Brighton & Hove City Council

Portslade Village Centre

Sustainability Statement

Consult Sustainability

Project Name	Portslade Village Centre
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1 Executive Summary

1.1 Purpose

Consult Sustainability has been commissioned by Brighton & Hove City Council (hereby referred to as BHCC) to provide a sustainability statement for the purpose of demonstrating compliance with planning policy and illustrating additional sustainability measures that will be incorporated into the project. The redevelopment is expected to provide a positive impact on health, wellbeing and surrounding ecosystems, minimise carbon dioxide emissions, and restrict and managing potential impacts on air, water and noise.

1.2 Introduction

The redevelopment of Portslade Village Centre will deliver 28 new apartments, to increase needed available housing at an affordable cost as well as the provision of a new community centre. The project is currently at RIBA Design Stage 3.

This report describes several key aspects of sustainability that are being integrated into the redevelopment of Portslade Village Centre, that illustrate compliance with the BHCC City Plan requirements.

The first part of the report provides an overview of the site and planning policies applicable to this redevelopment in accordance with the BHCC City Plan and other policies relevant to the area. The second part then outlines the sustainability strategy that has been employed to address the relevant planning policies.

The key sustainability aims of the project are to achieve the target KPIs in line with the RIBA Climate Challenge 2025 targets. For sustainability, this includes:

- An operational energy use intensity of <60 kWh/m^2/year.
- Embodied Carbon target of <800 $kgCO2_e/m^2$
- Potable Water Use of <95 l/p/day

The development will also strive to achieve the following best practice health metrics within the RIBA Climate Challenge:

- Overheating - 25-28 °C maximum for 1% of occupied hours (CIBSE TM59)
- Daylighting - > 2% av. daylight factor, 0.4 uniformity (CIBSE LG10)
- CO2 levels - < 900 ppm (CIBSE TM40)
- Total VOCs - < 0.3 mg/m^3 (Approved Document F)
- Formaldehyde - 0.1 mg/m^3 (BREEAM

1.3 Approach to the strategy

This Sustainability Strategy provides an overview of sustainability measures that are being incorporated into the redevelopment of Portslade Village Centre. The key sustainable design and construction measures incorporated in the proposals are summarised below:

- The re-development of a previously inefficient and underutilised building into a development with an effective layout and scale in response to surrounding context;
- Efficient design of the proposed massing, openings and internal layouts for ample daylight and sunlight levels;
- Maximisation of energy and carbon dioxide emission reduction following the energy hierarchy through enhanced building fabric, low air permeability, use of mechanical ventilation with heat recovery and energy efficient lighting. Limiting energy consumption to less than 60 kWh/m^2/year.
- Integration of a ground source heat pump strategy to supply heating and hot water as well as a significant photovoltaic array on both buildings for additional carbon reduction on site.
- Inclusion of a timber frame and responsibly sourced sustainable building materials to minimise embodied carbon.
- Maximising opportunities for ecology and biodiversity enhancements on site;
- Specification of water efficient fittings to limit water consumption to less than 95 litres per person per day for domestic uses;
- The potential risk of overheating will be mitigated by incorporating passive and active design measures in line with CIBSE TM59 and Approved Document O;
- Site specific SuDS strategies including permeable paving and a cellular crate soakaway located beneath the southwest landscaped area of the site.
- Air pollution risk from construction and demolition activities will be minimised by adopting appropriate mitigation measures to reduce emissions and their potential impact, therefore should be no significant residual effects;
- Air quality of internal spaces enhanced through MVHR with HEPA filters.
- The development will take measures to reduce waste and pollution on site during construction and operation and provide adequate waste and recycling storage;
- Adequate mitigation measures will be implemented to ensure internal noise levels are in line with specific targets.

In summary, the redevelopment of Portslade Village Centre meets the targets set out by BHCC, as well as the RIBA 2025 targets. The sustainability measures incorporated reflect the client and design team's aspirations in integrating sustainability measures and demonstrates that the project is designed to exceed the planning policy sustainability requirements.

2 Introduction

2.1 Location

The Development is located within the jurisdiction of BHCC and will replace the existing Portslade Village Centre building which is located with access from Lindfield to the West. The site location is shown in Figure 1 below.

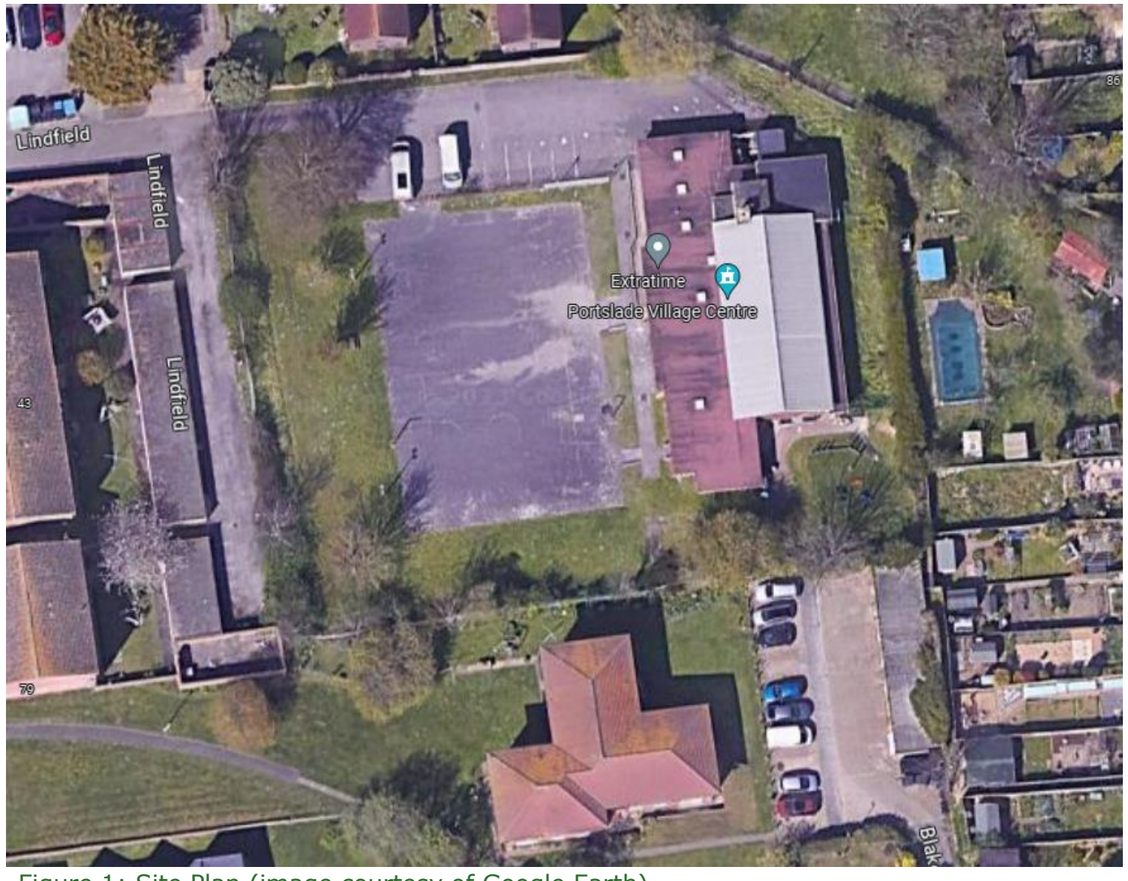

Figure 1: Site Plan (image courtesy of Google Earth)

2.2 Proposed Development

The redevelopment of Portslade Village Centre will deliver 28 new apartments as well as a new community centre. The Design of Portslade Village Centre can be seen in figures 2 and 3 below.

Figure 2: East Elevation of the West Pavilion for the proposed Portslade Village Centre Development

Figure 3: North Elevation of the East Pavilion for the proposed Portslade Village Centre Development

3 Planning Policy

The proposal will seek to respond to the sustainability policies of the BHCC City Plan (Part One & Two) as well as the 2030 Carbon Neutral Programme. In addition, the project will meet the RIBA 2025 targets. The applicable sustainability policies in the context of the proposed development are presented below.

3.1 BHCC City Plan Part One

3.1.1 CP8 Sustainable Buildings

1) All development will be required to achieve the minimum standards as set out below unless superseded by national policy or legislation;

Table 1: Energy and Water Performance Requirements of CP8

Residential (New Build)	Fitting Specification
Energy Performance	19% carbon reduction improvement against part L 2013
Water Performance	Water efficiency 'optional' standard

2) All development proposals including conversions, extensions and changes of use will be expected to demonstrate how the development:
    a. addresses climate change mitigation and adaptation;
    b. contributes to a reduction in the city's current level of greenhouse gas emissions by delivering significant reductions in fuel use and greenhouse gas emissions via: passive design and orientation; fabric performance; energy efficiency measures; and low carbon solutions;
    c. facilitates on-site low or zero carbon technologies, in particular renewable energy technologies;
    d. connects, makes contributions to low and zero carbon energy schemes and/or incorporates provision to enable future connection to existing or potential decentralised energy schemes;
    e. aspires towards water neutrality by meeting high water efficiency standards and incorporating facilities to recycle, harvest and conserve water resources;
    f. improves the sustainability of existing buildings, makes the most effective use of land and re-uses existing buildings;
    g. protects occupant health and the wider environment by making the best use of site orientation, building form, layout, landscaping and materials to maximise natural light and heat, whilst avoiding internal overheating by providing passive cooling and ventilation
    h. reduces 'heat island effect' and surface water run-off;
    i. uses materials that are sustainable and have low embodied carbon;
    j. enhances biodiversity;
    k. minimises waste and facilitates recycling, composting and re-use;
    l. reduces air, land and water pollution and safeguards water supplies if development is within groundwater Source Protection Zones;
    m. maximises operational efficiency through ongoing evaluation, monitoring and improvement of building performance especially in relation to energy and water use;
    n. introduces means to encourage users, tenants and householders to reduce their ecological footprint;
    o. is adaptable to respond to changing needs; and
    p. encourages food growing.

3.1.2 CP9 Sustainable Transport

1) Encourage and enable walking (including wheelchair access) and cycling;
2) Promote cycling and walking as 'active travel' by providing advice and information to residents, worker and visitors to the city.

3.1.3 CP10 Biodiversity

1) Contribute to the delivery of biodiversity improvements within the South Downs Way Ahead Nature Improvement Area (NIA), with the objectives of:
    a. conserving, restoring, recreating and managing priority habitats and protecting and recovering priority species populations to contribute to Local Biodiversity Action Plan targets;
    b. enabling people to have improved access to and understanding of local habitats and species; and
    c. ensuring development delivers measurable biodiversity improvements.
2) Ensure that all development proposals:
    a. Provide adequate up-to-date information about the biodiversity which may be affected;
    b. Conserve existing biodiversity, protecting it from the negative indirect effects of development, including noise and light pollution;

c. Provide net gains for biodiversity wherever possible, taking account of the wider ecological context of the development and of local Biosphere objectives; and

d. Contribute positively to ecosystem services, by minimising any negative impacts and seeking to improve the delivery of ecosystem services by a development.

3) Establish criteria-based policies against which development proposals affecting designated sites of international, national and local importance; protected species; and biodiversity in the wider environment will be judged. Such policies will distinguish between the relative importance of each of these nature conservation features to provide clarity about when development may be permitted and about any mitigation, conservation and enhancement which may be required.

4) Monitor progress with the delivery of biodiversity objectives through suitably devised indicators.

3.1.4 CP11 Flood Risk

a) Development proposals in locations that have been subject to previous localised flooding events (including, surface water/muddy floods, groundwater, or sewer floods) will need to demonstrate that the issue has been taken into account and appropriate mitigation measures incorporated. Where a risk is identified then planning applications must be accompanied by a site specific flood risk assessment identifying how flood risk will be mitigated and minimised.

b) Where site-specific flood risk assessments are required they must be consistent with the latest guidance in the SFRA, national planning policy framework and technical guidance, and any supplementary information from the Environment Agency. In particular development should include appropriate sustainable drainage systems in order to avoid any increase in flood risk and to ideally reduce flood risk.

c) Where flood risk management or mitigation measures are required, the opportunity to simultaneously achieve wider sustainability and biodiversity objectives for the city (as identified in CP8 and CP10) should be investigated and will be encouraged.

3.1.5 CP18 Healthy City

1) Carry out health impact assessments (HIA or incorporated into a sustainability appraisal) on all planning policy documents.

2) Require HIA on all strategic developments in the city.

3) Require larger developments to demonstrate how they minimise negative impacts and maximise positive impacts on health within the development or in adjoining areas (where the benefits of new development can be maximised).

4) Encourage development that works towards Lifetime Neighbourhood principles; promotes health, safety and active living for all age groups, including healthy living options for older people (see also CP12 and CP13), active space for children and encourages physically active modes of transport.

5) Recognise, safeguard and encourage the role of allotments; garden plots within developments; small scale agriculture and farmers markets in providing access to healthy, affordable locally produced food options.

6) Joint working with health providers to help deliver and protect a sub regional network of critical care hospitals and a citywide integrated network of health facilities that is within reasonable walking distance of public transport.

7) Through the City Plan Part 2 appropriate sites for health use with good access will be identified and safeguarded taking into account future growth and demand for health services in the city.

3.2 BHCC City Plan Part Two

3.2.1 DM20 Protection of Amenity

1) It does not cause unacceptable loss of amenity to the proposed, existing, adjacent or nearby users, residents, occupiers or where it is not liable to be detrimental to human health.

3.2.2 DM22 Landscape Design and Trees

1) Development proposals will be required to retain, improve and wherever possible provide, appropriate landscape elements/ landscaping, trees and planting as part of the development taking into account the need for:

a. the inclusion of landscape design from the outset so that it informs the overall design of development and is fit for purpose having regard to: suitable microclimates, amenity, sense of place, natural capital and ecosystem services – including the provision of nature based solutions, SuDs, green roofs/walls, plants for pollinators, climate control and climate change adaptation measures;

b. clear, legible landscape plans and material details;

c. accurate identification of all existing trees, shrubs, hedgerows and landscape features;

d. the retention of existing trees and hedgerows with details provided of appropriate protection during construction.

e. Where removal of a tree is unavoidable, for example by reason of it being severely diseased or dangerous:

i. the provision of plans is required that clearly identify the location and species of all those to be lost and all those to be retained; and

ii. replacement trees along with appropriate associated planting space and works of a type, size and location to the satisfaction of the council for any tree felled;

f. the planting and maintenance of street trees of appropriate species and intervals should be provided where appropriate by major development proposals with significant street frontage;

g. effective use of existing landscape features or levelling to facilitate greater flexible and multi-functional use including, where practicable, informal/formal sports, children's play and food growing;

h. high quality planting and landscape materials appropriate to the site and its proposed use including the planting of native and wildlife/pollinator-friendly non-native species, new trees, hedges and the use of permeable hard landscape materials wherever practicable;

i. viable long-term maintenance and durable materials, including the submission of a funded maintenance plan to be approved by the council, so as to secure a high quality attractive environment;

j. meeting the generated open space requirements (see City Plan Part One Policies CP16 Open Space and CP17 Sports Provision); and

k. capitalising on opportunities to facilitate social integration, improve public health and safety, accessibility, connectivity, leading to net gains to biodiversity and enhancements to Green Infrastructure and/or create green links for wildlife and public access.

3.2.3 DM33 Safe, Sustainable and Active Travel

1) Pedestrians (including wheelchair users)

In order to encourage walking, new development should:

a. provide for safe, comfortable and convenient access to/from proposed development for all pedestrians, irrespective of their level of personal mobility and cognition; and

b. where appropriate contribute towards improvements to the wider pedestrian environment, providing for a safe and attractive public realm, including signage, seating, shade/shelter and planting, including consideration of assigning some parts of streets and spaces for shared use by pedestrians and small numbers of vehicles; and

c. maintain, improve and/or provide pedestrian/wheelchair accessible routes that are easy, convenient and safe to use, giving consideration to pedestrian desire lines within and outside site boundaries

2) Cyclists

In order to ensure a safe and accessible environment for cyclists, new development should:

a. provide for safe, easy and convenient access for cyclists to/from proposed development; and

b. where appropriate extend, improve or contribute towards the city's existing network of high quality, convenient and safe cycle routes; and

c. protect existing and proposed cycle routes unless satisfactory mitigation is provided or provision is made for an alternative alignment; and;

d. provide for sufficient levels of cycle parking facilities in line with the Parking Standards for New Development (Appendix 2) which must, wherever possible, be universally accessible, under cover, secure, convenient to use, well-lit and as close to the main entrance(s) of the premises as is possible. Short stay visitor cycle parking could be uncovered but must be located close to the building entrance(s) and benefit from high levels of natural surveillance; and

e. where appropriate make provision for high quality facilities that will encourage and enable cycling such as communal cycle maintenance facilities, workplace showers, lockers and changing facilities;

3) Public Transport Users

New development should:

a. be located and designed to provide good access to public transport services and facilities; and

b. where appropriate provide or contribute towards improvements to the public transport network/infrastructure including passenger interchanges and facilities; and

c. directly fund or contribute towards improvements and/or extensions to existing bus services and/or the provision of new bus routes; and

d. protect and, where appropriate, enhance existing and proposed public transport routes.

4) Safe and Inclusive Travel Planning permission will be granted for developments that meet all of the following criteria:

a. Do not create road safety problems or dangers for any road user, especially those who are most vulnerable;

b. Provide inclusive access for disabled people, older people, and other vulnerable road users wherever it can be reasonably achieved having been afforded significant priority;

c. Do not prejudice the implementation of proposed road safety improvements set out in the Local Transport Plan (and subsequent revisions/successor documents or programmes); and

d. Create safe and secure layouts which minimise the risk of collision or potential conflict between road users.

3.2.4 DM37 Green Infrastructure and Nature Conservation

1) Development proposals will be required to demonstrate that they safeguard and/or contribute positively to the existing multifunctional network of Green Infrastructure that covers all forms of green and open spaces; the interrelationship between these spaces and; ensure that the natural capital of the area is retained, enhanced and complements UNESCO Biosphere objectives.

2) Where practicable, green infrastructure should be integral to the design and layout of the scheme ensuring it is planned and managed to realise current and potential value to communities and to support the widest delivery of linked environmental, social and economic benefits.

3) Development should avoid adverse impacts and seek to conserve and enhance biodiversity and geodiversity features ensuring:

   a. accordance with the mitigation hierarchy requirements of the NPPF65

   b. an additional measurable net gain in biodiversity is achieved;

   c. that recognised protected and notable species and habitats are protected and supported;

   d. ancient woodland and irreplaceable habitats are protected;

   e. that appropriate and long-term management of new or existing habitats is secured and opportunities to connect habitats are secured to ensure a network of nature recovery;

   f. where relevant, the control and eradication of any invasive non-native species present on site.

4) Developers will be expected to work with existing partnerships to support and enhance the following green infrastructure and nature conservation features:

   a. the Nature Improvement Area

   b. protected and notable species and habitats

   c. ancient woodland

   d. aged/veteran trees

   e. protected trees

   f. the City's National Elm Collection

   g. marine and coastal biodiversity

   h. geodiversity

5) Proposals liable to affect green infrastructure and nature conservation features either directly or indirectly must be supported by an appropriate and detailed site investigation/ assessment and accord with provisions set out in the mitigation hierarchy. Measures to avoid or prevent harmful effects will be required.

6) Where proposals are liable to impact to designated sites, they must provide:

   a. evidence to demonstrate that the objectives of the designation and integrity of the area will not be undermined;

   b. funded management plans that secure the long term protection and enhancement of remaining features; and

   c. up-to-date information about the biodiversity/geodiversity which may be affected.

7) Proposals must also satisfy the following criteria:

a. Internationally protected sites

   All development must comply with the Conservation of Habitats and Species Regulations (as amended) Development likely to have significant effects on an international site (either individually or in combination with other plans or projects) and which would affect the integrity of the site will not be permitted unless the council is satisfied that:

   i. There is no alternative solution (which can be adequately demonstrated by the developer); and

   ii. There are imperative reasons of overriding public health or public safety for the development; and

   iii. Adequate compensatory provision is secured.

b. Nationally protected sites

   Development proposals should avoid impacts on nationally protected sites. Development proposals likely to have an adverse effect on the site's notified special interest features will not be permitted, the only exception is if:

   i. the benefits of the development, at this site, clearly outweigh both the likely impact to notified features on the site and any broader impacts on the network of nationally protected sites; and

ii. the impacts can be mitigated in accordance with the mitigation hierarchy;

c. Locally protected sites

Development proposals that will result in an adverse effect on any local site will not be permitted, unless:

i. the site is allocated for development in the City Plan or there are exceptional circumstances that justify the development of the site and can be demonstrated to outweigh the adverse effects on the local designation; and

ii. the impacts can be mitigated through on or off-site habitat creation; and

iii. on site or off site as part of a local strategic ecological network additional measurable net gains in biodiversity/geodiversity can be achieved.

3.2.5 DM40 Protection of the Environment and Health – Pollution and Nuisance

1) Planning permission will be granted for development proposals that can demonstrate they will not give rise nor be subject to material nuisance and/or pollution that would cause unacceptable harm to health, safety, quality of life, amenity, biodiversity and/or the environment (including air, land, water and built form). Proposals should seek to alleviate existing problems through their design.

2) Proposals liable to cause or be affected by pollution and/or nuisance will be required to meet all the following criteria:

a. be supported by appropriate detailed evidence that demonstrates:

i. the site is suitable for the proposed use and will not compromise the current or future operation of existing uses;

ii. pollution and/or nuisance will be minimised;

iii. appropriate measures can and will be incorporated to attenuate/mitigate existing and/or potential problems in accordance with national policy and having regard to national and local guidance; and

iv. appropriate regard has been given to the cumulative impact of all relevant committed developments as well as that of the proposal and/or effect of an existing pollution/nuisance source.

b. support the implementation of local Air Quality Action Plans and help support the local authority meet the Government's air quality and other sustainability targets;

c. provide, when appropriate, an Air Quality Impact Assessment to consider both the exposure of future and existing occupants to air pollution, and, the effect of the development on air quality. Air quality improvements and/or mitigation must be included wherever possible;

d. have a positive impact, where practicable, on air quality when located within or close to an Air Quality Management Area and not worsen the problem;

e. assess the impacts of emissions from transport, flues, fixed plant, and heat and power systems. New biomass combustion and CHP plants associated with major developments will not be acceptable in or near an Air Quality Management Area and sensitive receptors such as the Royal Sussex County Hospital due to the need to comply with nitrogen dioxide limits; and

f. ensure lighting is well designed; low impact; efficient; the minimum necessary with an appropriate balance between intensity, fittings, height and structures; and, not cause unacceptable detriment to health and amenity, public and highway safety, biodiversity, in particular priority habitat and species, the night sky and the South Downs National Park International Dark Sky Reserve.

3) When a proposal, including the remediation measures, invokes the need for an Environmental Impact Assessment the findings of the assessment must be appropriately taken into account

3.2.6 DM42 Protecting the Water Environment

1) Planning applicants should consider the potential impacts on water quality and quantity resulting from the design, construction and operation of proposed development. Where necessary, development proposals should include measures to reduce any risk to the water environment and its ecology; and aim to protect and improve water quality (of surface water, groundwater and the sea).

2) Development proposals will not be permitted if they have an unacceptable impact on the quality and potential yield of local water resources used for public water supplies.

3) Planning permission may be refused if relevant site investigations and risk assessments have not been undertaken and if necessary mitigation measures are not provided.

4) Applicants will be required to demonstrate that capacity exists on and off-site in the sewerage network to serve the development or that occupation of the development will be phased to align with the delivery of sewerage infrastructure, in liaison with the service provider, to avoid sewer flooding.

3.2.7 DM43 Sustainable Drainage

1) The design and layout of all new buildings, and the development of car parking and hard standing, will be required to incorporate appropriate Sustainable Drainage Systems (SuDS) capable of ensuring that there is a reduction in the level of surface water leaving the site unless it can be demonstrated not to be reasonably practicable.

2) Subterranean development, for example, storage tanks, basements or subterranean car parks, will not be permitted in areas where there has been a history of groundwater emergence (or other sources of flooding).
3) SuDS should be sensitively located and designed from the outset, having regard to recognised best practice100, the Urban Design Framework SPD and the Sustainable Drainage SPD to ensure that the quality of local water is not adversely affected; and should provide where possible improved biodiversity, an enhanced landscape/townscape and good quality spaces that improve public amenities in the area.
4) Details of the proposed SuDS should be submitted as part of any planning application including provision for arrangements for the whole life management and maintenance of the provided SuDS.

3.2.8 DM44 Energy Efficiency and Renewables

In addition to the requirements set out in Policy CP8 Sustainable Buildings, the following standards of energy efficiency and energy performance will be required unless it can be demonstrated that doing so is not technically feasible and/or would make the scheme unviable:

1) Conversions and change of use of existing buildings to new residential dwellings to achieve at least 19% improvement on the carbon emission targets set by Part L (2013) until the Future Homes Standard or any interim uplift in Part L which exceeds 19% improvement come into effect;
2) A minimum energy Performance Certificate EPC rating 'B' for new build residential and non-residential development.
3) Opportunities for new development to achieve greater reductions in CO2 emissions through the use of passive design, fabric standards, energy efficiency measures and low and zero carbon technologies will be encouraged in the following areas:
    a. Development Areas 1- 7 (City Plan Part 1);
    b. Housing Allocations in the urban fringe (Policy H2);
    c. Within industrial areas identified and safeguarded in City Plan Part 1 Policy CP3.3.

The following energy hierarchy should inform the design, construction and operation of new buildings:

- Be lean: use less energy
- Be clean: supply energy efficiently,
- Be green: use renewable energy

The priority is to minimise energy demand, and then address how energy will be supplied and renewable technologies incorporated. Fabric and energy efficiency measures are the most effective way to reduce energy demands, CO2 emissions and costs for occupant of new buildings.

3.2.9 DM45 Community Energy

Developers of medium scale and major development schemes121 are encouraged to actively seek community energy partners to deliver low and zero carbon energy122 solutions which are 'led by'; or 'meet the needs' of local communities.

3.2.10 DM46 Heating and cooling network infrastructure

The Council will encourage development proposals to consider the inclusion of integrated heat networks and/or communal heating systems in accordance with Policy CP8 in City Plan Part One.

Where proposals come forward with combined heat and power (CHP) they must meet CHP Quality Assurance standards (CHPQA) and demonstrate that heating and cooling systems have been selected in accordance with the heating and cooling hierarchy, Policy DM40 and have had regard to the CIBSE Heat Network Code of Practice;

All proposals that include heat networks must demonstrate they offer heat service customer protection by adopting a customer protection scheme (such as Heat Trust or equivalent); and

All development incorporating heat network infrastructure which is proposed within or adjacent to a heat priority area will be expected to meet the minimum standards specified in the CIBSE Heat Network Code of Practice and demonstrate its suitability to a future connection to a wider heat network, including;

a. control systems and temperatures of operation;
b. routing of pipework and location of the energy centre;
c. safeguarded access for external pipework into the energy centre; and
d. space within the energy centre for a future heat substation.

4 Proposed Sustainability Measures

This part of the report presents the key elements of the proposal that underpin environmental sustainability, demonstrates how the development complies with sustainable development policies and incorporates guidance on sustainable design and construction.

4.1 Land and Site Layout

4.1.1 Land use

The land for this proposal is efficiently used as the scheme will be constructed on previously developed land. The site currently comprises of the existing Portslade Village Centre Building which will be demolished as part of the works. The proposed development will provide 28 new homes in addition to a new purpose-built Community Centre.

4.1.2 Reuse of Existing Buildings

There is no scope for reusing the existing buildings. An informal appraisal of the existing landscape, building and structures was undertaken during site visits, the site analysis, and during design team meetings. A pre-demolition audit will be undertaken at Stage 4 to identify the existing materials and suitable recycling/waste streams.

4.1.3 Landform and Site Layout

The site has a relatively steep incline. The proposed development has utilised this to ensure the building footprint and impact is minimised whilst also maximising the number of units on site, locating parts of the building into the areas built into the slope. The height of the surrounding context consists of low-rise buildings in all directions. The scheme comprises 1 x3-storey building and 1 part 3/part 4-storey building.

4.1.4 Daylight and Sunlight Impacts

The development has been designed to maximise daylight in all habitable spaces as a way of improving the health and wellbeing of its occupants.

In effect, all habitable spaces have ample glazing areas and the internal daylight assessment confirmed that 83 out of 84 rooms (99%) of the proposed rooms meet or surpass the BRE illuminance recommendations. Whilst for sunlight access, 26 units out of the 28 (93%) have a habitable room (25 of these living rooms) which receives a total of at least 1.5 hours of sunlight on 21 March.

The impact on neighbouring properties has been assessed as well and the scheme is expected to achieve complete compliance, with all neighbouring windows (that have a requirement for daylight or sunlight) passing the relevant BRE diffuse daylight and direct sunlight tests. This demonstrates that the proposed development will have a low impact on the light receivable by its neighbouring properties. For further details, please refer to the Neighbouring and Within Daylight & Sunlight Assessments.

4.1.5 Micro-Climate

A microclimate is the distinctive climate of a small-scale area and the variables within it, such as temperature, rainfall, wind, or humidity may be subtly different to the conditions prevailing over the area as a whole. The main characteristics of microclimates within Brighton are temperatures and wind. The proposed scheme is not of a scale that could potentially have any significant impact on wind conditions around the site or any adverse effects on pedestrian and residents' comfort.

4.1.6 Urban Greening

As indicated in the Ecological appraisal, there are no invasive species on site, and the majority of land proposed for development is of low ecological value. Further detail on urban greening is provided within Urban Edge's reports.

4.1.7 Impacts on Neighbours from Demolition and Construction

Construction impacts such as dust generation and increased traffic movements will be minimised through adoption of best practice construction measures, formalised through the production of a Construction and Environmental Management Plan to be delivered by the main contractor where appropriate.

4.1.8 Land Contamination

A Stage 1 Environmental Risk Assessment Desk Study has been carried out to identify possible environmental concerns associated with redeveloping the site and to highlight the sensitivity of the site to any potential on site and off-site sources of contamination.

4.2 Health and Wellbeing

4.2.1 Inclusive Design

The development aims to prioritise the future needs of occupants by ensuring that all dwellings comply with Part M of the Building Regulations. There are three wheelchair accessible units along with 4 residential accessible parking bays. There are a further 3 accessible bays for the community centre and level access has been provided throughout, for both internal and external spaces.

In addition to the above design measures, the development will incorporate smart meters within each unit to enable occupiers to monitor and reduce their energy use.

4.2.2 Safety and Security

The design team will follow the principles of Secured by Design to provide safe and secure spaces to all residents and users.

4.2.3 Physical activity

The presence of amenity providers (shops, pharmacies, public park) within walking distance to the development will encourage residents to walk rather than use personal vehicles. The provision of cycle storage spaces will also encourage the use of alternative means of transportation for longer distances trips.

4.3 Energy and Carbon Dioxide Emissions

The Energy Strategy for the development has been designed in line with BHCC Planning Policy and Part L 2021, which states that every effort should be made to minimise carbon dioxide emissions in accordance with the following energy hierarchy:

1. Be lean: use less energy
2. Be clean: supply energy efficiently
3. Be green: use renewable energy

The project will also align with the RIBA 2025 targets, which will have an energy density of no more than 60 kWh/m^2/year.

Through the measures outlined in the Energy Strategy, it is anticipated that overall, approximately 64% reduction in CO_2 emissions could be achieved beyond Part L 2021 baseline, inclusive of all measures.

4.3.1 Be Lean

The buildings have been thoughtfully designed to reduce energy demand through an enhanced building fabric, minimising heat loss through air infiltration, reducing reliance on artificial lighting, utilising low energy lighting, and ensuring adequate levels of ventilation are maintained whilst reducing heat loss through the specification of MVHR.

4.3.2 Be Clean

As discussed in detail in the Energy Statement, the units will have heating and hot water supplied by a ground source heat pump system to ensure optimal efficient heat generation for the development. The development is not located in an area where a future District Heating Network is likely to be developed within the next years.

4.3.3 Be Green

A range of renewable technologies were considered for generating on-site renewable energy. Photovoltaic panels and ground source heat pumps (GSHP) were considered suitable technologies for this development due to adequate flat roof space, easy installation process, and substantial CO_2 savings. Further details about the photovoltaic and/or GSHP strategy, alternative renewable technology options and site-wide CO_2 emission reductions can be found in the accompanying Energy Statement.

4.4 Water

4.4.1 Water Efficiency

The development at Portslade Village Centre aims to reduce water consumption to less than 95 litres per person per day, in line with the recommended target set out in the RIBA 2025 targets, through the use of water efficient fittings. These are listed under the two possible scenarios below ('Bath and Dishwasher', and 'No Bath and Dishwasher')

Table 2: Recommended specification for sanitary fittings

Fitting	Scenario 1 Bath & Dishwasher	Scenario 2 No Bath & Dishwasher
WC	4/2 litres dual flush	4/2 litres dual flush
Kitchen sink tap	5 litres per min	5 litres per min
Wash basin tap	3 litres per min	3 litres per min
Shower	9 litres per min	10 litres per min
Bath	156 litres capacity	N/A
Washing machine	7 litres/kg	7 litres/kg
Dishwasher	0.7 litres/place setting	0.7 litres/place setting

4.5 Materials and Waste

4.5.1 Responsible Sourcing

100% of the timber used during construction will be sourced from accredited Forest Stewardship Council (FSC) or Programme for the Endorsement of forestry Certification (PEFC) source. The main contractor will be required to prioritise products holding responsible sourcing certification (EMS/ISO14001) for the key process as per minimum, to ensure economic, social, and environmentally responsible practices are implemented throughout construction products supply chain.

4.5.2 Healthy Materials

To minimise potential sources of indoor air pollution, low VOC paints, finishes and other products will be prioritised as far as practically possible. Best practice design detailing and careful construction techniques will also be employed to reduce the risk of thermal bridging and condensation issues, limiting the potential for mould growth.

4.5.3 Embodied Carbon

To further reduce carbon emissions over the lifecycle of the building, low embodied carbon materials will be used as far as practically possible, whilst also focusing on design practices to reduce waste production. The accompanying Whole Life Carbon Assessment outlines the embodied carbon emissions from the development.

4.5.4 Circular Economy

Circular economy is based on a number of key principles including: design out waste, keep products and materials in use, and regenerate natural systems. These principles will be applied during the design and construction of the proposed development by following the actions noted below:

- Design out the need for building components and materials;
- Use of reclaimed materials and remanufactured components over new;
- Product selection considering its entire lifecycle, such as products which can be remanufactured or reused; products with high recycled content; products designed for disassembly; and recyclable or compostable materials.

4.5.5 Construction Waste

Where appropriate, a site waste management plan will be prepared for the development. The SWMP will outline the methodologies for estimating waste quantities and streams generated during the demolition, excavation and construction stages of the site works, and set out recommended measures required to be adopted by the Main Contractor to minimise these as far as practically possible.

4.5.6 Operational Waste

The development has taken into account sustainable methods for waste and recycling management during its operation in order to meet requirements from the BHCC Policy and local authority policies and all applicable legal requirements.

4.6 Nature Conservation and Biodiversity

The majority of land proposed for development is of low ecological value. The proposed development incorporates the following to enhance the biodiversity onsite:

- Green spaces will be sown with a native wildflower and grass seed mix.
- Hedgerow creation and/or restoration will use a range of native fruit, seed, nut and nectar-bearing shrub species of local provenance.
- The value of the site for birds will be enhanced by installing a range of artificial nest boxes onto new buildings and retained trees.
- The value of the site for bats will be enhanced by installing a range of artificial roost boxes onto new buildings and retained trees.
- Habitat piles for amphibians, invertebrates and reptiles will be created within areas of retained rough grassland, scrub or hedgerow.

Further details can be found in the Landscape architectural and Ecology reports provided by Urban Edge.

4.7 Climate Change Adaptation

4.7.1 Overheating

The potential risk of overheating will be mitigated by incorporating both passive and active design measures.

The space heating and hot water to Portslade Village Centre development will be provided by a ground source heat pump system. All heat sources and pipe work will be sufficiently insulated to avoid excess heat loss into internal space.

Efficient lighting will be used to further minimise internal heat gains and reduce energy expenditure. Appropriately sized windows, balconies and access decks will reduce solar heat gains. Glazing with low transmittance will be used throughout the development to reduce solar gains and reduce the risk of overheating.

The dwellings have allowed for passive ventilation as a strategy for providing fresh air and dissipating heat.

The proposed dwellings are predicted to satisfy the overheating risk criteria for the probabilistic Design Summer Year (DSY1) weather data for London Gatwick through a combination of solar control strategies, efficient lighting and natural ventilation.

4.7.2 Surface Water and Flooding

Sustainable urban drainage systems (SUDS) will be incorporated on site and the buildings' fabric and structure will be designed to minimise risk of infiltration and damage via flooding where possible.

The site will include including permeable paving and a cellular crate soakaway located beneath the southwest landscaped area of the site to enable excess flood water to drain away.

For further details on the incorporation of SUDS and flood resilience measures for this scheme please refer to the HOP's Flood Risk Assessment and Drainage Strategy in support of the planning application.

4.8 Air, Noise and Light

4.8.1 Air Quality

Air pollution risks from construction and demolition activities on site will be minimal in line with the SPG 'The control of dust and emissions from construction and demolition' under the following categories:

- demolition;
- earthworks;
- construction;
- trackout; and,
- non-road mobile machinery (NRMM).

An air quality assessment has been carried out determine the impacts from dust and stationary plant emissions during the construction period and the potential impact from traffic flows on the local road network on both on-site and off-site receptors, during and after construction. Where necessary, mitigation measures are recommended to reduce any air quality impact.

The proposed development will utilise ground source heat pumps which have no on-site emissions and as such, the surrounding air quality will not be impacted.

4.8.2 Noise

The development will incorporate design and building fabric measures to mitigate potential noise levels from the proposed development and ensure the impact of any external sources on internal ambient noise levels are within acceptable limits.

4.8.3 Daylight & Sunlight

The development has been designed to maximise daylight in all habitable spaces as a way of improving the health and wellbeing of its occupants.

In effect, all habitable spaces have ample glazing areas and the internal daylight assessment confirmed that 83 out of 84 rooms (99%) of the proposed rooms meet or surpass the BRE illuminance recommendations. Whilst for sunlight access, 26 units out of the 28 (93%) have a habitable room (25 of these living rooms) which receives a total of at least 1.5 hours of sunlight on 21 March.

The impact on neighbouring properties has been assessed as well and the scheme is expected to achieve complete compliance, with all neighbouring windows (that have a requirement for daylight or sunlight) passing the relevant BRE diffuse daylight and direct sunlight tests. This demonstrates that the proposed development will have a low impact on the light receivable by its neighbouring properties. For further details, please refer to the Neighbouring and Within Daylight & Sunlight Assessments.

4.8.4 Light Pollution

The lighting design of the proposed development will follow the recommendations of the Institution of Lighting Engineers' Guidance Notes for the Reduction of Obtrusive Light (2005), to minimise light pollution.

4.8.5 Water Pollution

Water pollution to surrounding watercourses has been minimised by the introduction of SuDS strategies such as landscaped areas and below ground soakaways for gradual release to the ground, thereby reducing surface water runoff.

In addition, contractors will adopt best practice policies to mitigate water pollution from construction activities on site.

The development will discharge domestic sewage via a connection to the public foul sewer or combined sewer network where it is reasonable to do so.

4.9 Transport

4.9.1 Alternative means of transportation

In order to underpin the reduction of emissions from transport, the development has been designed to encourage cycling; cycle parking will be provided in a dedicated storage area. Furthermore, secure cycle parking spaces for staff, and a further visitors' spaces for both uses will be provided.

4.9.2 Proximity to Amenities

The site is in walking distance of a number of local amenities. Such as a local convenience store, a pharmacy, Easthill Park, Coffee shops and primary schools.

5 Conclusion

The sustainability strategy for Portslade Village Centre Road has been developed with the design team to comply with the relevant environmental policies from the BHCC Policy. Relevant energy policies have been addressed in the accompanying Energy Statement. The proposed development is expected to reduce on-site regulated carbon emissions by 66% with SAP10 emission factors.

- The re-development of a previously inefficient and underutilised building into a development with an effective layout and scale in response to surrounding context;
- Efficient design of the proposed massing, openings and internal layouts for ample daylight and sunlight levels;
- Maximisation of energy and carbon dioxide emission reduction following the energy hierarchy through enhanced building fabric, low air permeability, use of mechanical ventilation with heat recovery and energy efficient lighting. Limiting energy consumption to less than 60 kWh/m^2/year.
- Integration of a ground source heat pump strategy to supply heating and hot water as well as a significant photovoltaic array on both buildings for additional carbon reduction on site.
- Inclusion of a timber frame and responsibly sourced sustainable building materials to minimise embodied carbon.
- Maximising opportunities for ecology and biodiversity enhancements on site;
- Specification of water efficient fittings to limit water consumption to less than 95 litres per person per day for domestic uses;
- The potential risk of overheating will be mitigated by incorporating passive and active design measures in line with CIBSE TM59 and Approved Document O;
- Site specific SuDS strategies including permeable paving and a cellular crate soakaway located beneath the southwest landscaped area of the site.
- Air pollution risk from construction and demolition activities will be minimised by adopting appropriate mitigation measures to reduce emissions and their potential impact, therefore should be no significant residual effects;
- Air quality of internal spaces enhanced through MVHR with HEPA filters.
- The development will take measures to reduce waste and pollution on site during construction and operation and provide adequate waste and recycling storage;
- Adequate mitigation measures will be implemented to ensure internal noise levels are in line with specific targets.

In summary, the proposed development at Portslade Village Centre meets the targets set out by BHCC Policy.

The sustainability measures incorporated reflect the client and design team's aspirations in integrating sustainability measures and demonstrates that the project is designed to exceed the planning policy sustainability requirements.