionally, the NPPF requires that site water should be managed effectively and sustainably, to ensure that the post-development run-off does not exceed the pre-development condition.

The proposed development will manage the surface water run-off using on site measures. Due to the site not being in an area of high risk of flooding, the primary strategy is to use permeable paving to the areas of hard landscaping. This will be achieved by using either block paving or grasscrete. The SuDs Manual defines block paving as a way to allow rainwater to infiltrate the joints between the blocks into the underlying pavement structure. This will provide a solution to excess stormwater by providing soakaways to prevent flooding of the site and adjacent land.

4.7 Air Quality & Pollution

Air Quality

When considering air quality performance, it is important to consider mitigation of internal air quality impacts for the building occupants as well as the external air quality concerns raised in the policy documentation.

The heating systems to the dwellings will not emit NOx emissions and will be all electric to improve the surrounding air quality and minimise the effect on human health.

Light Pollution

Potential impacts of light pollution will be managed at the proposed development. Light pollution is not limited to localised light spill and has knock-on impacts on other sustainability features such as the surrounding ecology, and therefore needs to be considered alongside these strategies. The proposed development will minimise light pollution through a timeclock or PIR sensors where appropriate.

4.8 Health & Wellbeing

We spend on average 65% of our time in our homes which puts emphasis on the need for a comfortable and secure internal environment. Factors ranging from the quality of air, to space and the amount of light can have an impact on our health and wellbeing. The proposed development aims to provide homes that positively impact the mental, physical and social wellbeing.

Due to an increased number of people working from home and a change in occupant behaviour, the provision for office spaces has become an essential for new homes. The occupant's wellbeing is improved by providing a separate office space to set boundaries between work and personal life. This has shown to increase efficiency at work and reduce stress. Furthermore, office spaces will be placed, where possible on the south elevation to maximise natural daylight. Blinds with a transmittance value of no more than 10% will be provided to prevent glare whilst letting natural light into the office spaces.

As outlined under section 4.10, the occupants have access to outdoor spaces within walking distance. Evidence has shown that wildlife-rich environments benefit the physical and mental health by reducing blood pressure and stress.

4.9 Adaptation to Climate Change

Climate change is the defining issue of our time due to shifting weather patterns that threaten our current way of living. The effects of climate change vary from rising temperatures, increased drought and rainfall creating extremes in weather throughout the globe, and sea level rise. This is by no means an exhaustive list however it provides an insight into the immediate challenges that our future buildings will face.

Throughout this Sustainability Appraisal, the effects of climate change are addressed through prevention and mitigation. This report as a whole responds to the new Local Plan *Policy S24: Planning for climate change* therefore this section will not require a full list of measures included into the design as these have been captured elsewhere.

4.10 Transport & Access

The site will allow adequate access for vehicles to enter and turn. Additional space has been allowed for the refuse collection and turning point to prevent unnecessary reversing. User parking will be provided to each dwelling with an allowance for visitors to prevent on the road parking.

Dwellings with a private garage will be able to use these as cycle storage due to adequate outside parking spaces. Where no garage is provided, a cycle storage shed will be available to the occupants in their private gardens. These will be weather resistant and secure.

There will be a shared surface for footpath and vehicles due to the small number of homes and vehicle movements.

The site is approximately 1.5 miles from the closest supermarket with access to cash and a petrol station (Morrisons). An outdoor space for occupants is located 0.2 miles north of the site as Catherington Downs or 0.4 miles south for Jubilee park. There is also a Spar within 1.0 mile with access to cash. There are schools ranging from nursery, infant, junior and secondary to accommodate for current and future needs of the occupants. These are all within 1.5 miles of the site.

4.11 Biodiversity

A Preliminary Ecological Appraisal has been carried out and found that the site is of negligible ecological value. The survey, conducted on the 24th November, consisted of a walkover to identify habitats and protected species on the site and adjacent land. There was no evidence that any of the buildings are currently occupied by bats. The potential for other species present, such as the hazel dormouse, reptiles, badgers and great crested newt were also surveyed and no evidence of these were found on site. The trees, hedgerow and scrub have the potential for nesting birds during the spring and summer months.

The Ecologists recommendations are as follows:

- Retain all existing hedgerows
- Reinforce weak sections of the existing hedgerows with the appropriate native shrubs
- Plant new sections of native hedgerows along the site boundary
- Where any material works (including felling) be proposed to the large Ash at Target note 2, Figure 4, the presence/absence of bat roosts within it is first more reasonably established by further survey. Such survey could include a climbing inspection (at any time of year) and/or 2-3 watches for bats coming/going from the tree over dusk and/or dawn (normally only possible sometime between May and August, possibly September, inclusive)
- External lighting should avoid significant spill on the adjacent boundary hedgerows and trees
- Any significant removal of taller/denser vegetation (including trees, hedgerow and scrub) be carried out between October and February inclusive (so as to avoid the nominal bird nesting season) or otherwise only following a thorough check to confirm that no active birds nests are present at the time. Should birds commence nesting within or upon buildings at any time then all works liable to disturb such nests should be delayed until the nests are no longer occupied.

4.12 Construction

Sustainability and environmental considerations must also be managed throughout the construction stage of the development. A Site Waste Management Plan (SWMP) will be required and will set out waste management targets to include the following:

- Non-hazardous waste materials including demolition and construction waste
- Data records on waste arising and waste management routes
- Appropriate management of any hazardous waste on site.

During construction, the principal contractor will have to uphold the construction management good practice which includes monitoring of site water use and energy use.

Pollution will be managed on site during demolition works by damping down the existing buildings to minimise the dust on site. The existing hardstanding will be retained to prevent vehicles entering and leaving the site from dispersing dirt onto the road. During construction, vehicles will be washed down to prevent excess dirt from leaving the site. Where it is not possible to eliminate all the dirt leaving the site, road sweepers will be in place if the above measures fail. Noise pollution will be minimised by using mains power connection instead of generators and radios will only be used internally by the workforce. Any lighting on site will use a timer to prevent operation when the site is unoccupied. The exception to this will be security light which will operate using PIR sensors.

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