HARBOUR VIEW BRISTOL

Sustainability Statement and Energy Strategy

July 2024

Our ref: 3845

Sustainability Statement and Energy Strategy

Proposed Rooftop Terrace

Building 11,
Explore Lane,
Bristol Harbourside

Prepared on behalf of
Canada Life Asset Management

July 2024

Small Planning Consultancy of the Year London 2022
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Appendices

1. Introduction and Background

1.1 This Sustainability Statement and Energy Strategy is prepared on behalf of Canada Life Asset Management in support of its detailed planning application affecting Building 11, Explore Lane, Bristol. The application is submitted under the provisions of Section 62A of the Town and Country Planning Act 1990 and has the reference S62/2024/0053 and is described as:

> *'Detailed planning application for the use of part of the roof area as an outdoor terrace, comprising the provision of a metal canopy frame with retractable sun shade, glass balustrade and acoustic screen and provision of biodiverse green roof to part of roof top plant room.'*

1.2 As is set out in the supporting Planning Statement, the planning application follows the grant of planning application referenced 23/00975/F in February 2024. That application was submitted on 28th February 2023 and is described in Table 1 below (as Application 1).

1.3 A second planning application (described as Application 2) was submitted directly to the Council on 27th June 2024 following the grant of Application 1. It seeks additional uses to that approved under Application 1, namely use for indoor sport and recreation (Use Class E(d) and/or a comedy club (sui generis). It was submitted because the Council was unwilling to accept additional uses to Application 1 once it was being determined.

1.4 The reason why this background is important to this statement is because the applicant will need to implement either Application 1 or 2 in order to be able to make use of the proposed terrace should it be approved. This is because the terrace will be accessed from the mezzanine floor forming part of those applications.

1.5 The proposed terrace had formed part of Application 1. It was, at that stage of a much larger size than that now proposed through this planning application (435 square metres compared with 200 square metres) and more robust architectural

form (it included a more robust timber pergola). It was removed from the application to avoid it being refused, as officers had objected to it on heritage grounds.

1.6 Application 1 was supported by a Sustainability and Energy Statement which accounted for the larger terrace at that time. It has been resubmitted for Application 2. A copy of it is provided at Appendix 1 and the majority of its findings/strategy are incorporated into this statement. There is a clear association between the terrace application and the sustainable and energy measures approved and proposed (once more) for the related works.

1.7 As can additionally be seen from Table 1 below, the current application and Application 2 also include a demonstration as to how they will provide a Biodiversity Net Gain (BNG). This was not a requirement at the time of the submission of Application 1 at that time.

Table 1 – Summary of the three applications

Planning Application	Summary of Proposal
Application 1 (Approved February 2024)	Change of use of part of the internal floorspace and part of the roof area of Unit 5 from use as a casino (sui generis) to use as a restaurant/drinking establishment with expanded food provision (Use Class E(b)/sui generis); the provision of a mezzanine floor to serve the new restaurant/drinking establishment with expanded food provision; external alterations to part of the Unit 5 roof area comprising balustrades and infilling of existing brises soleil; plus external alterations to the roof top plant room, to include the provision of new acoustic panels and photovoltaic panels.
Application 2 (Submitted separately to Bristol City Council on June 27th 2024)	Change of use of part of the internal floorspace and part of the roof area of Unit 5 from use as a casino (sui generis) to provide a new flexible unit (restaurant/drinking establishment with expanded food provision (Use Class E(b)/sui generis) and/or Use Class E(d) and/or as a comedy club (sui generis)); the provision of a mezzanine floor; external alterations to part of the Unit 5 roof area comprising balustrades and infilling of existing brises soleil; plus external alterations to the roof top plant room, to include the provision of new acoustic panels and photovoltaic panels and provision of a biodiverse green roof to part of roof top plant room.

Application 3 (This application)	Detailed planning application for use of part of the roof area as an outdoor terrace, comprising the provision of a metal canopy frame with retractable sun shade, glass balustrade and acoustic screen and provision of a biodiverse green roof to part of roof top plant room.

1.8 The structure of the remainder of the statement is as follows:

Section 2 Sets out the relevant planning policy context
Section 3 Provides the Sustainability and Energy Strategy
Section 4 Provides an overall conclusion

2. Planning Policy Context

2.1 The adopted development plan comprises of:

- The **Core Strategy** (adopted June 2011);
- The **Bristol Central Area Plan** (adopted March 2015); and
- The **Site Allocations and Development Management Policies** (adopted July 2014).

2.2 The Council's Planning Application Requirements Local List (May 2022) provides a list of relevant policy drivers for Sustainability Statements and Energy Strategies. These are set out in Table 2, below.

Table 2 – Relevant Policies

Development plan document/policy	Policy name
Core Strategy	
BCS13	Climate Change
BCS14	Sustainable Energy
BCS15	Sustainable Design and Construction
BCS16	Flood Risk and Water Management
Bristol Central Area Plan	
BCAP20	Sustainable design standards
BCAP21	Connection to heat networks
BCAP25	Green infrastructure in city centre developments
Site Allocations and Development Management Policies	
DM15	Green Infrastructure Provision
DM29	Design of New Buildings

3. Sustainability and Energy Strategy

3.1 As is highlighted in paragraph 4.13.6 of the Core Strategy identifies that statements should be proportionate to the scale of development. Here the development is minor by definition in terms of its floor area and is neither a new building or a development that involves significant building operations. It nevertheless considers each of the above policies and sets out how the proposal responds to their requirements.

3.2 The following section presents each policy (some in tabulated form) with the applicant's strategy/demonstration of compliance against each.

Core Strategy Policy

i. Core Strategy Policy BCS13 – Climate Change

3.3 This policy and the applicant's response is provided below.

Table 3 – Policy BCS13 and applicant's response

Policy Text	Response
'Development should contribute to both mitigating and adapting to climate change, and to meeting targets to reduce carbon dioxide emissions. *Development should mitigate climate change through measures including:* • *High standards of energy efficiency including optimal levels of thermal insulation, passive ventilation and cooling, passive solar design and the efficient use of natural resources in new buildings.*	Emphasis will be put on the building contractor to source materials with low embodied carbon where appropriate and those materials from recycled or sustainable sources. The development will be compliant with Part M of the Building Regulations and has been designed considering future flexibility and adaptability. Internal walls can be reconfigured to form new spaces and the proposed M&E system allows for the incorporation of future technologies and follows the principles set out in the Future Homes Standard Consultation.
• *The use of decentralised, renewable and low-carbon energy supply systems.*	Approved Application 1/Application 2 incorporate PV panels to the plant

	room roof. The energy saving details are provided below.
• *Patterns of development which encourage walking, cycling and the use of public transport instead of journeys by private car.*	The site is within the primary leisure area of the City Centre and approved Application 1/Application 2 incorporate six internal staff cycle spaces, with six lockers and a shower. The site caters for walk-in trade due to its location and the locality provides ample cycle parking opportunities for customers (Sheffield stands). There are existing food, leisure and drink operators in the locality. Therefore the terrace can benefit from linked trips, including from tourists (and those using the adjacent Ibis hotel for example).
Development should adapt to climate change through measures including: • *Site layouts and approaches to design and construction which provide resilience to climate change.*	The development will include energy-efficient building design principles. This includes appropriate insulation, orientation for natural light, and the use of high-performance windows to reduce the need for artificial lighting and heating.
• *Measures to conserve water supplies and minimise the risk and impact of flooding.*	Water use for the proposed development will conform to the 125 litres per person per day limit as set in Part G of the Building Regulations. Flow limiting fittings will be fitted along with dual flush toilets and the option of rain and greywater harvesting will be further explored at the detailed design stage.
• *The use of green infrastructure to minimise and mitigate the heating of the urban environment.*	The development proposes to use part of the plant room roof above to provide an enhanced green roof. The submitted BNG Assessment confirms that the scheme will deliver 34%

	BNG, much higher than the mandatory 10%. The BNG Assessment provides a Draft Habitat Management and Monitoring details.
• *Avoiding responses to climate impacts which lead to increases in energy use and carbon dioxide emissions.* *These measures should be integrated into the design of new development.* *New development should demonstrate through Sustainability Statements how it would contribute to mitigating and adapting to climate change and to meeting targets to reduce carbon dioxide emissions by means of the above measures.*	As set out in the Sustainability and Energy Statement for approved Application 1/Application 2, the proposed development has considered all technologies listed in the Supplementary Planning Document 'Climate Change and Sustainability'. From the initial design considerations and the results of the Low Zero Carbon Feasibility Study[1], the proposal is to use a Photovoltaic (PV) panel array system orientated south. This will provide a saving of 1615.74 $KgC0_2$ /year equating to a 22% saving on Baseline Emissions. The PV panels/areas are illustrated on approved drawing 'Level 4 Proposed' for Application 1 and also on 'Level 4 Proposed' for submitted Application 2. Copies are provided at Appendix 2.

ii. Core Strategy Policy BCS14 – Sustainable Energy

3.4 This policy states:

> *'Proposals for the utilisation, distribution and development of renewable and low carbon sources of energy, including large-scale freestanding installations, will be encouraged. In assessing such proposals the environmental and economic benefits of the proposed development will be afforded significant weight, alongside considerations of public health*

[1] This is provided at page 10 of the Cook Brown Energy & Sustainability Statement for approved Application 1/Application 2 (copy at Appendix 1)

and safety and impacts on biodiversity, landscape character, the historic environment and the residential amenity of the surrounding area.

Development in Bristol should include measures to reduce carbon dioxide emissions from energy use in accordance with the following energy hierarchy:

1. Minimising energy requirements;
2. Incorporating renewable energy sources;
3. Incorporating low-carbon energy sources.

Consistent with stage two of the above energy hierarchy, development will be expected to provide sufficient renewable energy generation to reduce carbon dioxide emissions from residual energy use in the buildings by at least 20%. An exception will only be made in the case where a development is appropriate and necessary but where it is demonstrated that meeting the required standard would not be feasible or viable.

The use of combined heat and power (CHP), combined cooling, heat and power (CCHP) and district heating will be encouraged. Within Heat Priority Areas, major development will be expected to incorporate, where feasible, infrastructure for district heating, and will be expected to connect to existing systems where available.

New development will be expected to demonstrate that the heating and cooling systems have been selected according to the following heat hierarchy:

1. Connection to existing CHP/CCHP distribution networks
2. Site-wide renewable CHP/CCHP
3. Site-wide gas-fired CHP/CCHP
4. Site-wide renewable community heating/cooling
5. Site-wide gas-fired community heating/cooling
6. Individual building renewable heating'

3.5 As highlighted above, the PV panels will result in a 22% reduction in CO_2 emissions. The Cook Brown Energy & Sustainability Statement for approved Application 1/Application 2 confirms that *'This proposal meets the minimum 20% reduction in carbon emissions and allows for future reduction in carbon emissions with the potential for connection to a heat network if one was to be created locally.'*

iii. Core Strategy Policy BCS15 – Sustainable Design and Construction

3.6 This policy is set out in the table overleaf.

Table 4 - Policy BCS15 and applicant's response

Policy Text	Response
'Sustainable design and construction will be integral to new development in Bristol. In delivering sustainable design and construction, development should address the following key issues: • *Maximising energy efficiency and integrating the use of renewable and low carbon energy;*	This is achieved through the use of PV panels, as highlighted above.
• *Waste and recycling during construction and in operation;*	A Construction Site Waste Management Plan will be implemented by the building contractor following the industry standard Waste Hierarchy. Waste will be assessed for re-use in the development, otherwise where possible sorted on site prior to collection to minimise the use of landfill and to emphasise repurposing the waste through licensed waste companies. See below in terms of operational recycling.
• *Conserving water resources and minimising vulnerability to flooding;*	Whilst the terrace itself will not include taps/toilets etc, the Cook Brown Energy & Sustainability Statement for approved Application 1/Application 2 confirms that water use for the proposed development will conform to the 125 litres per person per day limit as set in Part G of the Building Regulations. Flow limiting fittings will be fitted along with dual flush toilets. In addition, the option of rain and greywater harvesting will be further explored at the detailed design stage.
• *The type, life cycle and source of materials to be used;*	As part of the proposed development a lifecycle assessment of building materials

	and components will be conducted to understand their environmental impact. Opting for materials with lower embodied carbon and consider durability and recyclability.
• *Flexibility and adaptability, allowing future modification of use or layout, facilitating future refurbishment and retrofitting;*	No detailed layout is provided for the terrace as this will be provided by the incoming operator.
• *Opportunities to incorporate measures which enhance the biodiversity value of development such as green roofs.*	A green is provided, as highlighted above. As is set out in the supporting BNG Assessment, the existing site has a baseline biodiversity value of 0.13 Habitat Units. Under the proposal, the development is predicted to deliver 0.17 Habitat Units, corresponding to an equivalent of +31.12% BNG.
New development will be required to demonstrate as part of the Sustainability Statement submitted with the planning application how the above issues have been addressed. For major development and development for health or education uses, the Sustainability Statement should include a BREEAM and/or Code for Sustainable Homes assessment. Additionally, in the case of a super-major development, a BREEAM for Communities assessment will be required.	The development is minor development.
From 2016 residential development will be expected to meet Level 6 of the Code for Sustainable Homes. For non-residential development, also from 2016, a BREEAM "Excellent" rating will be expected.	Not applicable.
All new development will be required to provide satisfactory arrangements for the storage of refuse and recyclable materials as an integral	As set out in the approved/submitted drawings for approved Application 1/Application 2, the proposed changes to the ground floor include a larger bin

part of its design. Major developments should include communal facilities for waste collection and recycling where appropriate.	store. This will incorporate bins for the sorting and collection of different recyclable waste products for the whole building, including the end occupier of the proposed terrace.
New homes and workplaces should include the provision of high-speed broadband access and enable provision of Next Generation broadband.	The proposed development will utilise existing physical infrastructure to enable the provision of highspeed electronic communications (greater than 30Mbps) as outlined in Part R of the Building Regulations.

iv. Core Strategy Policy BCS16 – Flood Risk and Water Management

3.7 This policy states:

> *'Development in Bristol will follow a sequential approach to flood risk management, giving priority to the development of sites with the lowest risk of flooding. The development of sites with a sequentially greater risk of flooding will be considered where essential for regeneration or where necessary to meet the development requirements of the city.*
>
> *Development in areas at risk of flooding will be expected to:*
>
> - *be resilient to flooding through design and layout, and/or*
> - *incorporate sensitively designed mitigation measures, which may take the form of on-site flood defense works and/or a contribution towards or a commitment to undertake such off-site measures as may be necessary,*
>
> *in order to ensure that the development remains safe from flooding over its lifetime.*
>
> *All development will also be expected to incorporate water management measures to reduce surface water run-off and ensure that it does not increase flood risks elsewhere. This should include the use of sustainable drainage systems (SUDS).'*

The approved Flood Risk and Drainage Assessment for Application 1/Application 2 has been submitted with the application. The document references and takes account of Policy BCS16 and is therefore not repeated here.

Bristol Central Area Policy

i. Policy BCAP20 – Sustainable design standards

This policy relates to residential development and non-residential development exceeding 1,000 square metres so is not relevant to the proposed development.

ii. Policy BCAP21 – Connection to heat networks

This policy states that:

> *'Proposals for development that would require heating will be expected to demonstrate that account has been taken of potential opportunities to source heat from adjoining development or nearby heating networks.*
>
> *Proposals that would generate waste heat will be encouraged to incorporate infrastructure to capture its waste heat for reuse and/or to supply existing or future heat networks in the area.*

The Cook Brown Energy & Sustainability Statement for approved Application 1/Application 2 confirms that *'This proposal meets the minimum 20% reduction in carbon emissions and allows for future reduction in carbon emissions with the potential for connection to a heat network if one was to be created locally.'* (paragraph 5.4). The latter applies to the terrace as now presented separately but is likely to be exceeded further due to it being less than half the size of the terrace originally proposed.

ii. Policy BCAP25 – Green infrastructure in city centre developments

This policy requires green infrastructure to reduce the impact of overheating and surface water run-off. It identifies that development will be expected to incorporate various design features:

- Green roofs and roof gardens;
- Living walls;
- Street trees and other trees;
- Water features linked to SuDS; and
- Waterside landscaping where appropriate.

The applicant has chosen to provide a replacement/enhanced green roof, as documented above.

Site Allocations and Development Management Policy

i. Policy DM15 – Green Infrastructure Provision

This policy is similar to BCAP25. It contains reference to local food growing spaces and provision of trees. There is not the opportunity to provide these types of green infrastructure in relation to the terrace. Instead, the applicant has pursued the opportunity to provide BNG upgrades to the building itself.

ii. Policy DM29 – Design of New Buildings

This final policy is set out in the table below.

Table 5 – Policy DM29 and applicant's response

Policy Text	Response
'New buildings should be designed to a high standard of quality, responding appropriately to their importance and reflecting their function and role in relation to the public realm. *Proposals for new buildings will be expected to:* *i. Be clearly organised in terms of their form and internal layout and circulation to reflect the hierarchy of function they will accommodate, the uses they will serve and the context they will address; and*	As is relevant to the proposal, the terrace will be adaptable to the use sought through Application 1 and the additional uses sought through Application 2.
ii. Incorporate active frontages and clearly defined main entrances facing the public realm that emphasise corners and reinforce the most prominent frontages; and	This is not relevant to the proposal.

iii. Respond to the solar orientation of the building to support energy efficient design while ensuring as far as possible that active rooms face the public realm; and	The terrace originally proposed through Application 1, prior to its removal from the scheme, did dog-leg around the roof space to additional take advantage of views over the Millennium Square public realm, however the terrace now proposed does not include this element on design/heritage impact grounds. The main element of the terrace continues to face south to take advantage of southwards views towards the Floating Harbour. Building 11 and the view it can achieve from its southern elevation can be appreciated from the front cover of the Core Strategy (copy at Appendix 3) and in Figure 1 of the Heritage Impact Assessment. The southern orientation of the terrace will take advantage of the sun's path and will add to its attraction during the summer months and reduce further operator need for it to require any form of heating. A retractable sun shade is also provided to offer some shade.
iv. Provide appropriate natural surveillance of all external spaces; and	This is achieved by the nature of the proposal.
v. Ensure that existing and proposed development achieves appropriate levels of privacy, outlook and daylight; and	A privacy screen is provided to the terrace to prevent views towards the residential accommodation to the west.
vi. Allow for future adaptation or extension to accommodate alternative uses or to respond to the changing future needs or circumstances of occupiers by means of their internal arrangement, internal height,	This is provided through the development and the range of end uses that are able to make use of the terrace.

detailed design and construction; and	
vii. Provide appropriately for inclusive access and circulation; and	A lift is provided to access the terrace as per the approved drawings for Application 1 and the submitted drawings for Application 2. The terrace will be accessed directly from the mezzanine approved/proposed under the two applications.
viii. Incorporate opportunities for green infrastructure such as green roofs, green walls and green decks that may be accessed and used where appropriate; and	See above on the proposed green roof.
ix. Incorporate exteriors and elevations that provide visual interest from a range of viewing distances and are visually organised and well-proportioned; and	The terrace is designed (and has been re-designed) to be in keeping with the architectural character of the host building. It also, in itself, seeks to enable those using it to take advantage of views across the wider area, hence the name of the project being Harbour View.
x. Incorporate high quality detail of an appropriate scale and proportion, arranged in a coherent way that contributes positively to the overall design approach of the building; and	As above.
xi. Employ high quality, durable and sustainable materials of an appropriate texture, colour, pattern and appearance that contribute positively to the character of the area.'	Emphasis will be put on the building contractor to source materials with low embodied carbon where appropriate and those materials from recycled or sustainable sources. The terrace will be kept in a proper and well-maintained order and other supporting documents (the Planning Statement and Heritage Impact Assessment) set out how the re-design of the terrace has sought to provide the

	highest quality architectural response to the host building and locality.

4. Conclusion

4.1 This Sustainability and Energy Strategy has been provided in support of an application for a roof terrace at Building 11, Explore Lane for a new development involving the downsize of existing floorspace currently under the operation of Rainbow Casino. It draws on that submitted in support of 'Application 1' and 'Application 2', one of which will need to be implemented in order for anyone to physically access the terrace. Those two application were/are supported by an Energy & Sustainability Statement prepared by Cook Brown which was prepared when the previously proposed terrace was twice the size as that now proposed. A copy of that Energy & Sustainability Statement appends this statement.

4.2 In summary, the applicant's sustainable and energy commitments are that:

- The terrace has been designed to enable future flexibility and adaptability and will serve the flexible range of uses proposed for the new unit being created internally through the downsize of the casino.
- The site is in a sustainable city centre location and can benefit from linked trips.
- The internal development incorporates 6 new staff cycle parking spaces in a bespoke cycle store. The store will also provide a shower facility and six secure lockers.
- The green roof proposed will provide a BNG uplift of 34%.
- The PV array, provided under Application 1 and 2 will result in at least a 22% saving in baseline emissions. The PV cells will also serve the proposed terrace.
- A Construction Site Waste Plan will be implemented by the building contractor.
- A large bin store will be provided internally to enable the sorting and recycling of waste products.
- All new materials will generally be from sustainable sources such as FSC timber and will, for the majority, be Class A Green Guide rated or above. Emphasis will be put on the building contractor to source materials with low embodied carbon where appropriate and those materials from recycled or sustainable sources.

4.3 The proposal therefore complies with and supports the sustainability and energy-related policies identified in the City Council's Planning Application Requirements Local List (May 2022).

NTR Planning
June 2024

Appendix 1

Copy of Cook Brown Energy & Sustainability Statement for approved Application 1 and Application 2

Harbour View Bristol

Sustainability and Energy Statement

February 2023

cook brown. energy

ENERGY & SUSTAINABILITY STATEMENT

Harbour View, Unit 7, Explore Lane, Bristol , BS1 5TY

FULL PLANNING APPLICATION

21Th February 2023

Disclaimer

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Table of Contents

1. Introduction

Cook Brown Energy was commissioned to an Energy and Sustainability Statement for the proposed development of Unit 7 into a Roof Top food and drink venue. The purpose of this Statement is to demonstrate that climate change mitigation measures comply with Bristol City Council's Development Framework Core Strategy and the National Policy Framework including the designated energy hierarchy. It also ensures energy remains an integral part of the design and evolution of the development as documented in the revision table. The Statement sets out the Proposed Developments baseline energy consumption under Part L2 (2021) of the Building Regulations, it then outlines in detail the steps required to meet relevant planning requirements.

The resulting recommendations for the development follow the energy hierarchy of;

- Use Less Energy
- Use Renewable Energy

This Statement will also set out how the proposed development intends to address relevant planning policy requirements regarding wider sustainability issues. A set structure has been established to address multiple policy requirements under the same topic with specific detail on key issues as and where necessary.

2. Development Policies & Regulations

International and national bodies have set out broad principles of sustainable development. Resolution 42/187 of the United Nations General Assembly defined sustainable development as meeting the needs of the present without compromising the ability of future generations to meet their own needs. The UK Sustainable Development Strategy Securing the Future set out five 'guiding principles of sustainable development: living within the planet's environmental limits; ensuring a strong, healthy and just society; achieving a sustainable economy; promoting good governance; and using sound science responsibly.[2]

The National Planning Policy Framework sets out the Government's planning policies for England and how these should be applied. The purpose of the planning system is to contribute to the achievement of sustainable development. At a very high level, the objective of sustainable development can be summarised as meeting the needs of the present without compromising the ability of future generations to meet their own needs. Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives):[2]

- an economic objective – to help build a strong, responsive and competitive economy, by ensuring that sufficient land of the right types is available in the right places and at the right time to support growth, innovation and improved productivity; and by identifying and coordinating the provision of infrastructure;[2]
- a social objective – to support strong, vibrant and healthy communities, by ensuring that a sufficient number and range of homes can be provided to meet the needs of present and future generations; and by fostering a well-designed and safe built environment, with accessible services and open spaces that reflect current and future needs and support communities' health, social and cultural well-being; and[2]
- an environmental objective – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.[2]

[2] https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/810197/NPPF_Feb_2019_revised.pdf

2.1. Local Development Strategy

The Proposed Development is required to meet Policies BCS13 – BCS16 of Bristol City Council's Development Framework Core Strategy. This Statement will follow guidelines for energy efficiency, renewable energy and the transition to zero carbon development as outlined in the Bristol City Council's Planning Guidance Document 'Climate Change and Sustainability.

2.1.A. Policy BCS13 – Climate Change

"Development should contribute to both mitigating and adapting to climate change, and to meeting targets to reduce carbon dioxide emissions"

2.1.B. Policy BCS14 – Sustainable Energy

"Proposals for the utilisation, distribution and development of renewable and low-carbon sources of energy, including large-scale freestanding installations, will be encouraged. In assessing such proposals the environmental and economic benefits of the proposed development will be afforded significant weight, alongside considerations of public health and safety and impacts on biodiversity, landscape character, the historic environment and the residential amenity of the surrounding area".

2.1.C. Policy BCS15 – Sustainable Design and Construction

"Sustainable design and construction will be integral to new development in Bristol. In delivering sustainable design and construction, development should address the following key issues:

- *Maximising energy efficiency and integrating the use of renewable and low-carbon energy;*
- *Waste and recycling during construction and in operation;*
- *Conserving water resources and minimising vulnerability to flooding;*
- *The type, life cycle and source of materials to be used;*
- *Flexibility and adaptability, allowing future modification of use or layout, facilitating future refurbishment and retrofitting;*
- *Opportunities to incorporate measures which enhance the biodiversity value of development, such as green roofs."*

2.1.D. Policy BCS16 – Flood Risk And Water Management

"Development in Bristol will follow a sequential approach to flood risk management, giving priority to the development of sites with the lowest risk of flooding. The development of sites with a sequentially greater risk of flooding will be considered where essential for regeneration or where necessary to meet the development requirements of the city."

2.1.E. Considerations For Meeting Planning Policy

The proposed development considers in respect of policies listed above those points listed in the planning guidance document the following;

A. Waste and Recycling
B. Water
C. Materials
D. Flexibility and Adaptability
E. Biodiversity
F. ICT
G. Flood Risk and Water Management
H. Layout

Evidence for these considerations are detailed in section 3.3 of this statement.

2.1.D. Statutory Requirements

The proposed development will be required to comply with the statutory requirements of the applicable Building Regulations. This statement will address those regulations associated with Part L2 (2021) of the Building Regulations, specifically:

- Approved Document L Volume 2 2021 – Conversation of fuel and power, Building Other Than Dwellings

Building Regulations Part L defines the energy efficiency standards required for buildings. This regulation controls insulation values of thermal elements, areas of glazing, doors and other openings in the façade, efficiency, insulation and controls of heating appliances and systems as well as lighting and hot water storage efficiencies.

3. The Development

3.1. Existing Site

The current site is Harbour View, Unit 7, Explore Lane, Bristol, BS1 5TY

Google Image

Figure 1: Site Location Plan

3.2. Proposed Development

The proposed development is for the construction of A Rooftop food and drink venue.

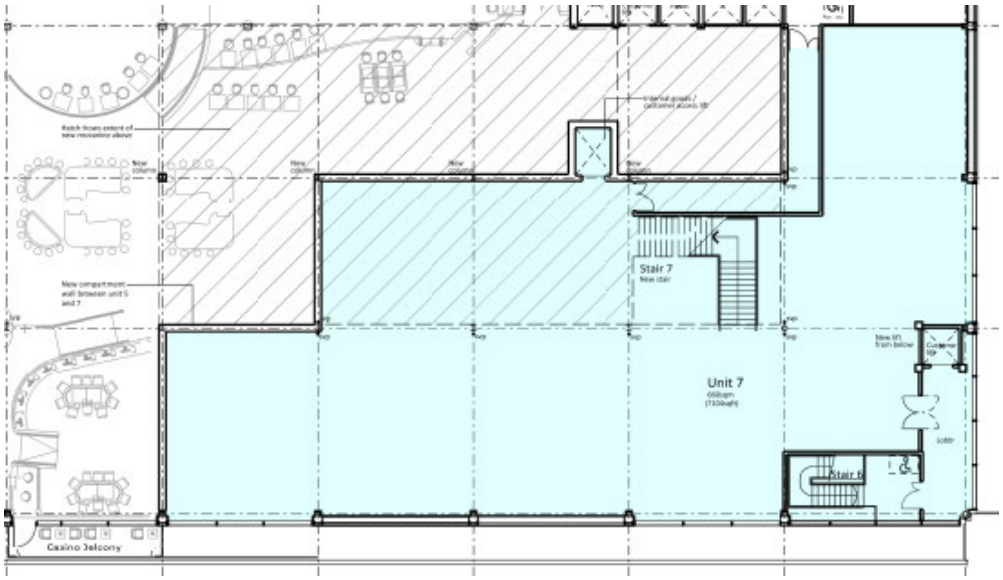


Figure 3: Proposed Development Lower Level

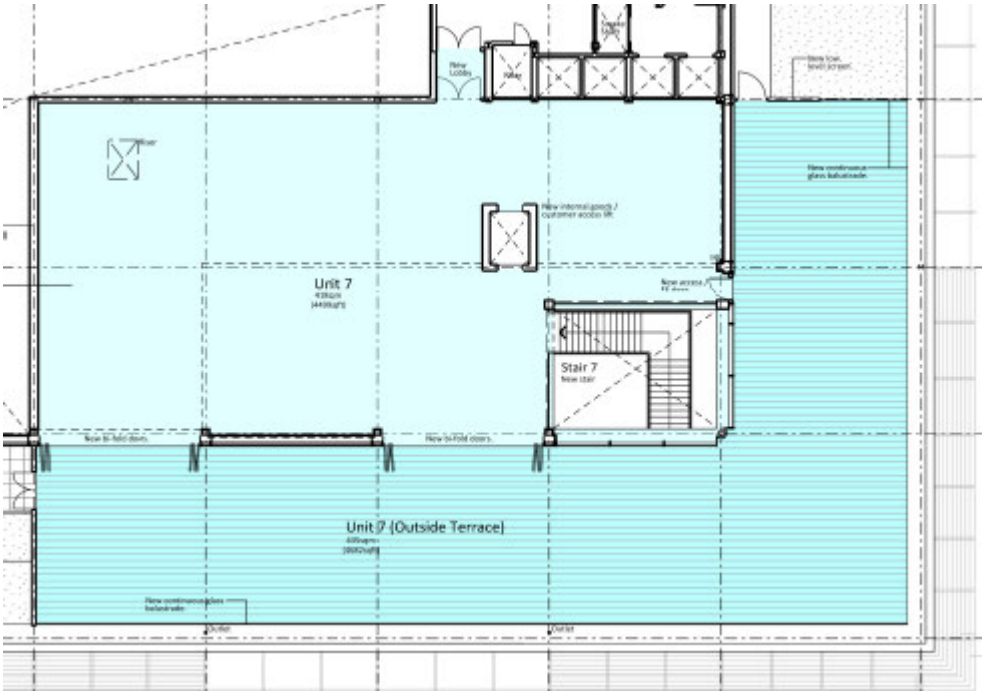


Figure 3 – Proposed Development Mezzanine

3.3. National Policy Compliance

3.3.A. Waste And Recycling

A Construction Site Waste Management Plan will be implemented by the building contractor following the industry standard Waste Hierarchy. Waste will be assessed for re-use in the development, otherwise where possible sorted on site prior to collection to minimise the use of landfill and to emphasise repurposing the waste through licensed waste companies.

3.3.B. Water

Water use for the proposed development will conform to the 125 litres per person per day limit as set in Part G of the Building Regulations. Flow limiting fittings will be fitted along with dual flush toilets and the option of rain and greywater harvesting will be further explored at the detailed design stage.

3.3.C. Materials

All new materials will generally be from sustainable sources such as FSC timber and will, for the majority, be Class A Green Guide rated or above. Emphasis will be put on the building contractor to source materials with low embodied carbon where appropriate and those materials from recycled or sustainable sources.

3.3.D. Flexibility And Adaptability

The development will be compliant with Part M of the Building Regulations and has been designed considering future flexibility and adaptability. Internal walls can be reconfigured to form new spaces and the proposed M&E system allows for the incorporation of future technologies and follows the principles set out in the Future Homes Standard Consultation.

3.3.E. ICT

The proposed development will utilise existing physical infrastructure to enable the provision of high-speed electronic communications (greater than 30Mbps) as outlined in Part R of the building regulations.

3.3.F. Layout

Natural security is provided as the proposed development is within a residential area with clear lines of sight.

4. Assessment Methodology

All assessments have been conducted using DLUHC-approved software. For this proposal, the assessments were conducted using VE Compliance

The Carbon Dioxide Emissions expressed under ‘Regulated’ within this report reflect those emission targets set out by Part L Volume 2 and are made up of the total emissions for; Heating, Hot Water, Cooling, Controls, Fans, Pumps and Lighting. These have been calculated using DLUHC-approved software. Furthermore, the Latest Carbon Figures through the Part L2 (2021) - England Methodology have been used meaning that the amount of carbon emissions per KWh is accurate

5. Energy Review

This section of the statement aims to address those policies concerned with the energy conservation/efficiency of the proposed scheme along with the considerations for using alternate and renewable technologies to achieve a 20% reduction in Carbon Emissions.

As stated in section one this section of the statement will follow the energy hierarchy;

- Use Less Energy
- Use Renewable Energy

5.1. Predicted Energy Demand

A baseline energy consumption figure has been generated for the proposed development by assessing the proposed Unit . This figure demonstrates the predicted energy consumption for the whole development against the minimum requirements of Building Regulations Part L Volume 2 2021.

	Regulated CO_2 Emissions (Kg/Yr)
Baseline: Part L2 2021 (TER)	7422.32

Table 1: Baseline Predicted Energy Consumption

As shown above, the predicted energy use for the development built to the minimum standard in Part L2 is 7422.32 Kg/year of CO_2. The following two sections outline how the proposed development will one; reduce the need for energy and two; generate energy on-site through renewable technology and comply with policy BCS14.

5.2. Low Zero Carbon Feasibility Study

A low zero carbon (LZC) feasibility study has been conducted to assess and determine the appropriateness of different technologies being integrated into the design of the proposed development. The list is not exhaustive but aims to highlight the most common and commercially viable solutions to alternate and renewable energy.

Technology	Pros	Cons	Comments	Technically Feasible
Air Source Heat Pump (ASHP)	Can provide a significant proportion of heating and cooling for most building types Can generate heat and chilled water with good efficiency ratios	Can only produce heat up to 45°C thus delivered hot water temperatures can be low and result in an increase in electric immersion heating, increasing dependency on energy use from the national grid. Efficiencies in cold weather can be very low External condenser units can be unsightly and cause some noise issues	Best Option and will be complemented by the Solar PV	Yes
Biomass Boiler	Can provide very low carbon heating and hot water Can be fitted in small and large scale opportunities, giving flexibility to use either a localised or district heating system Can form part or all of a Combined Heat And Power (CHP) System	Large plant room required to house boiler and fuel store Potentially more maintenance requirement, dependant on boiler type used Negative impact on local air quality from the emissions of the system	Could be challenging to source local fuel to maintain carbon neutral status Negative impact on local air quality Storage units would be required for an automatic pellet fed systems	No
Combined Heat & Power (CHP)	Can provide both heat and power Can be an effective contributor to overall carbon emissions reduction	Requires a significant and consistent load to be efficient Only generates power when generating heat Plant room design is more complex	Systems can be difficult to have serviced due to limited number of trained service engineers	No
Ground Source Heat Pump (GSHP)	Can provide a significant proportion of heating and cooling for most building types Can generate heat and chilled water with good efficiency ratios	Can only produce heat up to 45°C thus delivered hot water temperatures can be low and result in an increase in electric immersion heating, increasing dependency on energy use from the national grid. Expensive to install via a borehole method Requires a large amount of land for shallow depth loop systems	This would not work in the center of Bristol	No
Photovoltaics	High carbon emissions offset Relatively maintenance free and low cost installation Expected panel life in excess of 25 years Multiple mounting and orientation options available Can be combined with a battery storage system to fully utilise free electricity generation	Shading impacts generation of the system Inverter lifespan only expected to be 10 years	Will provide a considerable amount of regulated energy along with the unregulated energy demands of the proposed scheme	Yes
Solar Thermal Hot Water	Can provide a significant proportion of hot water demand Relatively low maintenance and installation cost	Does not produce enough heat during winter months to bring the cylinder up to temperature Restricted on mounting and orientation options	Maintenance and longevity issues make this technology ultimately more expensive	No
Wind Power	High carbon emissions offset Can be combined with a battery storage system to fully utilise free electricity	Produces noise and shadow flicker Need to be installed where they are free from turbulence caused by obstructions System is reliant on a consistent wind speed to generate electricity Planning permission can be difficult to obtain	The site is not suitable.	No
Hydroelectric	High carbon emissions offset Can produce electricity consistently Uses a naturally renewable source	Suitable locations can be difficult to find Restrictions from the Environment Agency and Fisheries can make the scheme unviable to install High installation and maintenance cost	No on-site water source	No
Community or District Heating	Allows a mix use of fuel sources to be utilised Reduces space required in individual units for boilers and cylinders	Requires significant space for a local community network Internal heat gains can cause overheating in communal areas District connections require considerable planning to ensure ease of connection	The proposed development is not big enough to justify creating a new network and no existing network is in the local area	No

Table 2: Low Zero Carbon Feasibility Study

Following the results of the study and considering the opportunities on site the Photovoltaic panel array system of 2KW. This is covered in section 5.4.

5.3. Use Less Energy

The client has chosen to specify materials for all thermal elements that exceed the requirement of buildings regulations resulting in the following U-Values;

	Specified	Part L2 Minimum of Improving Existing Elements
Floors	0.14	0.18
Walls	0.26	0.26
Roofs	0.18	0.18
Windows	1.6	1.6
Doors	1.6	1.6

Table 3: Building Fabric Standards

The client has chosen a solar PV system (2kW system). The hot water will be supplied by instantaneous hot water units. Low-energy lights will be fitted throughout, and the development will use mechanical extract and supply air handling units. The client is hitting the minimum required U-value limits.

5.4. Renewable Technologies

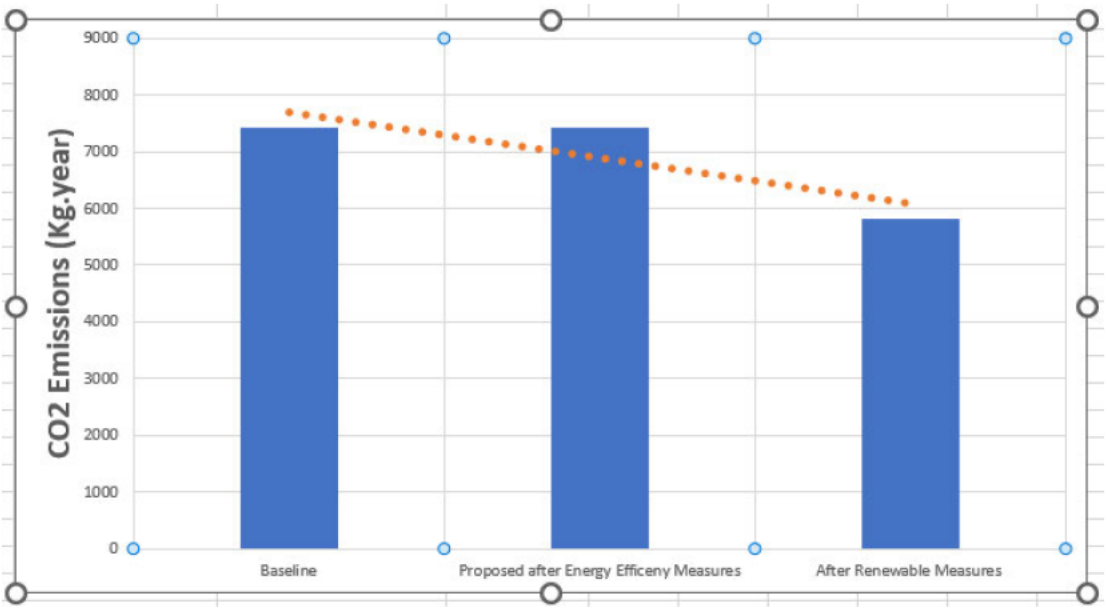
"To comply with policy BSC14"; the proposed development has considered all technologies listed in the Supplementary Planning Document, Climate Change and Sustainability. From the initial design considerations and the results of the "LZC Feasibility Study" the proposal is to use a Photovoltaic panel array system orientated south to achieve the required 20% reduction in carbon emissions.

On this basis the showing table 5 figures were achieved.

		FILL IN THIS ROW	DO NOT EDIT!	
	Regulated Energy Demand (kWh/yr)	Regulated CO2 emissions (kgCO2/yr)	CO2 saved (kgCO2/yr)	% CO2 reduction
Baseline emissions - Building Regulations Part L compliance (equivalent to the Target Emissions Rate TER for new build, or building regulations compliant BER for existing buildings)		7422.32		
Proposed scheme after energy efficiency measures		7422.32	0	0%
Proposed scheme after energy efficiency AND CHP/DH. If no CHP/DH this is the same as above (RESIDUAL EMISSIONS)		7422.32	0	0%
Proposed scheme after on-site renewables		5806.58	1615.74	22%
Total CO2 reduction beyond baseline emissions			1615.74	**22%**

Table 5: Predicted Energy Consumption After Renewable Energy

As shown , by assessing the proposed development with Low to zero carbon technologies such as Solar PV panels and will provide a saving of 1615.74 $KgC0_2$ /year equating to a 22% saving on Baseline Emissions. This proposal meets the minimum 20% reduction in carbon emissions and allows for future reduction in carbon emissions with the potential for connection to a heat network if one was to be created locally.

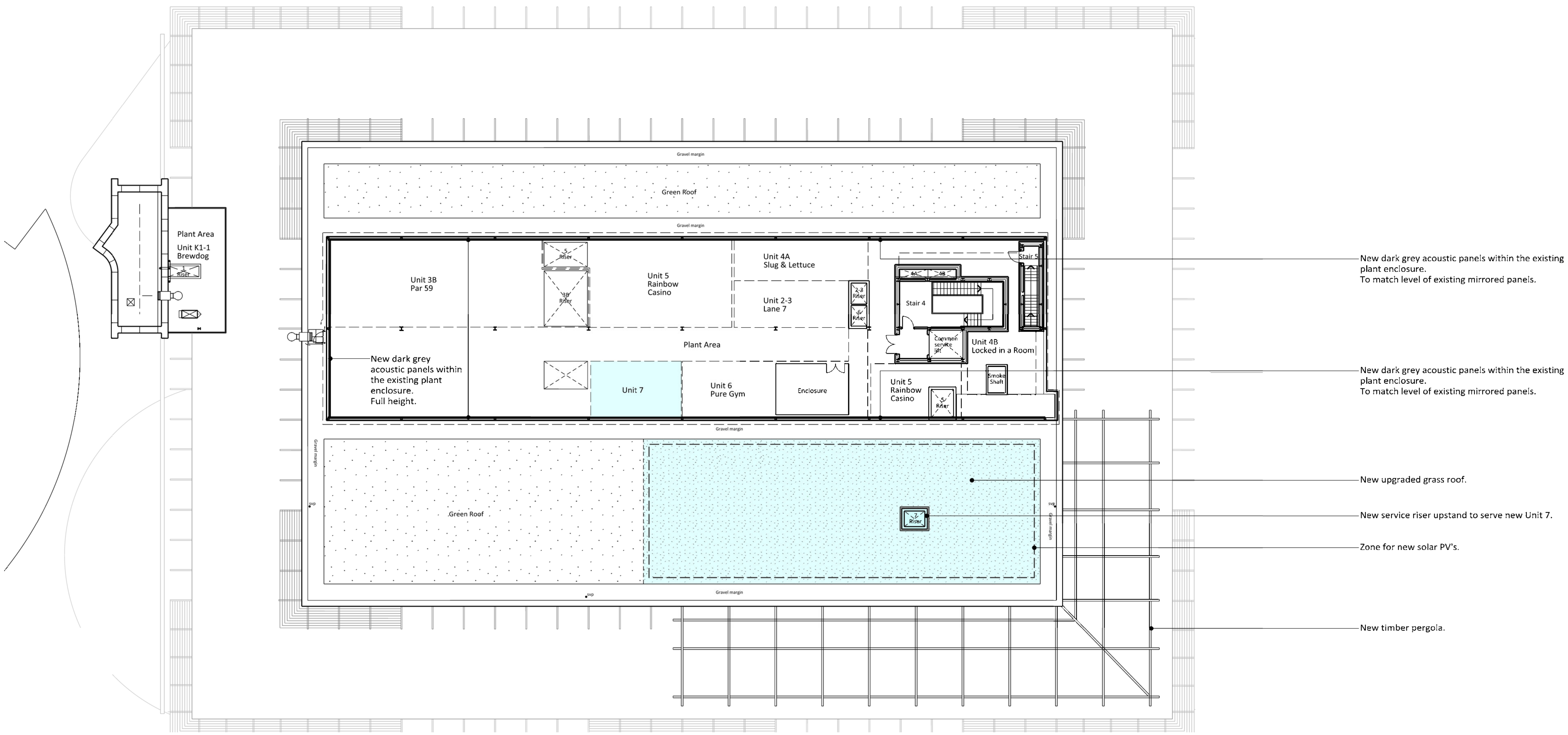


6. Conclusion

In conclusion we consider the proposals to meet the requirements of the National Policy guidelines along with meeting the specific requirements of Policy BCS14 of Bristol City Council's Development Framework Core Strategy. This has been demonstrated by modelling the proposed Unit and providing calculated figures for the predicted energy demand, CO_2 emissions and the reduced energy demand, CO_2 emissions after renewables.

Appendix 2

Level 4 Proposed, illustrating PV area/cells,
for approved Application 1 and Application 2



Harbour View Bristol

Drawing title
Level 4 Proposed

Amendments

Drawing No.
3716-HAR-SRA-XX-XX-DR-A-PL-026
Project No. Location Originator Volume Level File Type Disc System Number

Revision

Drawn by	Checked by	A1 Scale	Date	Reason for Issue
GD	MR	1:200	27/02/2023	PLANNING

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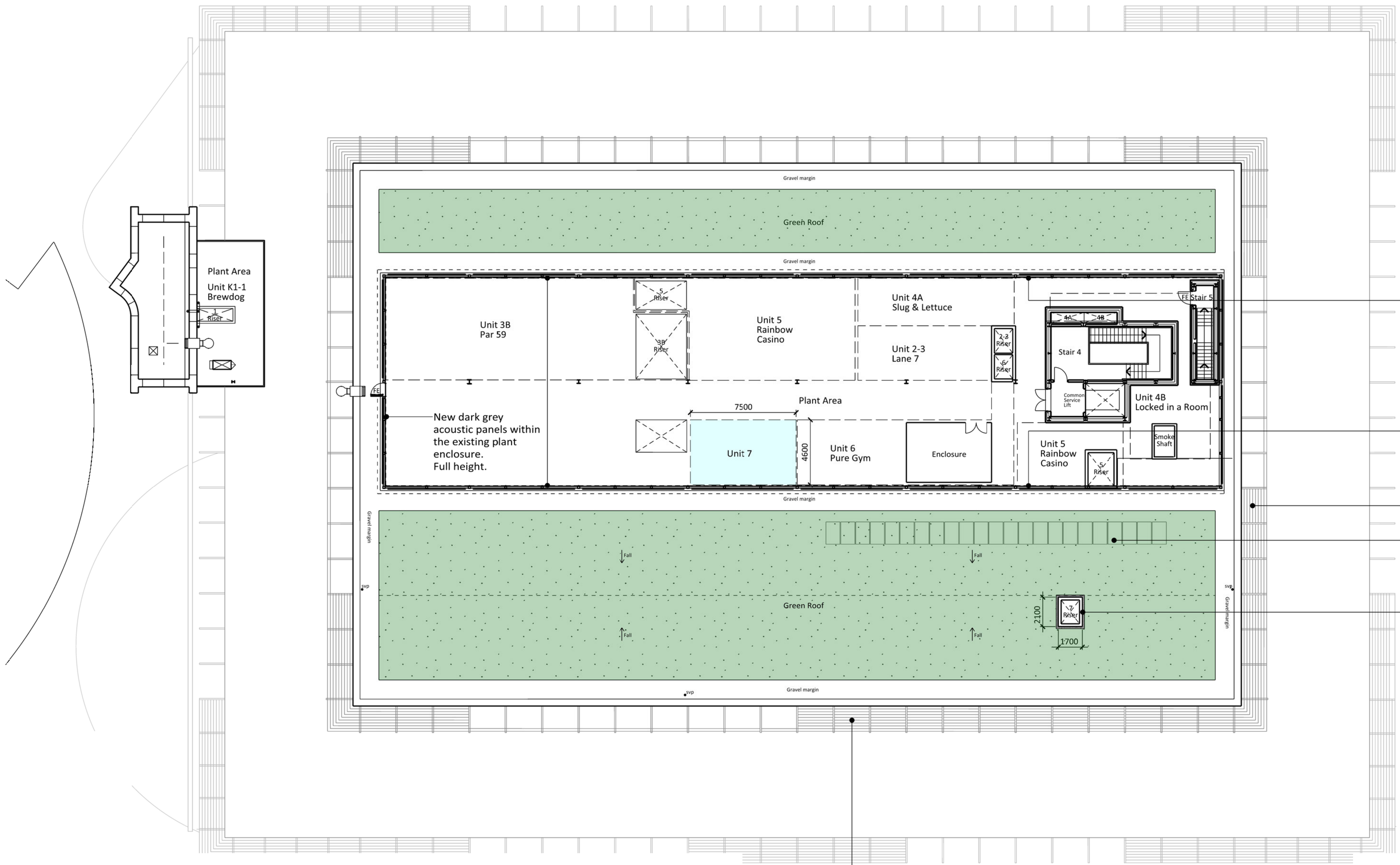

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Harbour View Bristol

Drawing title
Level 4 Proposed

Amendments

Drawing No.
3716-HAR-SRA-XX-XX-DR-A-PL-026
Project No. Location Originator Volume Level File Type Disc. System Number

Revision
P1

Drawn by	Checked by	A1 Scale	Date	Reason for Issue
GD	MR	1:200	20/11/2023	PLANNING

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Appendix 3

Copy of cover of Core Strategy

Bristol Development Framework

Core Strategy

Adopted June 2011

Bristol City Council