Sustainability Statement

Broadwater Road, Welwyn Garden City

Prepared by: Stroma Built Environment Ltd

On behalf of: HG Group

18th Dec 2020

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BUILT ENVIRONMENT

Report Prepared By:

Date: 18th Dec Andrew Mitchell

Document History:

Issue	Date	Comment	Author
D.01	17.12.2020	Initial Draft	AM.
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Contents

1. Introduction

1.1 Planning details

The following Sustainability Statement has been prepared to support the planning application for the proposed development at Biopark, Broadwater Road, Welwyn Garden City AL7 3AX. It has been written to summarise all the sustainable design features for the proposed scheme in accordance with Welwyn Hatfield Borough Local Plan.

Stroma Built Environment Ltd (Stroma) have been engaged by HG Group to undertake a sustainability assessment for the proposed residential development at Broadwater Gardens.

This report has been prepared by Stroma with the support of the design team, in accordance with the following policies and guidance published by Welwyn Hatfield Borough Council.

- Welwyn Hatfield District Plan (2005)
- Welwyn Hatfield Borough Council Draft Local Plan (submission Aug 2016)
- Braodwater Road West Supplementary Planning Document (Dec 2008)

1.2 Proposed development scheme

The proposal is the demolition of the existing buildings on the Biopark site and the construction of residential units (class C3) and the construction of a community hub (use class E/F.2).

The overall scheme will incorporate 289 new dwellings, plus a 112.38 m^2 Community Hub within the 1.24 hectare site.

Proposed Site Plan prepared by Alan Camp Architects; 18/12/20

In accordance with the Welwyn Hatfield District Plan (2005) and the emerging policies within the Welwyn Hatfield draft local plan this Sustainability Statement sets out how the design team will address all relevant environmental and sustainability issues outlined in the Welwyn Hatfield Sustainability Checklist. Please refer to the completed checklist within appendix B.

The scheme, with two hundred and eighty-nine dwellings is deemed, via the checklist criteria as a major development. Therefore, in accordance with the Local Plan the application must include an energy strategy and all supporting planning documents must address sustainability issues.

2. Planning policy

National Planning Policy Framework (March 2012)

The National Planning Framework (NPPF) was implemented by the Communities and Local Government (CLG) in March 2012. The NPPF forms a key reform to the planning system and supersedes many of the former Planning Policy statement. A key element within the policy is to increase the use and supply of renewable and low carbon energy.

Local Planning Policy

Welwyn Hatfield District Plan 2005 is the current adopted Local Plan. A draft Local Plan is in development to replace the District plan. Throughout both documents there is an emphasis on directing developments in a sustainable manner.

Welwyn Hatfield Draft Local Plan (Sub Aug 2016)

Policy SP10 – Sustainable design and construction

The following proposal have been set out within this document –

- Energy & carbon saving – design and layout to reduce carbon emissions.
- Water sensitive design – design input and practises to limit water consumption and manage rainwater discharge
- Materials & Waste – reuse land and materials, prioritise low embodied carbon materials and encourage domestic waste recycling
- Landscaping – management of the local ecology to promote biodiversity
- Sound and light pollution – design to manages both sources of pollution

Policy SADM 13 – Sustainable requirements

- All major development proposals must demonstrate that they have sought to maximise opportunities for renewable and low carbon sources of energy supply.
- New construction dwellings are required to achieve an estimated internal water usage of no more than 110 litres/person/day.

Broadwater Road West Supplementary Planning document (Dec 2008)

Section 7 Implementation & monitoring – Development is required to achieve a site target of at least 10% energy use to come from renewable or low carbon sources.

3. Sustainability Review

This section of the report details how the design team have implemented solutions so that the proposed scheme meets the planning policy requirements. The report details the sustainability measured that ensure compliance with Welwyn Hatfield Local Plan, with focus on the following key parameters.

- Energy & Climate change
- Sustainable Transportation
- Water saving design
- Landscape and biodiversity
- Materials; and
- Waste & recycling

3.1 Energy & Climate Change

An Energy strategy report has been complete by Stroma BE Ltd. (report ref EST10-20-84957) The report details a fabric first approach to limit the total energy demand for the scheme, throughout its operational life.

Space and water heating is to be supplied to the apartments via a communal heating network. This offers an efficient heat source and future proofs the scheme for potential changes in plant as new technologies becomes available. Flue systems from the communal energy centre will exit the building at a high level. The Townhouses will be equipped with efficient individual gas boiler.

The efficient source of space and water heating is to be complemented with a 76 kWpeak photovoltaic array, housed across the scheme. Electricity generated from the array will be used to offset the electrical demand from the scheme's communal areas.

The net result is that the scheme is predicted to saving 12.86% from the residential element and 13.86% from the commercial unit, of the predicted carbon emissions with reference to the current building regulations. Exceeding the requirements defined within the current and future planning policies

Welwyn Hatfield Sustainability Checklist cross reference – The above section meets the criteria for sections B3, B 8 to 11 and B39

3.2 Sustainable Transportation

A detailed Transport Assessment has been completed by i-Transport (report ref NW/MD/AT/ITL16195-004).

The site's location within a dense urban location, delivering a wide range of everyday local amenities within walking and cycling distance. Services and facilities are accessible via existing high-quality path and cycle routes. Such options mitigate carbon dioxide emission by reducing the usage of personnel cars.

To aid residents to take advantage of the local amenities and encouraging sustainable travel, a resident's travel information pack will be issued. This will include the following –

- Information leaflet of local bus and rail services;
- Information regarding local facilities, including a map and walking and cycling times; and
- Details of local walking and cycling routes
- Information and details to residents on the car club and its benefits; and
- Details of local cycle training information.

A traffic impact assessment has been completed, with reference to the original activity on the site, The BioPark site was a research facility for the University of Hertfordshire. Hence the original traffic activity has been classified as Offices. The traffic activity has then been compared to the predicted journeys associated with a predominantly residential scheme.

The key conclusions from the assessment are –

- A reduction of over 30 vehicles during the morning peak hour;
- Circa 10 fewer vehicles during the evening peak hour; and
- No significant change in overall vehicle trips across a 12-hour day.

Scheme design is to incorporate 219 car parking spaces across the site. This equated to a parking ratio of 0.67 spaces per resident. In addition, there is provision for visitor, disabled parking, space for a car club and vehicle charge areas. Cycle parking is also to be installed with one place per residential dwelling.

Appropriate provision has been provided for the site commercial activity with access for refuse and fire tenders vehicles.

The conclusion to the report is that the location of the scheme offers future residents the opportunity to travel sustainability within the local vicinity. This will be promoted by the development team, both by promotion and the installation a suitable facilities.

The report also details that the scheme will not increase the overall travel locally following a review of historic worst-case data. The development team, through the stated measures will endeavour to minimise personnel car usage.

Welwyn Hatfield Sustainability Checklist cross reference – The above section meets the criteria for sections B 1 & 12 and B30 to 36

3.3 Water saving design

The conservation of water resources is a key element within Local plan, notability policy SADM 13. Control of internal water usage is managed within the building regulation, via approved document part G. This document set a target of 125 litres/person/day for all new dwellings. Policy SADM13 requests that the target is lowered to 110 litres/person/day.

This will be achieved within all dwellings via the selection of advance water saving equipment. Specification is detailed below –

- Dual flush – 6/4 litres
- Hand wash taps – 4 litres/min
- Bath – 150 litres to overflow
- Shower – 8 litres/min
- Kitchen tap – 6 litres/min

The above calculation will be adjusted, to meet the target, once low water usage washing machine & dishwasher have been selected.

The above will achieve a result below the 110 litres/person/day policy target.

Flood Risk Assessment and Drainage Strategy report (Curtins ref 077090-CUR-00-xx-RP-D-92001) details that the site is within a low flood risk zone and defines the rainwater management infrastructure.

A flood risk has been identified, created by the current drainage design. This will be rectified by the proposed new design.

Rainwater discharge from the proposed scheme will be managed via a combination strategy of infiltration, blue & green roofs and attenuation stores. All design elements to meet the current SUDs performance criteria.

Welwyn Hatfield Sustainability Checklist cross reference – The above section meets the criteria of sections B 4 to 7.

3.4 Landscaping and Ecology enhancement

A detailed ecology assessment has been completed for the site (ref Green Environmental Consultants Broadwater Gardens Ecological Impact Assessment report 1434/2) The conclusion is that there are no significant ecological constraints to the redevelopment of the area. The report states that redevelopment offers scope for increasing local biodiversity, thereby improving the local ecology.

The scheme is to be constructed on a brown field site, the Biopark, Broadwater Road University campus. The site currently comprises of buildings and hardstanding. As a result, with the proposed ecological enhancement programme there is a target to increase the biodiversity by almost 800%.

The ecology assessment report is complemented by the Landscape design (ref BMD Broadwater Gardens Landscape design BMD.20.044). The landscape design team are committed to working with the ecologist to increase the biodiversity, via selected planting and the provision of bird and mammal friendly features to encourage their activity.

A number of open space recreational facilities will be created, with welcoming access routes to encourage activity.

Welwyn Hatfield Sustainability Checklist cross reference – The above section meets the criteria for sections A1 to 5a, B16 to 21, B26 to 28, B26 to 29, B41 to 42 & C9 to 10

3.5 Materials

All primary building materials proposed within the construction will have a BRE Green Guide rating of between A+ and B. Assessment against the BRE Green Guide will ensure selected materials will have minimised embodied carbon and are recyclable at end of life.

To enhance the material selection the team design will ensure that all key building elements are purchased in accordance with the following –

- All timbers to be sustainability source with full chain of custody certification.
- Suppliers to be accredited with ISO 14001 and/or EMAS where appropriate.

Welwyn Hatfield Sustainability Checklist cross reference – The above section meets the criteria for sections B 22, B39 & C1

3.6 Waste management and Pollution Prevention

To promote resource efficiency via the effective and appropriate management of construction site waste a detailed Construction Site Waste Plan will be defined at the start of detailed design period.

The document core strategy will be in two parts, minimising Construction waste;

- Target benchmarks for resource efficiency (ie m^3 of waste per $100m^2$ of material)
- Procedures and commitments to minimise non-hazardous construction waste at design stage
- Procedures for minimising hazardous waste
- Monitoring, measuring and reporting site waste

Part two, to divert Waste from landfill though design;

- Re-use waste material on site

Additional site policies will be in place to mitigate environmental impact, methods to limit air & dust pollution and procedures to manage ground and surface water contamination. Policies to be enforce during site inductions.

The scheme will also operate under the Considerate Constructors Scheme, with the goal to score beyond best practise within the independently assessed scheme.

In order to manage operational waste management, the scheme will incorporate the follow measures to promote adoption of the available Welwyn and Hatfield recycling services –

- Each resident will be issued a document detailing the recycling facilities on offer by Welwyn and Hatfield. This will include collection facilities and local recycling drop off locations
- Each kitchen will be equipped with a bin designed to store recyclable materials
- Communal refuse areas will be equipped with recycling eurobins suitable for the Welwyn and Hatfield collection service.

Welwyn Hatfield Sustainability Checklist cross reference – The above section meets the criteria for sections B 12a to 15, C4 to 6, C7 to 8a & C11 to 14

3.7 Noise and light Pollution

A detailed Noise assessment has been produced by Noise Solution Ltd and submitted in support of the application.

The assessment concludes that with reasonable mitigation measures internal noise levels will meet BRE guidelines. Mitigation measures to include glazing and ventilation specification details to limit sound transmission. An Acoustic fence is proposed to the western boundary.

Vibration levels have also been monitored and results indicate that levels are low and will not have an adverse effect on the proposed scheme.

A light pollution design report has not been completed to accompany the application. It is understood that a report will be conditioned and this is welcomed by the applicant.

Welwyn Hatfield Sustainability Checklist cross reference – The above section meets the criteria for sections B2 C3

4.0 Summary

Welwyn and Hatfield Borough Council is committed to the delivery of sustainable developments as detailed within their current and future local plan.

In light of the policy direction the proposed scheme meets the sustainability goal defines, as detailed within this document.

In addition the Broadwater Gardens scheme meets the Broadwater Road West Supplementary Planning Document target of reducing carbon dioxide emissions by 10% through the installation of low and zero renewable technology.

In summary this sustainability statement has highlighted the key opportunities to the design and construction teams to minimise the environmental impact of the scheme and highlights how the proposal meets the national and regional planning policies.

Appendix A – Internal water calculation

Job no:	Ref 10-20-84957
Date:	15/12/2020
Assessor name:	
Development name:	Broadwater Rd, Welwyn Garden City

WATER EFFICIENCY CALCULATOR FOR NEW DWELLINGS - PART G: 2010

		Dwelling Type	Type 1		Type 2	
		Description	Spec			
Installation Type	**Unit of measure**		Capacity/ flow rate	Litres/ person/ day	Capacity/ flow rate	Litres/ person/ day
	Is a dual or single flush WC specified?		**Dual**		**Dual**	
WC	Full flush volume		6	8.76		0.00
	Part flush volume		4	11.84		0.00
Taps (excluding kitchen and external taps)	Flow rate (litres / minute)		4	7.90		0.00
	Are both a Bath & Shower Present?		**Bath & Shower**		**Bath & Shower**	
Bath	Capacity to overflow		150	16.50		0.00
Shower	Flow rate (litres / minute)		8	34.96		0.00
Kitchen sink taps	Flow rate (litres / minute)		6	13.00		0.00
	Has a washing machine been specified?		**No**		**Yes**	
Washing Machine	Litres / kg			17.16		0.00
	Has a dishwasher been specified?		**No**		**Yes**	
Dishwasher	Litres / place setting			4.50		0.00
	Has a waste disposal unit been specified?		**No**	0.00		0.00
Water Softener	Litres / person / day		0	0.00		0.00
	Calculated Use		114.6		0.0	
	Normalisation factor		0.91		0.91	
	External use		5.0		5.0	
Building Regulations 17.K (<125 L/p/d)		**Total Consumption**	**109.3**		**0.0**	
		17.K Compliance?	**Yes**		-	

The calculation on this sheet is ONLY valid for the fittings and appliances listed overleaf.

Appendix B – Sustainability checklist

WELWYN HATFIELD BOROUGH COUNCIL

SUSTAINABILITY CHECKLIST

The overall aim of the Plan (Welwyn Hatfield District Plan) is to secure sustainable development in the district. Therefore, Policy SD1 of the District Plan expects all applicants to demonstrate that their development will be consistent with the principles of sustainable development and the objectives and policies of the Plan, by submitting a statement with their application assessing the proposals against a checklist of sustainability criteria. This Guidance contains that checklist.

The checklist identifies the factors that should be addressed in making development sustainable. It is split into three sections, with criteria dealing with:

a) the citing of the proposal and the existing land use;
b) the impact and use of the development once it is built;
c) the operation of the site during the construction period.

Whilst a number of the criteria relate to the way development is designed or laid out, the checklist does not address aesthetic design issues. Applicants are required to submit a separate statement on urban design, showing how their development satisfies the design principles and standards in the Plan.

Not all the criteria are applicable to all forms of development. Larger scale development will be expected to address most of the criteria within their statement, smaller scale development only some of them. The capital letters in bold alongside each criterion indicate the types of development to which the criterion applies, according to the key below. Householder developments, namely extensions or alterations to dwellings, have a more limited impact on sustainability and hence only a few of the criteria apply. To make the completion of the statement more straightforward for this type of application, a separate 'Householder Checklist' is available.

Key to Types of Development

A	*Large scale*	Residential - more than 5 houses Commercial - more than 235 sq. meters of floor space
B	*Small Scale*	Residential - 5 houses or less Commercial - 235 sq. meters of floor space or less
C	*Householder development*	
D	*Change of use of land or of buildings, or conversions*	
E	*Non building, such as car parking, landscaping, engineering operations*	
F	*Advertisements and Telecommunications*	

The completed Checklist should be returned with your completed planning application further guidance on sustainable development can be found at http://www.hertsdirect.org/scholearn/aboutstatesch/assetsteward/Sustainability

A) SITING AND LAND USE

How will the development satisfy the following criteria?

1. Use previously developed land as opposed to a green field site.**(A,B,D,E)**	☑
2. Avoid the loss of urban open spaces and, designated sites for nature conservation, and damage to the Historic Environment. **(A,B,D,E,)**	☑
3. Make use of any derelict, under-used, or vacant land or buildings.**(A,B,D,E)**	☑
4. Encourage a maximum lifespan for the development with the use of durable construction unless there are extenuating circumstances requiring more flexibility. **(A,B,D)**	☑
5. Avoid areas of high quality agricultural land and floodplains. **(A,B,D,E)**	☑
5a Avoid the possible sterilisation of mineral resources identified in the Adopted Minerals Local Plan. **(A,B,D,E)**	☑

B) IMPACT AND FUTURE USE OF THE DEVELOPMENT

How will the development satisfy the following criteria?

Minimisation of Pollution

1. Minimize noise, e.g. building design, use of quieter technology, operating hours and traffic reduction. **(A,B,D,E,F)**	☑
2. Minimize light pollution, e.g. design of buildings, and lighting schemes, avoiding use of floodlighting. **(A,B,D,E,F)**	☑
3. Minimize odours from buildings and plant. **(A,B,D,E)**	☑

Management of Water Resources

4. Use local sources for the water supply and disposal of waste if possible.**(A,B,E)**	☑
5. Prevent pollution of ground and surface water and enhance water quality where possible e.g. renew sewers, waterway maintenance, reed beds for waste water treatment. **(A,B,D,E)**	☑
6. Protect the hydrology of the site and the surrounding areas e.g. use permeable surfaces for car parks, provide swells, and open water areas, minimize road length, avoid water run-off into water courses. **(A,B,D,E)**	☑
7. Minimize water consumption through the use of water efficient fixtures and fittings, reed bed systems, ponds, rainwater storage and recovery and grey water re-use. **(A,B,C,D,E)**	☑

Energy Efficiency

8. Maximize passive solar gain by considering the citing and microclimate of the individual buildings e.g. making best use of the sun, avoiding overshadowing, size & orientation of windows, use of earth sheltering. **(A,B,C)**	☐
9. Minimize heat loss and maximize energy efficiency through building design e.g. using sources of renewable energy, solar panels, insulation, using lobbies and conservatories as buffer zones, draught proofing, localized temperature controls, weather-breaking planting. **(A,B)**	☐
10. Reduce green house gas emissions through building design, e.g. use of condensing boilers. **(A,B,C,D)**	☐
11. Generate power efficiently from a local source e.g. combined heat and power plant, heat/methane recovery from waste and other forms of renewable energy. **(A)**	☐
12. Encourage energy efficient modes of transport e.g. cycling walking and buses. **(A,B,D)**	☐

Waste Management

12a. Follow the Waste Strategy Hierarchy of Minimization, Re-use, recovery, and disposal as a last resort. **(A,B,D,E)**	☐
13. Maximize facilities on site to help with recycling, including home composting. **(A,B)**	☐
14. Include facilities for separation and storage of different types of waste for collection. **(A,B,D)**	☐
15. Include public facilities for recycling of waste and consider the need for access by various disposal contractors. **(A,B)**	☐

Habitats and Species

16. Ensure that there will be no overall net loss of biodiversity i.e. the quantity and variety of species. **(A,B,D,E)**	☐
16a. Contribute to the priorities and targets set out in the Local BAP (Biodiversity Action Plan). **(A,B,D,E)**	☐
17. Protect designated sites and other sites/features of nature conservation importance, including SSSIs, and County Wildlife Sites. **(A,B,D,E)**	☐
18. Conserve protected species where found.**(A,B,D,E)**	☐
19. Make positive provision to nature conservation e.g. nature reserves, naturally shaped watercourses, native planting to encourage wildlife, or other wildlife- friendly landscape features. **(A,B,D,E)**	☐
20. Provide for the ongoing management of habitats where applicable **(A,D,E)**	☐
21. Ensure that waste products do not harm wildlife. **(A,B,D)**	☐
22. Encourage use of timber from sustainable managed sources. **(A,B,D,E,F)**	☐

Community Provision and Equity

23. Involve the local community in the development of proposals.**(A,B)**	☐
23a Contribute to the provision of education facilities where appropriate.**(A)**	☐
24. Provide affordable housing, or commuted payment for affordable/ social housing where appropriate. **(A)**	☐
25. Provide appropriate health and childcare facilities where appropriate to satisfy local demand. **(A)**	☐
26. Improve leisure and recreational facilities e.g. recreation grounds, playing fields, children's play areas. **(A)**	☑
27. Make positive provision for open spaces e.g. provide parks, village greens, and commuted sums for future maintenance. **(A)**	☑
28. Improve and maintain access to existing open space. **(A,B)**	☑
29. Improve community, cultural and social facilities e.g. community centre's, public art. **(A)**	☑

Accessibility

30. Improve or enable convenient access to employment centre's, shops, recreation and community facilities and schools. **(A,B)**	☑
31. Maximize access for the pedestrian/cyclist to & within the development & give priority to footpaths and cycle ways over private transport modes. **(A,B,D)**	☑
32. Improve access to buildings for everyone (wheelchair users, people with young children and disabled people). **(A,B,D)**	☑
33. Give public transport priority over private transport modes. **(A,B)**	☑
34. Improve facilities and conditions for cycling especially safety aspects e.g. secure covered cycle storage, cycle paths, signals and lanes. **(A,B,D,E)**	☑
35. Meet the requirements for the preparation and implementation of a Green Transport Plan. **(A)**	☑
36. Minimize car parking e.g. appropriate levels/standards of parking, car free neighborhoods, park and ride. **(A,B,D,E)**	☑

Contribution to the Economy

37. Increase job opportunities for local people e.g. training courses, inward investment, and small business units. **(A,B,D)**	☐
38. Demonstrate how the proposal will add to the generation of income in the local area. **(A,B,D)**	☐
39. Promote socially and environmentally responsible business practice e.g. waste minimization, office recycling, energy saving schemes and noise reduction. **(A,B,D)**	☑
40. Add to diversity of the local economy. **(A,B,D)**	☐

Health and Safety

41. Minimize opportunities for crime through the layout of buildings and spaces e.g. natural surveillance of paths overlooking of paths, appropriate landscaping and mixed uses. **(A,B,D)**	☑
42. Segregate vehicles from all other modes of transport wherever possible. **(A,B,E)**	☑
43. Store potentially hazardous materials safely. **(A,B,D)**	☑

C) CONSTRUCTION PERIOD

How will the development satisfy the following criteria?

Energy Efficiency

1. Demonstrate how the energy costs of developing the site will be minimized in terms of extraction, manufacture, transport, use and disposal in construction e.g. minimize changes in site levels during construction, avoid use of aluminium. **(A)**	☑

Minimization of Pollution

2. Include a site investigation to identify areas of soil contamination and take correct measures for decontamination. **(A,B,D,E)**	☑
3. Minimize noise levels and light pollution during the building processes e.g. use of quieter technology, restriction of operating hours and traffic reduction. **(A,B,D,E)**	☑
4. Minimize air and dust pollution during construction. **(A,B,D,E)**	☑
5. Prevent pollution of ground and surface water. **(A,B,D,E)**	☑
6. Minimize odours from buildings and plant. **(A,B,D,E)**	☑

Waste Management

7. Identify the volumes and type of waste generated during development through construction and occupation and take measures to minimize, reuse and recycle waste. **(A,B)**	☑
8. Encourage the use of renewable recycled, recyclable and durable products e.g. building materials, salvage material for re-use/ recycling, use demolition materials for hardcore and aggregate. **(A,B,D,E)**	☑
8a. Promote the use of local materials first, followed by low embodied energy materials, and finally high embodied energy imported materials **(A,B,C,D,E)**	☑

Habitats and Species

9. Ensure the protection of trees, hedgerows and other plants during construction. **(A,B,D,E)**	☑
10. Preserve wildlife habitats on site during construction either in situ or by translocation. **(A,B,D,E)**	☑

Health and Safety

11. Use clean hazard-free technologies for plant and building operation and maintenance. **(A,B,D,E)**	☑
12. Store potentially hazardous materials safely. **(A,B,D,E)**	☑
13. Avoid unsafe building materials e.g. asbestos, lead paints, organ chlorides.(A,B,D)	☑
14. Encourage liaison with the local community as part of a 'Considerate Contractor' approach to the construction phase. **(A,B,D,E)**	☑

Site Address: BIO PARK, BROADWATER Rd. AL7 3AX.

Details of person responsible for completing the checklist:

Name: A MITCHELL.

Relationship to proposal: SUSTAINABLITY CONSULTANT

e.g. applicant, agent, ecological consultant.

Date: 16/12/20