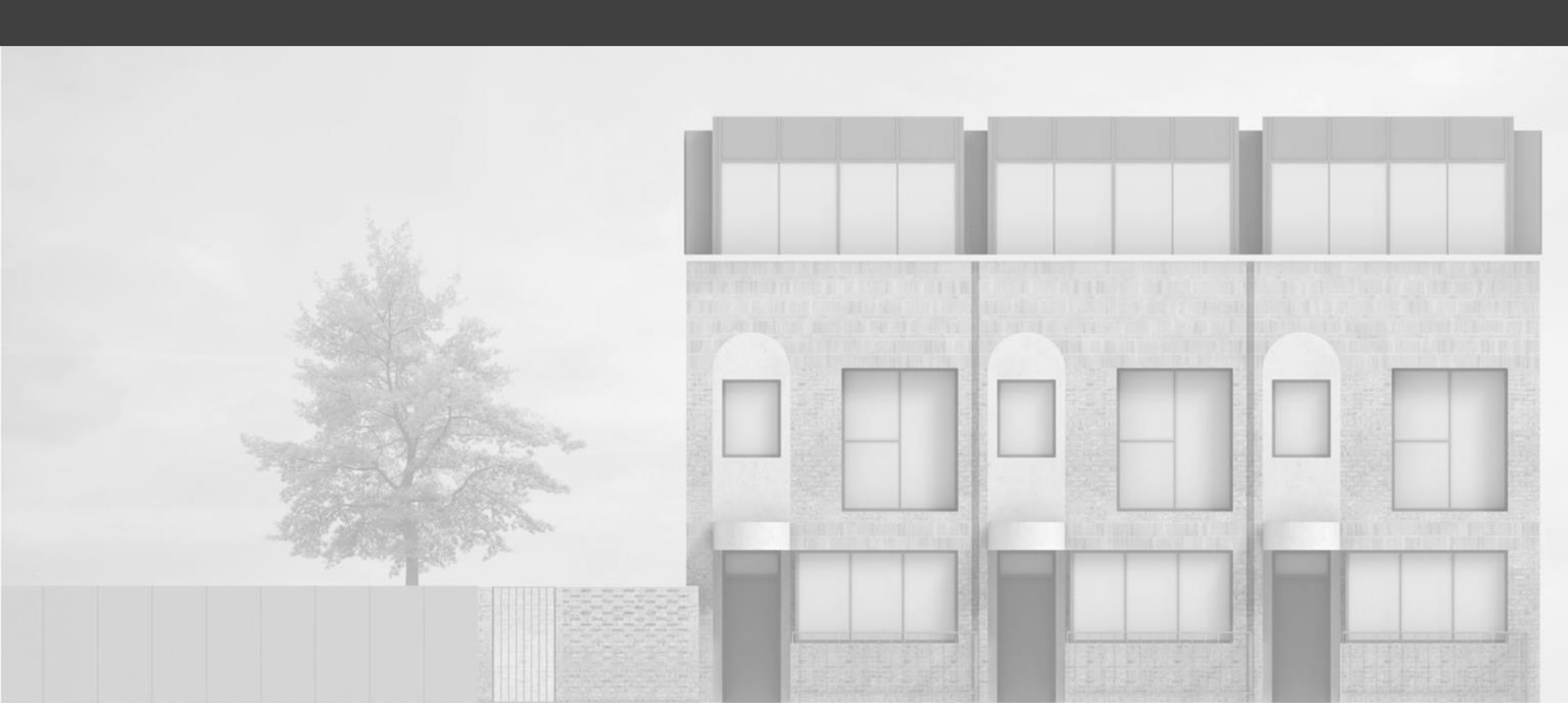




SUSTAINABILITY STATEMENT - MARCH 2024

24 AND 26 MAIDSTONE ROAD, LONDON, N11 2TL



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24 and 26 Maidstone Road, London, N11 2TL
BIODIVERSITY STATEMENT

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1.0 RESPONSE TO COUNCIL COMMENTS



1.0 ECOSTUDIO XV LTD RESPONSE TO HARINGEY COUNCIL COMMENTS

HARINGEY COUNCIL COMMENT

Planning Application consultation: Carbon Management Response 23/08/2023

Objection Detail.

1. Set out what urban greening and biodiversity enhancement measures will be proposed (e.g. green infrastructure, bird boxes, bat boxes etc to connect to the green spaces around the site, living roofs, living walls, etc.)

ECOSTUDIO XV RESPONSE: An integrated approach has been developed that includes the following measures:

Green Infrastructure: Implementation of flower rich perennial planting, amenity grassland, hedges, native hedgerow and retained trees.

Habitat Creation: Installation of bird and bat boxes to support local fauna, alongside native planting schemes to enhance flora diversity.

Living Roofs and Walls: Incorporation of living roofs to increase green space and serve as habitats for various species.

These initiatives aim to create a cohesive network of green spaces that not only enrich biodiversity but also contribute to the well-being of the community.

HARINGEY COUNCIL COMMENT

2. A target (%) for responsible sourced, low-impact materials used during construction.

ECOSTUDIO XV RESPONSE: In alignment with the sustainability objectives outlined in the Local Plan, our construction project is dedicated to utilizing responsibly sourced, low-impact materials. We are targeting a minimum of 60% for such materials, which will contribute significantly to the reduction of environmental impact and support the council's vision for sustainable development.

This commitment is in line with the key principles of "low impact" as emphasized in the plan, ensuring that our construction practices promote ecological balance and resource efficiency.

HARINGEY COUNCIL COMMENT

3. Set out how any demolition materials can be reused.

ECOSTUDIO XV RESPONSE: Demolition materials will be negligible as the site is currently open space. The only existing element to remove would be the timber fence, which will be donated or reused as necessary.



2.0 EXECUTIVE SUMMARY



2.0 EXECUTIVE SUMMARY

OVERALL SUSTAINABILITY

The purpose of this report is to demonstrate compliance against, policy DM21 of the Development Management Document sustainable design, layout and construction techniques. This Sustainability Statement now includes proposed measures to improve sustainability of the scheme including:

- Transport
- Health and Wellbeing
- Materials and Waste
- Water Consumption (Please refer to SUDs Strategy Report, issued under separate cover)
- Flood Risk and Drainage (Please refer to SUDs Strategy Report, issued under separate cover)
- Biodiversity and Landscape Design,
- Climate resilience (Please refer to Energy Statement- Overheating Checklist)
- Energy and CO2 emissions (Please refer to the Energy Statement, issued under separate cover)

The measures incorporated to the design in order to improve sustainability include:

- Green areas including: Flower rich perennial planting, amenity grassland, hedges, native hedgerow, retained trees, and Intensive green roof with minimum substrate of 100mm
- Internal Water Use reduction.
- 3no x 100 l rainwater butt for re-use.
- 3no x 1000 l rainwater tank for re-use
- Energy Efficiency Measures with 50% improvement beyond Approved Document L
- Triple glazed windows
- Underfloor Heating via ASHP
- 7no PV panels
- Low environmental impact of materials with their majority responsibly sourced.

URBAN GREENING FACTOR

Overall, the scheme achieves an Urban Greening Factor of **0.67**, thus meets the target published by Haringey Site Allocations Development Plan Document (2022) which is 0.4 for predominately residential schemes. The scheme has maximised biodiversity wherever possible with green roofs and a wildlife-planting led amenity space on the ground floor.

TABLE 01 – FINAL URBAN GREENING FACTOR SCORES

URBAN GREENING FACTOR	
EXISTING – PRE-DEVELOPMENT	0.53
PROPOSED DEVELOPMENT	0.67

This is an enhancement on the existing site which is entirely green field site. Therefore, compliant with the aims of Policy G5 of The London Plan (2021).

BIODIVERSITY NET GAIN

Biodiversity Metric 4.0 is a biodiversity accounting tool that can be used for the purposes of calculating biodiversity net gain. The metric calculates the values as biodiversity units. The metric assesses existing habitats and planned new habitats created by a development or land change.

The proposed habitat described above results in a total unit change of **0.10**, which trading rules satisfied.

Biodiversity Metric 4.0 is a biodiversity accounting tool that can be used for the purposes of calculating biodiversity net gain. The metric calculates the values as biodiversity units. The metric assesses existing habitats and planned new habitats created by a development or land change.

The proposed habitat described above results in a total net change in habitat units of **25.09%**, and **10.86%** of hedgerow units.

Therefore, the proposed development will comply with the London Plan requirements for both UGF and BNG.

TABLE 02 – TOTAL UNIT NET CHANGES

BIODIVERSITY NET GAIN	
ON - SITE HABITAT BASELINE	0.19
ON - SITE HABITAT CREATION	0.24
TOTAL NET UNIT CHANGE IN HABITAT UNITS	0.05
TOTAL NET % CHANGE IN HABITAT UNITS	25.09%
TOTAL NET UNIT CHANGE IN HEDGEROW UNITS	0.01
TOTAL NET % CHANGE IN HEDGEROW UNITS	10.86%



3.0 SUSTAINABILITY MATRIX



3.0 SUSTAINABILITY MATRIX

TABLE 03 – SUSTAINABILITY MATRIX



CATEGORY	ISSUE	DESIGN RESPONSE	STATUS
ENERGY AND ATMOSPHERE	CLIMATE CHANGE DUE TO GREENHOUSE GAS EMISSIONS.	- Energy Efficiency measures beyond Approved Document L of Building Regulations, Volume 1: Dwellings, 2021 Edition - High levels of insulation 40 to 50% better than the maximum allowed by Approved Document L of Building Regulations. - Good levels of air tightness (50% better than Approved Document L)	Required to comply with Energy Hierarchy
	MAXIMIZE PASSIVE DESIGN DUE TO CLIMATE CHANGE (DRIER HOTTER SUMMERS, WETTER WINTERS)	Orientation and passive design including: - Good levels of daylighting in all habitable rooms. - Maximize exposed internal thermal mass in the form of precast concrete slabs, solid ground floor / screed, medium dense blockwork internal partitions and Durisol blocks. - Natural ventilation with mechanical extract in wet rooms - Forced mechanical extract in rooms that cannot have cross ventilation.	Approved by vPPR Architects.
	URBAN HEAT ISLAND EFFECT, WITH THE CHALLENGE TO COOL BUILDINGS IN SUMMER MONTHS	- Green areas. - Natural ventilation with mechanical extract in wet rooms and habitable rooms without cross ventilation.	Approved vPPR Architects.
	RENEWABLE ENERGY GENERATION	On site renewable energy production 1no ASHP per dwelling 7no PV panels of 450W each: 0.45 kWp x 7 = 3.15 kWp per house This equates = 9.45 kWp in total per 3 houses	Required to comply with London Plan and Haringey Local Plan.



3.0 SUSTAINABILITY MATRIX

TABLE 03 – SUSTAINABILITY MATRIX



CATEGORY	ISSUE	DESIGN RESPONSE	STATUS
TRANSPORT	REDUCE THE NEED OF TRANSPORT WITH PRIVATE CARS.	- Good location with access to good local amenities in less than 3no minutes walking distance. - Good location with access to public transport with 500m distance to bus stops with frequent services. - Private, secure and weatherproof cycle storage with 6 cycle spaces, with direct access from the outside.	Confirmed and incorporated to the Design by vPPR Architects.
WATER	POTABLE WATER USE REDUCTION.	- Potable water consumption reduction via highly efficient fittings and rainwater harvesting. London requests Internal potable water use equivalent to be less than 105 litres / person /day. This is equivalent to Level 4 of Code for Sustainable Homes. - The proposed development is estimated to have internal water consumption, of 94.36 l/p/day. - Including rainwater harvesting the internal potable water use is estimated to be around 61 l/p/day.	Required to comply with The Sustainable Design and Construction Supplementary Planning Guidance, Mayor of London, April 2014
SURFACE WATER RUN OFF	CLIMATE CHANGE WITH EXTREME WEATHER EVENTS SUCH AS FLOODING.	- The SUDs strategy and storage will achieve a surface water discharge below green field run off rates.	Required to comply with The Sustainable Design and Construction Supplementary Planning Guidance, Mayor of London, April 2014.

3.0 SUSTAINABILITY MATRIX

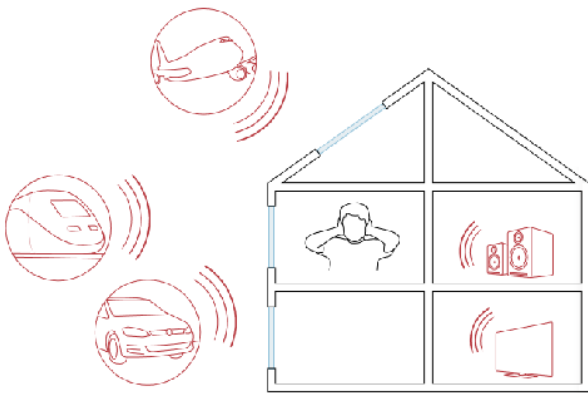
TABLE 03 – SUSTAINABILITY MATRIX



CATEGORY	ISSUE	DESIGN RESPONSE	STATUS
WASTE	WASTE MANAGEMENT	- Internal and external areas for recyclable waste	Required to comply with The Sustainable Design and Construction Supplementary Planning Guidance, Mayor of London, April 2014.
	CONSTRUCTION WASTE REDUCTION	- Design development up to RIBA Stage 3 to use industry standard dimensions for main building elements to reduce construction waste. - Construction Waste Management plan to be carried out and followed during construction.	Required to comply with The Sustainable Design and Construction Supplementary Planning Guidance, Mayor of London, April 2014.
HEALTH AND WELLBEING	PROVIDE A PRIVATE OR SEMI-PRIVATE AREA FOR ALL OCCUPANTS TO SIT OUTSIDE.	- External private amenity for all houses.	Approved by vPPR Architects.
	INTERNAL DAYLIGHTING and SUNLIGHT ACCESS	- Good levels of internal daylighting with all of the rooms meeting or exceeding the minimum requirements as per the BRE Guidelines for average daylight factor.	Required to comply with The Sustainable Design and Construction Supplementary Planning Guidance, Mayor of London, April 2014.
	SOUND INSULATION	- Triple glazed sound insulated windows - All party walls to comply with Approved Document E, resistance to the passage of sound of Building Regulations.	Approved by vPPR Architects.

3.0 SUSTAINABILITY MATRIX

TABLE 03 – SUSTAINABILITY MATRIX



CATEGORY	ISSUE	DESIGN RESPONSE	STATUS
BIODIVERSITY	ECOLOGICAL IMPACT ASSESSMENT and PROTECTED SPECIES SURVEY	The development was designed avoiding adverse impact to the biodiversity interest, minimizing impact and seeking mitigation. The Urban Green factor of 0.67 and a Biodiversity Net Gain of 10% will be achieved.	Required to comply with The Sustainable Design and Construction Supplementary Planning Guidance, Mayor of London, April 2014.
POLLUTION	NOISE	- Triple glazed sound insulated windows with acoustic film - Doors and walls insulated - Seal air gaps around windows - The ASHP sound levels are under 58 dBA.	Approved by vPPR Architects.



4.0 SUSTAINABILITY STATEMENT



4.0 SUSTAINABILITY STATEMENT

Development proposals of any scale are required to demonstrate sustainability principles in a supporting statement. The information provided should be proportionate to the scale of the proposed development and its likely impact on , and vulnerability to climate change.

To demonstrate compliance against climate change and environmental performance, this report has made reference to

- Haringey Local Plan
- Approved Document L of Building Regulations, Volume 1: Dwellings v 2021

The above documents set out policies and requirements for new developments in London, including sustainability requirements. The sustainability requirements depend on several factors, such as the location of the site, the size of the development, and the proposed use of the building. However, some general sustainability requirements that would apply include:

ENERGY EFFICIENCY:

The building should be designed to be energy-efficient, with a focus on reducing carbon emissions and energy consumption. This could include using low-energy lighting, insulation, and energy-efficient heating and cooling systems.

WATER EFFICIENCY:

The building should be designed to minimize water consumption, with measures such as low-flow fixtures, and rainwater harvesting.

SUSTAINABLE MATERIALS:

The building should be constructed using sustainable materials wherever possible, such as recycled or locally sourced materials.

BIODIVERSITY:

The development should incorporate green spaces and encourage biodiversity, with features such as green roofs, wildlife habitats, and planting schemes.

WASTE REDUCTION:

The building should be designed to minimize waste production, with measures such as recycling facilities and composting.

TRANSPORT:

The development should encourage sustainable modes of transport, such as cycling, walking, and public transport, and provide facilities for these modes of transport.

AIR QUALITY:

The building should be designed to minimize air pollution, with measures such as green walls, air filtration systems, and the use of low-emission materials.

ADAPTATION TO CLIMATE CHANGE:

The building should be designed to be resilient to the effects of climate change, with measures such as flood-resistant design and the use of sustainable drainage systems.

HEALTH AND WELLBEING:

The building should be designed to promote the health and wellbeing of occupants, with features such as natural ventilation, access to daylight and views, and the use of non-toxic materials

The proposed development complies and follows the strategic objectives to tackle and adapt to climate change as per the above guidance documents including:

DESIGN AND CONSTRUCTION

- Encourage the highest standards of sustainable design and construction, including
 - Efficient use of natural resources
 - Minimize pollution
 - Minimize generation of waste, and maximizing reuse or recycling
 - Secure sustainable procurement of materials, using local supplies where feasible
 - Promote and protect biodiversity.

CLIMATE CHANGE &

- Adapt to the effects of climate change including
 - Flood risk,
 - Protection of the supply of water.
 - Proposed design to reduce heat island effect as well as overheating.

LONDON PLAN COOLING HIERARCHY

- The proposed development has followed the cooling hierarchy as follows:
 - Minimize internal heat gains through energy efficient design.
 - Reduce the amount of solar heat gain in summer through orientation, external shading, albedo, fenestration, insulation and green roofs.
 - Manage heat within the building through exposed internal thermal mass and high ceilings.
 - Passive cross ventilation.



4.0 SUSTAINABILITY STATEMENT

URBAN GREENING FACTOR (UGF)

The UGF is a planning tool designed to evaluate how green a building is. It is used by local authorities when assessing development of the built environment. This major policy initiative is set out in the New London Plan to increase green cover of cities. The aims of the UGF include to:

- Accelerate greening of the built environment
- Making sure London is greener as it grows
- Ensure better planned, better quality greening interventions that contribute to a functioning GI network
- Improve biodiversity
- Reduce rainwater run-off
- Improve carbon sequestration
- Reduce air and noise pollution
- Regulate urban temperature

BIODIVERSITY NET GAIN

Biodiversity net gain (BNG) is a way of creating and improving natural habitats. BNG makes sure development has a measurably positive impact ('net gain') on biodiversity, compared to what was there before development.

Developers must deliver a biodiversity net gain of 10%. This means a development will result in more or better quality natural habitat than there was before development.

A habitat will contain a number of biodiversity units, depending on things like its:

- Size
- Quality
- Location

Biodiversity units can be lost through development or generated through work to create and enhance habitats.

FIGURE 01 – ROOF COMBINING PV PANELS AND WILDFLOWER BLANKET



UGF target scores should be set out in Local Plans. Where Local Plans do not have UGF scores, the London Plan UGF scores of 0.4 for predominately residential developments and 0.3 for predominately commercial developments should be applied.

The UK Government has announced that Biodiversity Net Gain (BNG) will become mandatory in England for new developments. UGF will be delivered onsite and must still be met; even if, for BNG, a developer is looking to offsite solutions.

Urban greening will become an integral consideration of new developments and the successful execution of these projects will require the involvement of landscape design early on in the process.

5.0 POLICY FRAMEWORK



5.0 POLICY FRAMEWORK – URBAN GREENING FACTOR

The proposed development falls within the Planning Category of Government “major” category of planning applications.

POLICY CONTEXT

The Urban Greening Factor (UGF) is a regional planning tool that is used to evaluate the quality and quantity of urban greening on development sites that can produce positive impacts to biodiversity by introducing new habitat. It enables major developments to calculate and demonstrate how urban greening has been included as a fundamental element of site and building design by assigning a factor score to different surface cover types.

UGF is calculated by categorising different types of greening that can be incorporated into development by surface cover types, which broadly indicate their relative quality. The UGF assigns a factor score to each surface cover type, which are weighted based on their potential for rainwater infiltration. Scores range from 1 for semi natural vegetation through to 0 for impermeable sealed surfaces. The total score is calculated by adding up.

POLICY CONTEXT

Policy G5 – Urban Greening Factor

- A. Major development proposals should contribute to the greening of London by including urban greening as a fundamental element of site and building design, and by incorporating measures such as high-quality landscaping (Including trees), green roofs, green walls and nature-based sustainable drainage.
- B. Boroughs should develop an Urban Greening Factor (UGF) to identify the appropriate amount of urban greening required in new developments. The UGF should be based on the factors set out in Table 8.2: Urban greening factors, but tailored to local circumstances. In the interim, the Mayor recommends a target score of 0.4 for developments that are predominately residential, and a target score of 0.3 for predominately commercial developments.

In the case of mixed-use developments, the use class with the highest square meterage of floorspace should be used to determine the target UGF score and the appropriate target agreed with the borough.

- C. Existing green cover retained on site should count towards developments meeting the interim target scores set out in (B) based on the factors set out in Table 8.2.

The current reference document for Urban Greening Factor is London Plan Guidance dated February 2023. Contained within this document is:

- Definition of Urban Greening Factor
- How to apply the Urban Greening Factor
- Calculation methodology
- How to submit the required information
- Guidance for Local Authorities

To supplement this document and the requirements, there is also a Spreadsheet (v1 – March 2021) published by the GLA to assist in determining the Urban Greening Factor and whether the figure is compliant with the required target.



5.0 POLICY FRAMEWORK – BIODIVERSITY NET GAIN

BIODIVERSITY NET GAIN

In England, Biodiversity net gain is becoming mandatory under Schedule 7A of the Town and Country Planning Act 1990 (as inserted by Schedule 14 of the Environment Act 2021):

The biodiversity gain objective is met in relation to development for which planning permission is granted if the biodiversity value attributable to the development exceeds the pre-development biodiversity value of onsite habitat by at least the relevant percentage.

The biodiversity value attributable to the development is the total of:

- The post-development biodiversity value of the onsite habitat,
- The biodiversity value, in relation to the development, of any registered offsite biodiversity gain allocated to the development, and
- The biodiversity value of any biodiversity credits purchased for the development.

The relevant percentage is 10%

There is a formula that calculates:

How many units an habitat contains before development

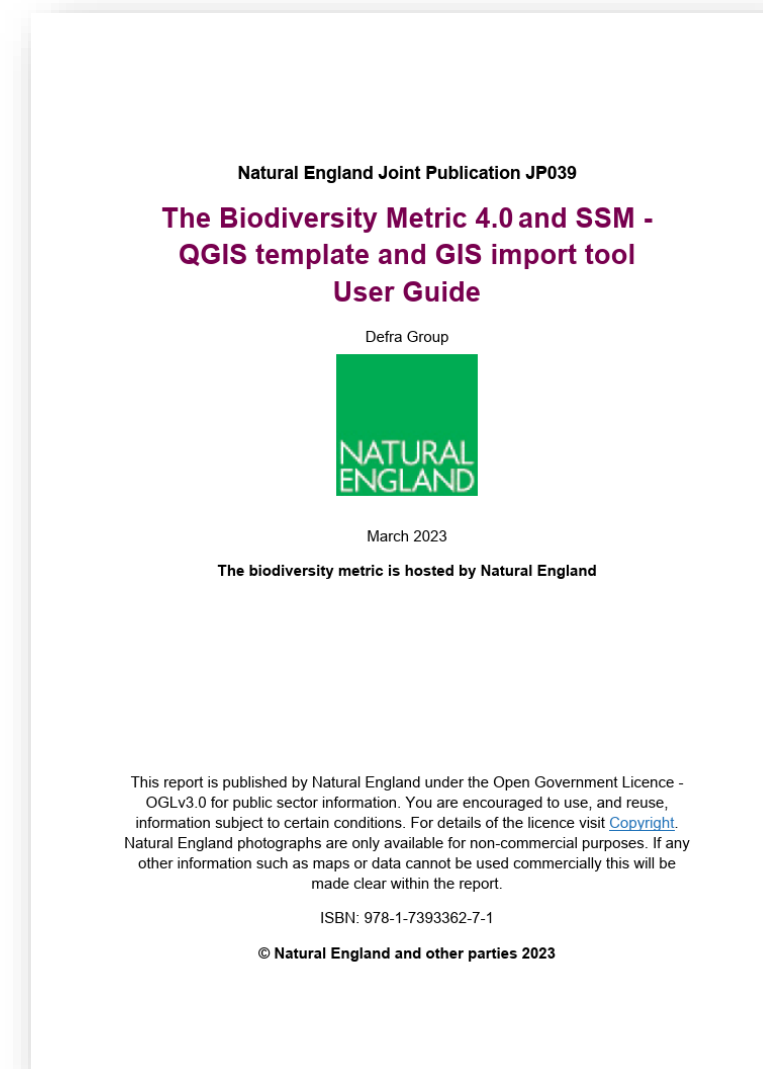
How many units are needed to replace the units of habitat lost and to achieve 10% BNG.

This formula is called the statutory biodiversity metric.

There are 3 ways a developer can achieve 10% BNG:

They can enhance and restore biodiversity on-site (within the red line boundary of a development site).

- If developers can only achieve part of their BNG on-site, they can deliver through a mixture of on-site and off-site. Developers can either make off-site biodiversity gains on their own land outside the development site, or buy off-site biodiversity units on the market.
- If developers cannot achieve on-site or off-site BNG, they must buy statutory biodiversity credits from the government. This must be a last resort. The government will use the revenue to invest in habitat creation in England.



6.0 EXISTING CONDITIONS & URBAN GREEN FACTOR CALCULATIONS



6.0 EXISTING CONDITIONS AND URBAN GREEN FACTOR CALCULATIONS

Figure 2 shows the site location plan of the site boundaries and the surrounding areas.

The land lies behind Victorian semi-detached houses at no.24 and no.26 Maidstone Road. It is bounded by Oak Lane to its south-east, post-war housing block Haywood Court to its north-east, garages at Deanswood Court to its north-west and the houses of no.24 and no.26 Maidstone Road to its south-west.

The pavement on Oak Lane adjacent to the site has a dropped kerb to the east. The land used to have garages, which have been demolished, leaving the site vacant. The site is currently bounded by a hoarding fence.

The surrounding open spaces typically have pond and species rich meadows, and are home to various plants and animals such as:

- Wildflowers, such as cowslips, ox-eye daisies, knapweed, and yellow rattle
- Butterflies, such as peacock, red admiral, small tortoiseshell, and speckled wood
- Bees, such as bumblebees, honeybees, and solitary bees
- Birds, such as blackbirds, blue tits, great tits, robins, and wrens
- Bats, such as common pipistrelle, soprano pipistrelle, and noctule

The project proposes a simple, robust landscaping strategy. The rear gardens are planted with grass and wildflowers. The communal area is permeable resin-bound gravel with brick edge details. Existing trees are located to the rear of the site where the gardens are proposed for each unit. **These trees will be retained to provide shade and biodiversity for the houses.**

The land is mainly covered in amenity grassland with some shrubs, hedges and young trees. The land has an existing area of 399.85 m²

FIGURE 02 – AERIAL VIEWS OF THE SITE AS EXISTING AND ITS SURROUNDINGS.



6.0 EXISTING CONDITIONS AND URBAN GREEN FACTOR CALCULATIONS

FIGURE 03 – AERIAL VIEWS OF THE SITE AS EXISTING AND ITS SURROUNDINGS.



Aerial view of the site as existing, taken on June 03, 2022, from Google Earth.

FIGURE 04 – FRONT VIEW OF THE SITE AS EXISTING



Front view of the site as existing, taken on March, 2022, from Google Earth.

6.0 EXISTING CONDITIONS AND URBAN GREEN FACTOR CALCULATIONS

FIGURE 05 – SITE PLAN AS EXISTING – DRAWING BY VPPR ARCHITECTS

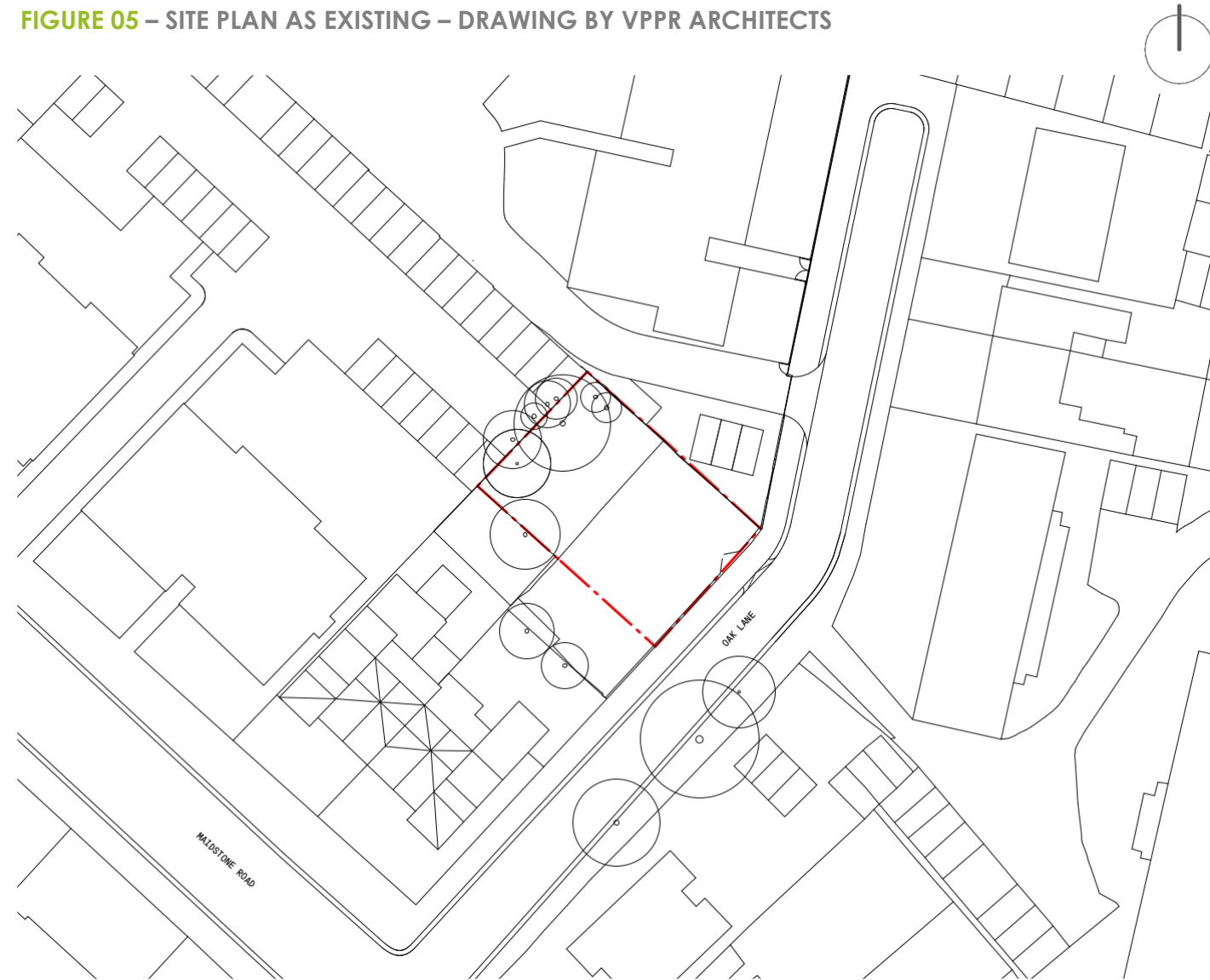
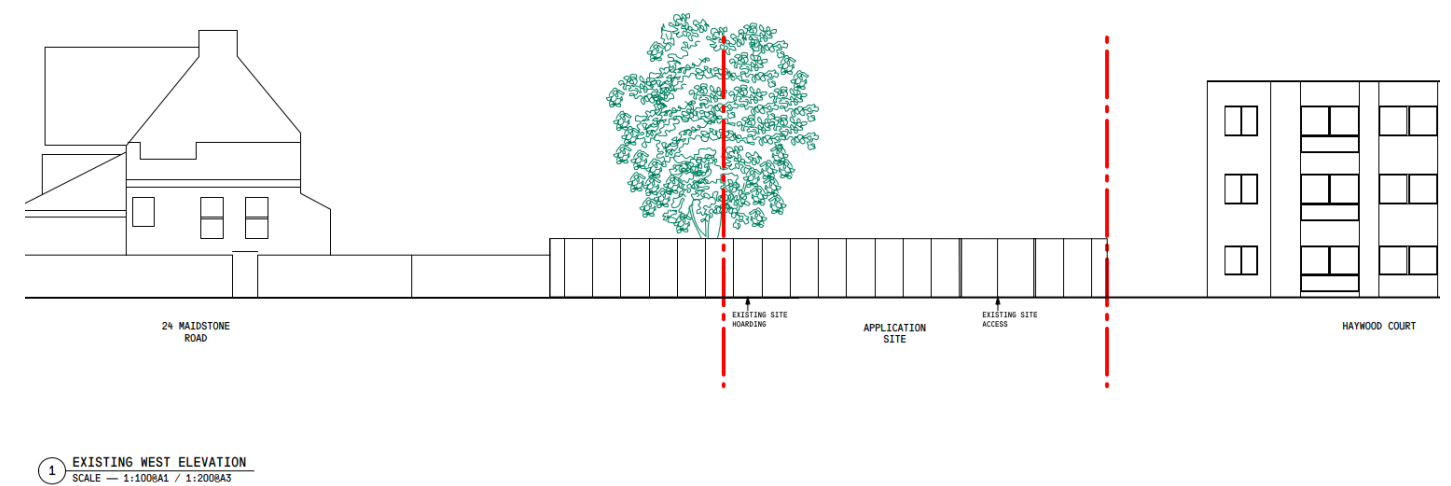


FIGURE 06 – FRONT ELEVATION OF THE SITE AS EXISTING - DRAWING BY VPPR ARCHITECTS



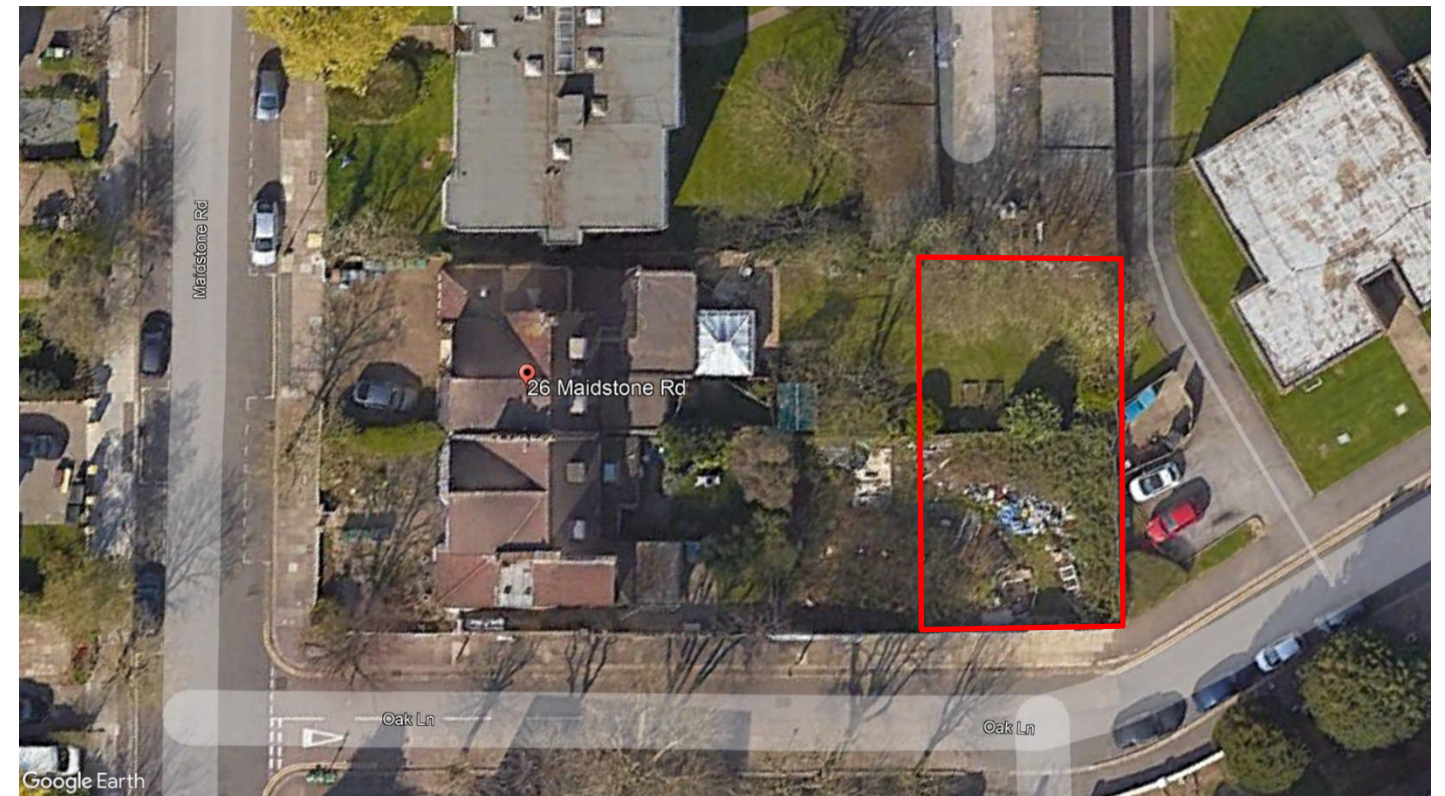
6.0 EXISTING CONDITIONS AND URBAN GREEN FACTOR CALCULATIONS

FIGURE 07 – AERIAL VIEWS OF THE SITE AS EXISTING



Aerial view of the site as existing, taken on June 03, 2022, from Google Earth.

FIGURE 08 – AERIAL VIEWS OF THE SITE AS EXISTING



Aerial view of the site as existing, taken on June 03, 2022, from Google Earth.

6.0 EXISTING CONDITIONS AND URBAN GREEN FACTOR CALCULATIONS

TABLE 04 – URBAN GREENING FACTOR CALCULATOR-EXISTING

Urban Greening Factor Calculator				
Surface Cover Type	Urban Greening Factor	Area (m²)	Contribution	Notes
Semi-natural vegetation (e.g. trees, woodland, species-rich grassland) maintained or established on site.	1	131.41	131.41	Ground floor - rear of the site
Wetland or open water (semi-natural; not chlorinated) maintained or established on site.	1	0	0	
Intensive green roof or vegetation over structure. Substrate minimum settled depth of 150mm.	0.8	0	0	
Standard trees planted in connected tree pits with a minimum soil volume equivalent to at least two thirds of the projected canopy area of the mature tree.	0.8	0	0	
Extensive green roof with substrate of minimum settled depth of 80mm (or 60mm beneath vegetation blanket) – meets the requirements of GRO Code 2014.	0.7	0	0	
Flower-rich perennial planting.	0.7	0	0	
Rain gardens and other vegetated sustainable drainage elements.	0.7	0	0	
Hedges (line of mature shrubs one or two shrubs wide).	0.6	0	0	
Standard trees planted in pits with soil volumes less than two thirds of the projected canopy area of the mature tree.	0.6	0	0	
Green wall –modular system or climbers rooted in soil.	0.6	0	0	
Groundcover planting.	0.5	0	0	
Amenity grassland (species-poor, regularly mown lawn).	0.4	199.16	79.664	
Extensive green roof of sedum mat or other lightweight systems that do not meet GRO Code 2014.	0.3	0	0	
Water features (chlorinated) or unplanted detention basins.	0.2	0	0	
Permeable paving.	0.1	0	0	
Sealed surfaces (e.g. concrete, asphalt, waterproofing, stone).	0	200.69	0	
Total contribution			211.074	
Total site area (m²)			399.85	
Urban Greening Factor			0.53	

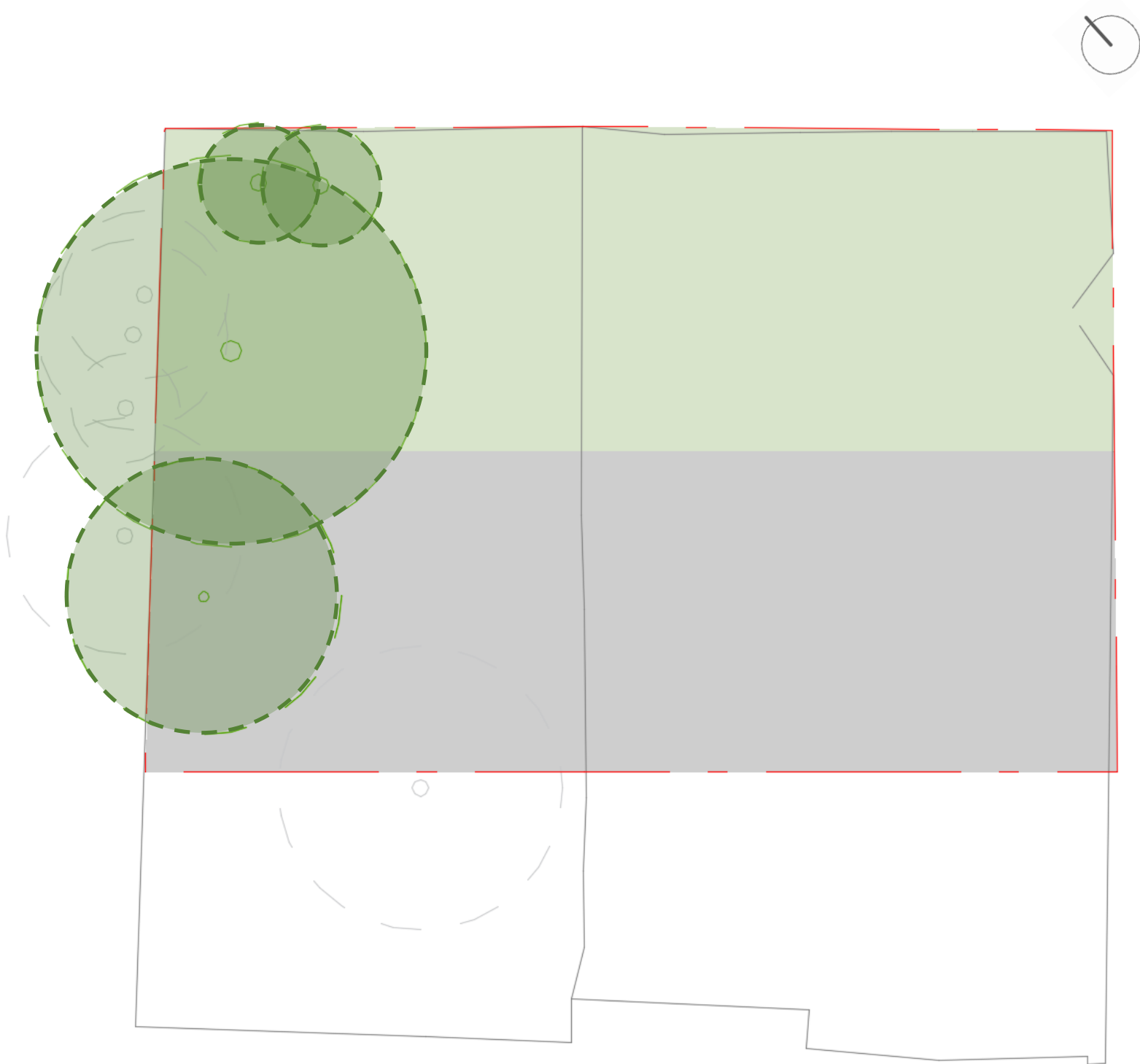
6.0 EXISTING CONDITIONS AND URBAN GREEN FACTOR CALCULATIONS

FIGURE 09 – GROUND FLOOR PLAN AS EXISTING

-  GARDEN: AMENITY GRASSLAND (SPECIES-POOR, REGULARLY MOWN LAWN)
-  EXISTING YOUNG AND MATURE TREES
-  SEALED SURFACE

Existing trees are located to the rear of the site where the gardens are proposed for each unit. These trees will be retained to provide shade and biodiversity for the houses.

EXISTING TREES TO BE PROTECTED DURING DEMOLITION AND CONSTRUCTION WORKS as per 5837:2012 Trees in relation to design, demolition and construction



7.0 PROPOSED CONDITIONS- URBAN GREENING FACTOR



7.0 PROPOSED CONDITIONS - URBAN GREENING FACTOR - CONTEXT

The UK Government has announced that Biodiversity Net Gain (BNG) will become mandatory in England for new developments. UGF will be delivered onsite and must still be met; even if, for BNG, a developer is looking to offsite solutions.

Urban greening will become an integral consideration of new developments and the successful execution of these projects will require the involvement of landscape design early on in the process.

The Mayor of London's 2021 Urban Greening for Biodiversity Net Gain design guide provides detailed guidance to applicants on how the requirements set out in policy can be achieved through good design.

Biodiversity net gain (BNG) is an approach to development, and/or land management, that aims to leave the natural environment in a measurably better state than it was beforehand.

The word 'biodiversity' comes from the term 'biological diversity'.

To comply with the current London Plan guidance, the Mayor recommends a target score of 0.4 for developments that are predominately residential and 0.3 for commercial premises, such as the proposed development that is a one star Hotel. This is until the final Urban Greening Factor Guidance has been published and Local Authorities have had time to add Urban Greening Factor requirements to their own Local Plans.

London Borough of Newham do not currently have an Urban Greening Factor target in their Local Plan therefore the target for this development met the Major London Plan

TABLE 05 – URBAN GREENING FACTOR TARGET

URBAN GREENING FACTOR TARGET FOR PROPOSED SCHEME	
24 and 26 Maidstone Road RESIDENTIAL BUILDING	0.40

URBAN GREENING FACTOR REQUESTED BY GLA	
24 and 26 Maidstone Road RESIDENTIAL BUILDING	0.40



7.0 PROPOSED CONDITIONS - URBAN GREENING FACTOR- CALCULATIONS

CALCULATIONS

The factors outlined in Table 8.2 in Policy G5 of Major London Plan are a simplified measure of various benefits provided by soils, vegetation and water based on their potential for rainwater infiltration as a proxy to provide a range of benefits such as improved health, climate change adaption and biodiversity conservation.

The Urban Greening Factor for a proposed development is calculated in the following way:

(Factor A x Area) + (Factor B x Area) + (Factor C x Area) etc. divided by Total Site Area.

FIGURE 10 – PLANS SHOWING HOW THE QUALITY OF DIFFERENT GREEN SURFACE-COVER TYPES CAN AFFECT THE UFG SCORE.

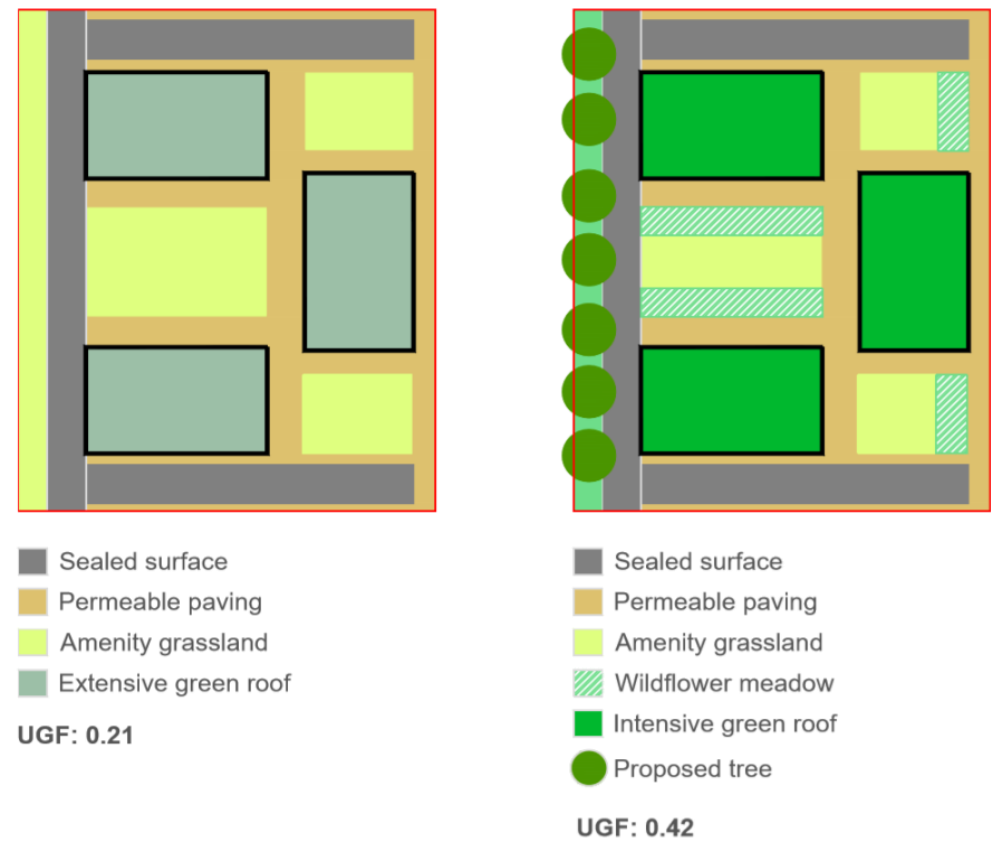


TABLE 06 – URBAN GREENING FACTORS FOR VARIOUS SURFACE COVER TYPES

SURFACE COVER TYPE	URBAN GREENING FACTOR
SEMI-NATURAL VEGETATION (E.G. TREES, WOODLAND, SPECIES-RICH GRASSLAND) MAINTAINED OR ESTABLISHED ON SITE.	1.00
WETLAND OR OPEN WATER (SEMI-NATURAL; NOT CHLORINATED) MAINTAINED OR ESTABLISHED ON SITE.	1.00
INTENSIVE GREEN ROOF OR VEGETATION OVER STRUCTURE. SUBSTRATE MINIMUM SETTLED DEPTH OF 150MM.	0.80
STANDARD TREES PLANTED IN CONNECTED TREE PITS WITH A MINIMUM SOIL VOLUME EQUIVALENT TO AT LEAST TWO THIRDS OF THE PROJECTED CANOPY AREA OF THE MATURE TREE.	0.80
EXTENSIVE GREEN ROOF WITH SUBSTRATE OF MINIMUM SETTLED DEPTH OF 80MM (OR 60MM BENEATH VEGETATION BLANKET) – MEETS THE REQUIREMENTS OF GRO CODE 2014.	0.70
FLOWER-RICH PERENNIAL PLANTING.	0.70
RAIN GARDENS AND OTHER VEGETATED SUSTAINABLE DRAINAGE ELEMENTS.	0.70
HEDGES (LINE OF MATURE SHRUBS ONE OR TWO SHRUBS WIDE).	0.60
STANDARD TREES PLANTED IN PITS WITH SOIL VOLUMES LESS THAN TWO THIRDS OF THE PROJECTED CANOPY AREA OF THE MATURE TREE.	0.60
GREEN WALL – MODULAR SYSTEM OR CLIMBERS ROOTED IN SOIL.	0.60
GROUNDCOVER PLANTING.	0.50
AMENITY GRASSLAND (SPECIES-POOR, REGULARLY MOWN LAWN).	0.40
EXTENSIVE GREEN ROOF OF SEDUM MAT OR OTHER LIGHTWEIGHT SYSTEMS THAT DO NOT MEET GRO CODE 2014.	0.30
WATER FEATURES (CHLORINATED) OR UNPLANTED DETENTION BASINS.	0.20
PERMEABLE PAVING.	0.10
SEALED SURFACES (E.G. CONCRETE, ASPHALT, WATERPROOFING, STONE).	0.00



7.0 PROPOSED CONDITIONS- URBAN GREENING FACTOR

The building biodiversity enhancements are focused on the amenity grassland and bushes.

The occupancy type for the scheme is residential, therefore the target established for the development is residential with a UGF of 0.40.

Overall, the biodiversity for the scheme has taken into account the available roof area, the requirements for the provision of private amenity areas and the well-being of the residents.

TABLE 07 – URBAN GREENING FACTOR CALCULATOR

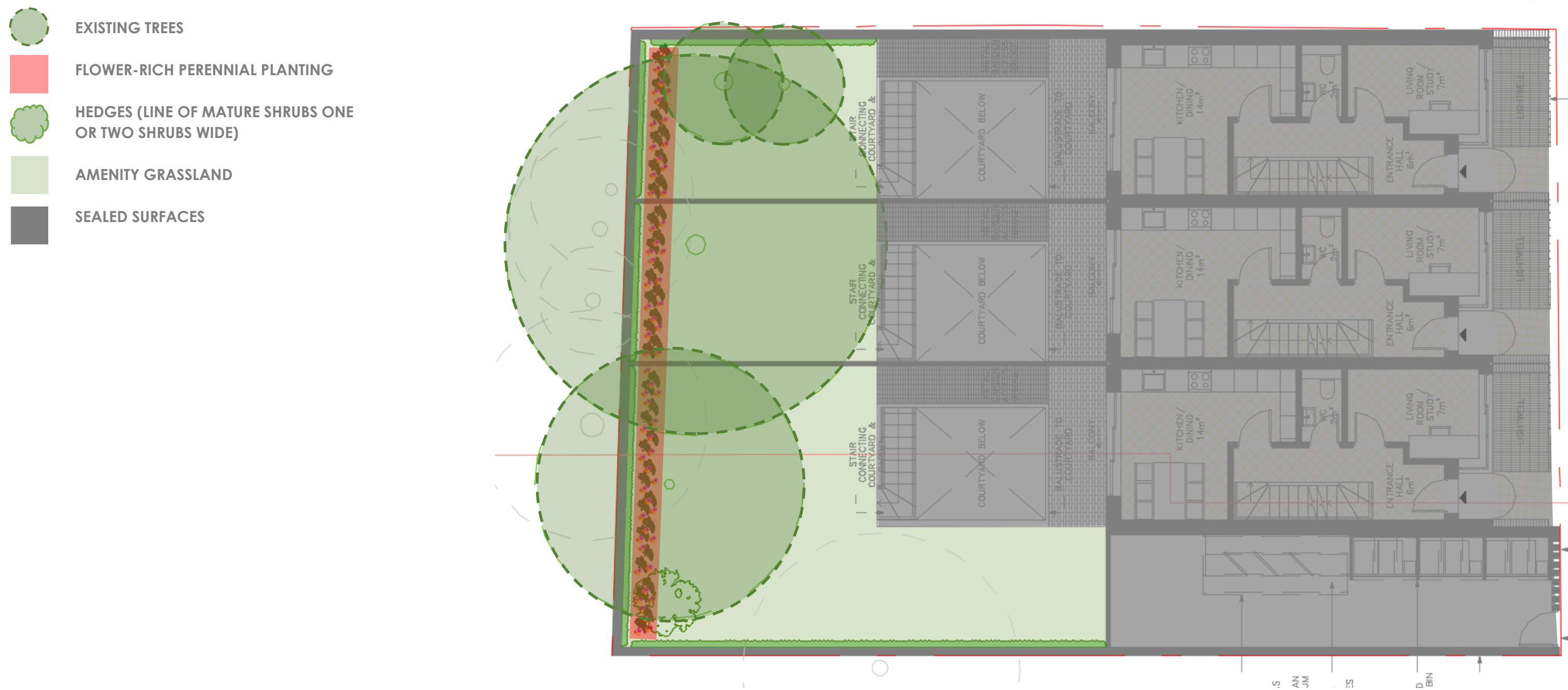
Urban Greening Factor Calculator				
Surface Cover Type	Urban Greening Factor	Area (m²)	Contribution	Notes
Semi-natural vegetation (e.g. trees, woodland, species-rich grassland) maintained or established on site.	1.0	131.41	131.410	
Wetland or open water (semi-natural; not chlorinated) maintained or established on site.	1.0	0.00	0.000	
Intensive green roof or vegetation over structure. Substrate minimum settled depth of 150mm.	0.8	0.00	0.000	
Standard trees planted in connected tree pits with a minimum soil volume equivalent to at least two thirds of the projected canopy area of the mature tree.	0.8	0.00	0.000	
Extensive green roof with substrate of minimum settled depth of 80mm (or 60mm beneath vegetation blanket) – meets the requirements of GRO Code 2014.	0.7	106.05	74.235	Extensive green roof with substrate of 100 mm
Flower-rich perennial planting.	0.7	10.84	7.588	
Rain gardens and other vegetated sustainable drainage elements.	0.7	0.00	0.000	
Hedges (line of mature shrubs one or two shrubs wide).	0.6	11.12	6.672	
Standard trees planted in pits with soil volumes less than two thirds of the projected canopy area of the mature tree.	0.6	0.00	0.000	
Green wall –modular system or climbers rooted in soil.	0.6	0.00	0.000	
Groundcover planting.	0.5	0.00	0.000	
Amenity grassland (species-poor, regularly mown lawn).	0.4	119.77	47.908	
Extensive green roof of sedum mat or other lightweight systems that do not meet GRO Code 2014.	0.3	0.00	0.000	
Water features (chlorinated) or unplanted detention basins.	0.2	0.00	0.000	
Permeable paving.	0.1	0.00	0.000	
Sealed surfaces (e.g. concrete, asphalt, waterproofing, stone).	0.0	174.03	0.000	
Total contribution			267.813	
Total site area (m²)			399.85	
Urban Greening Factor			0.67	

FIGURE 11 – GROUND FLOOR PLAN AS PROPOSED



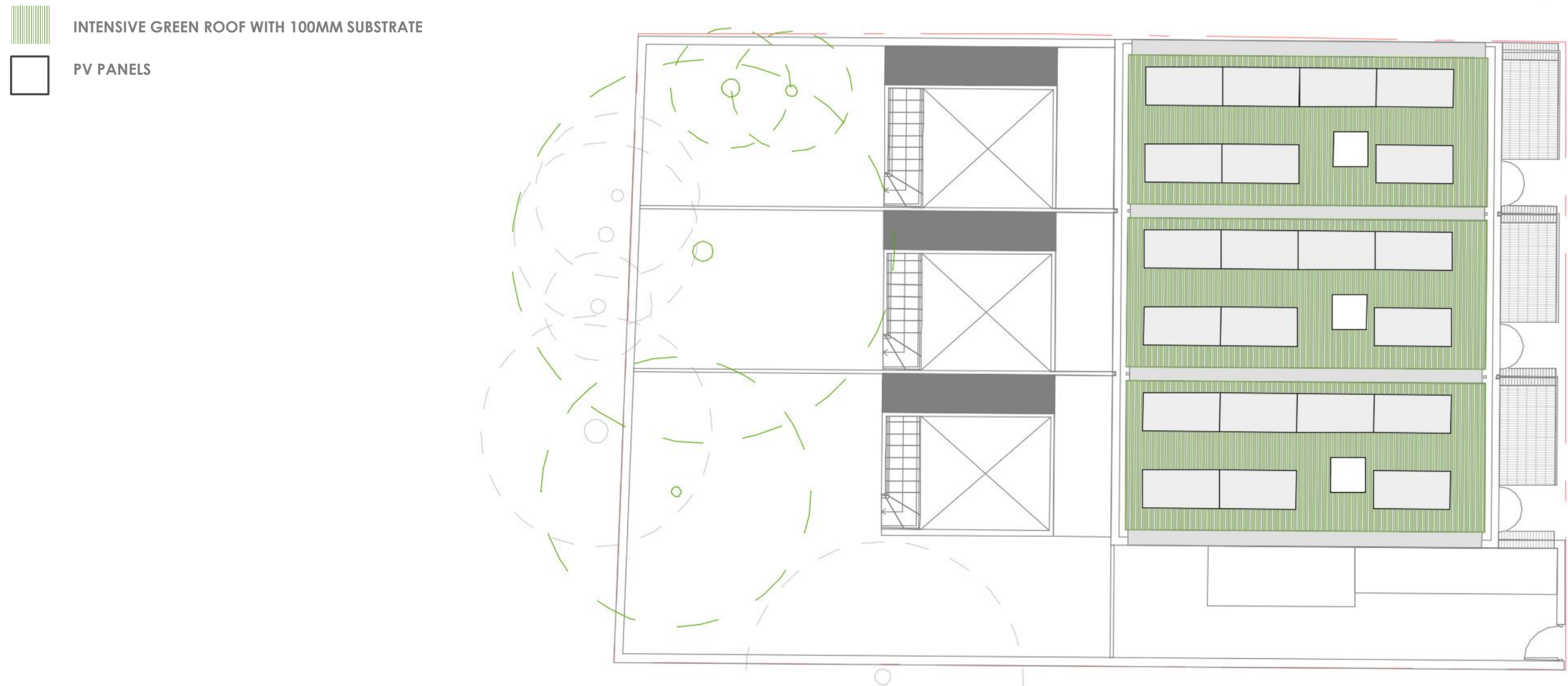
7.0 URBAN GREENING FACTOR- PROPOSED SCHEME

FIGURE 12 – GROUND FLOOR



7.0 URBAN GREENING FACTOR- PROPOSED SCHEME

FIGURE 13 – ROOF PLAN



8.0 PROPOSED SCHEME

BIODIVERSITY NET GAIN CALCULATIONS



8.0 PROPOSED SCHEME-BIODIVERSITY NET GAIN CALCULATIONS

The biodiversity metric is a habitat-based approach used to assess an area's value to wildlife. The metric uses habitat features to calculate a biodiversity value.

Biodiversity metric is used to calculate how a development, or a change in land management, will change the biodiversity value of a site.

The metric calculates the values as biodiversity units. Biodiversity units are calculated using the size of the habitat, its quality and location.

TYPES OF HABITAT

Biodiversity metric can be used for land and intertidal habitats, including hedgerows, rivers and streams.

The metric assesses existing habitats and planned new habitats created by a development or land change.

The proposes scheme will have a total net unit change of **0.10 Habitat Units** from on-site habitat creation, which meets the minimum required.

TABLE 08 – BIODIVERSITY METRIC FINAL RESULTS

Site Name	24 and 26 Maidstone Road
Sheet Name	Headline Results
Headline Results	
Headline	BNG Targets Met ✓
Trading Rules	Trading Rules Satisfied ✓

Biodiversity Metric 4.0 is a biodiversity accounting tool that can be used for the purposes of calculating biodiversity net gain. The metric calculates the values as biodiversity units. The metric assesses existing habitats and planned new habitats created by a development or land change.

The proposed habitat described above results in a total net change in habitat units of **25.09%**, and **10.86%** of hedgerow units.

Therefore, the proposed development will comply with the London Plan requirements for BNG.



8.0 PROPOSED SCHEME - BIODIVERSITY NET GAIN CALCULATIONS

TABLE 09 – ON-SITE HABITAT BASELINE

Baseline Units	Habitat units	0.1896
	Hedgerow units	0.0926
	River units	Zero Units Baseline

TABLE 10 – ON-SITE HABITAT CREATION

Post-development Units	Habitat units	0.2372
	Hedgerow units	0.1026
	River units	0.0000

8.0 PROPOSED SCHEME - BIODIVERSITY NET GAIN CALCULATIONS

TABLE 11 – HEADLINE RESULTS

Total net unit change	Habitat units	0.0476	✓
	Hedgerow units	0.0101	✓
	River units	0.0000	✓
Total net % change	Habitat units	25.09%	✓
	Hedgerow units	10.86%	✓
	River units	% target not appropriate	
Habitats units required to meet target		0.0000	
Hedgerow units required to meet target		0.0000	
River units required to meet target		0.0000	

9.0 MAINTENANCE AND MONITORING



9.0 MAINTENANCE AND MONITORING

Maintenance, conducted by qualified personnel will ensure the initial establishment and continued health of the green roof system. It is strongly recommended that the installing contractor remains responsible for the maintenance of the green roof during the establishment stage (between 12 - 15 months) and prior to the assignation of maintenance duties to the building owner's representative.

The costs of maintenance should therefore form part of the life cycle cost analysis for the building, allowing the most appropriate green roof specification to be realised.

- 1) Regular Inspection:** Perform regular inspections at least twice a year (spring and autumn) to assess the overall condition of the green roof.
- 2) Irrigation:** Post-establishment, irrigation should not be required for most intensive green roofs, although the water storage capacity of the system and the plants' water demands should be appropriately assessed.
- 3) Fertilisation:** Intensive green roofs typically have low nutrient requirements and are therefore often fertilised on an annual basis, each spring, using a slow-release fertiliser.
- 4) Plant management:** Removal of undesirable plant species and fallen leaves should take place twice each year.
- 5) Pruning and Trimming:** Trim back overgrown vegetation and prune plants as needed to maintain their shape and prevent overcrowding.
- 6) Pest and Disease Management:** Monitor the green roof for any signs of pests or diseases. Take appropriate measures to control them, such as introducing beneficial insects or using eco-friendly treatments.
- 7) Replace Damaged Plants:** If any plants are damaged or not thriving, replace them with suitable alternatives during the appropriate planting season.

8) Inspect Drainage System: Regularly check the drainage system to ensure it is functioning correctly and not clogged with debris.

9) Roof Surface Cleaning: Remove any debris, fallen leaves, or litter from the green roof surface regularly.

10) Check for Erosion and Soil Compaction: Look for signs of soil erosion or compaction and address the issue promptly to maintain the substrate integrity.

11) Inspect Roof Membrane: Check the waterproofing membrane regularly to ensure it is in good condition and address any potential issues promptly.

12) Monitoring Wildlife: Observe and monitor the wildlife on the green roof. Encourage beneficial insects and pollinators while addressing any pest issues.

13) Educate Users: If the green roof is accessible to people, educate them on proper use, walking paths, and the importance of preserving the vegetation.

14) Record Keeping: Keep detailed records of maintenance activities, issues, and observations to track the green roof's progress over time.

All maintenance actions carried out at roof level must be in full compliance with the appropriate health and safety regulations, and particularly those specifically dealing with working at height. Remember, the specific maintenance requirements may vary depending on the plant species, local climate, and unique characteristics of the green roof. It's always a good idea to consult with green roof experts or horticulturists for personalized advice and guidance.

10.0 ECOLOGICAL ENHACEMENT



10.0 ECOLOGICAL ENHANCEMENT

In order to achieve the good and best practice in terms of Ecological Enhancement of the site the following KEY recommendations will be implemented on site.

-Rich perennial planting containing native species or species with a known wildlife benefit in the ground floor. At least 10 of the following species will be located in the area shown in Figure 12 around each garden and below the proposed trees. such as:

- Crocus
- Saxifrage
- Hebe
- Chives
- Thrift
- Squill
- Lavender
- Oregano
- Thyme
- Birds foot trefoil
- Devils bit scabious
- Bearded hawkbit
- Sedums
- Wallflower Bowles and
- Christmas rose

FIGURE 14 – FLOWER RICH PERENNIAL PLANTING AND TREES IN GROUND FLOOR



10.0 ECOLOGICAL ENHACEMENT

FIGURE 15 – FLOWER RICH PERENNIAL PLANTING



10.0 ECOLOGICAL ENHACEMENT

On the back of the rear first floor terraces the following will be installed:

- Inclusion of two bat boxes in the south east.
- These will be a Schwedler box (available from www.wildcareshop.com).

A number of additional recommendations have also been made to enhance the ecological value of the site:

- Inclusion of 2no nest sites to encourage house sparrow and black redstart;
- Downward focussed lighting to be used where possible to reduce disruption to animal navigation; and
- Provision of a green roof (with a 100 mm substrate based roof that would support semi-natural vegetation) to provide potential foraging habitat for black redstart and habitat for invertebrate species.



Bat box

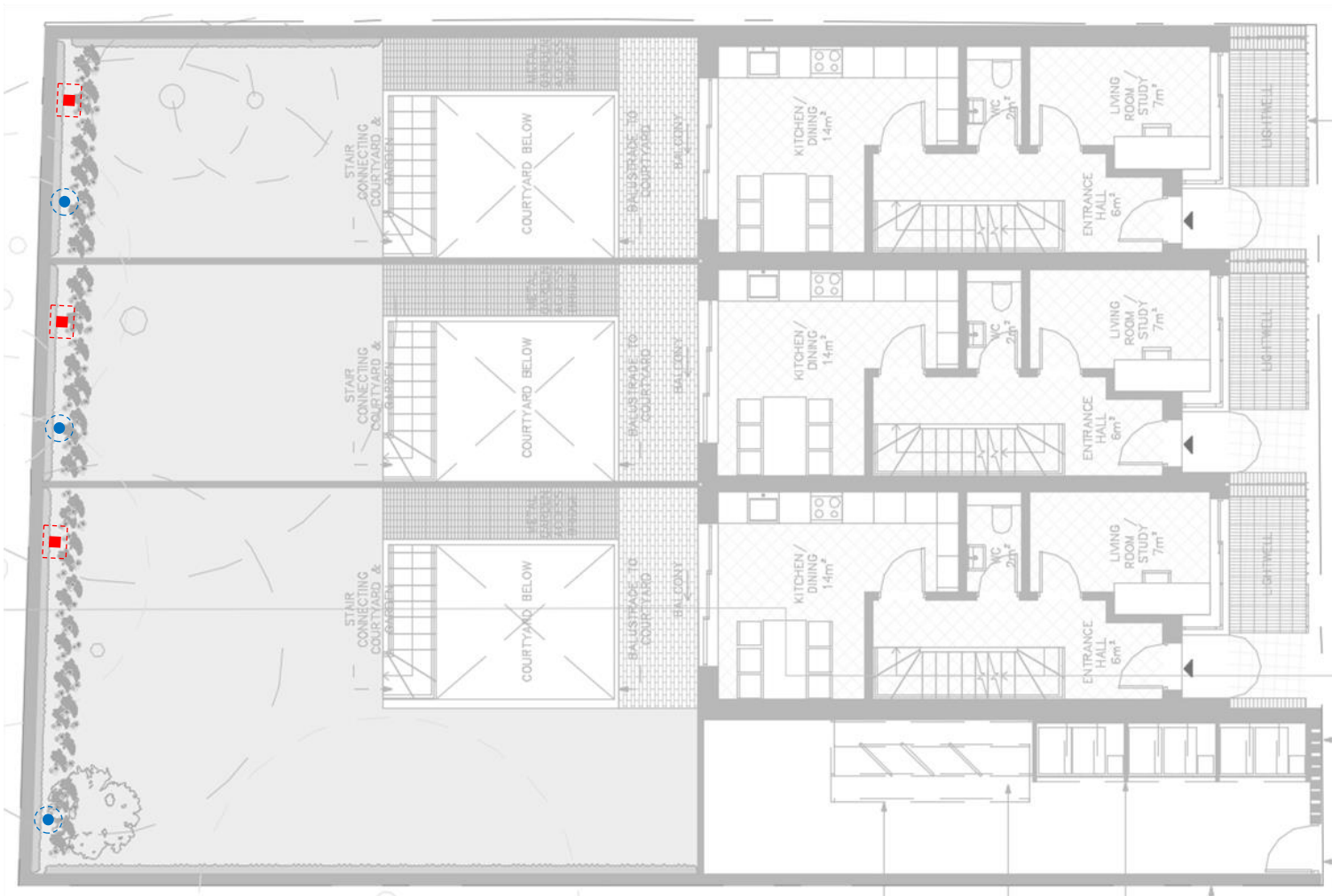
[https://www.nhbs.com/
search?q=bat+boxesB](https://www.nhbs.com/search?q=bat+boxesB)



Schwedler Nest Box

[https://www.nhbs.com/
1b-schwegler-nest-box](https://www.nhbs.com/1b-schwegler-nest-box)

FIGURE 16 – FIRST FLOOR PLAN



BIRD BOXES



BAT BOXES



3 BIRD BOXES

3 BAT BOXES



11.0 MATERIALS



MATERIALS

ASSESSMENT

Following the Guidance stated in the Code for Sustainable Homes v 2010, at least three of the following five key elements of the building envelope achieve a rating of A+ to D in the 2008 version of the Green Guide

- Roof
- External Walls
- Internal walls (including separating materials)
- Upper and ground floors (including separating floors)
- Windows

TABLE 12 – MATERIALS ASSESSMENT CRITERIA

ELEMENT	RATING	COMPLIANCE
Roof	A+	
External walls	A+	
Internal wall	B	
Separating floors	B	
Separating walls	B	

TABLE 13 – MATERIALS ASSESSMENT CRITERIA

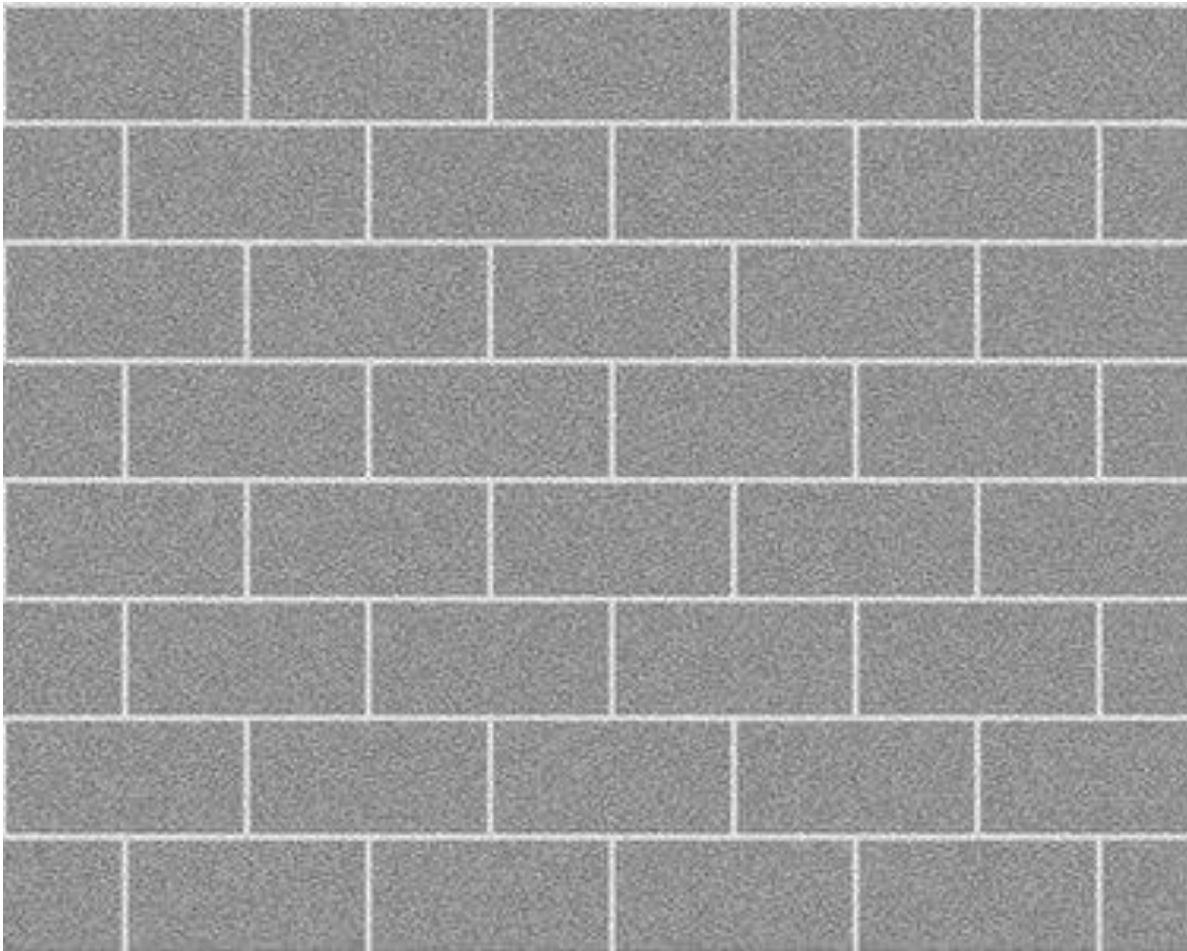
ELEMENT	RATING	COMPLIANCE
Insulation	A	
Floor finishes	A	
Soft floor finishes	A+	
Windows	A+	

MATERIALS

INTERNAL WALLS CONSTRUCTION

Medium dense solid blockwork, plasterboard, paint

	Element number	Summary rating
Medium dense solid blockwork, plasterboard, paint	809180008	B



Element Dense solid blockwork, painted finish only

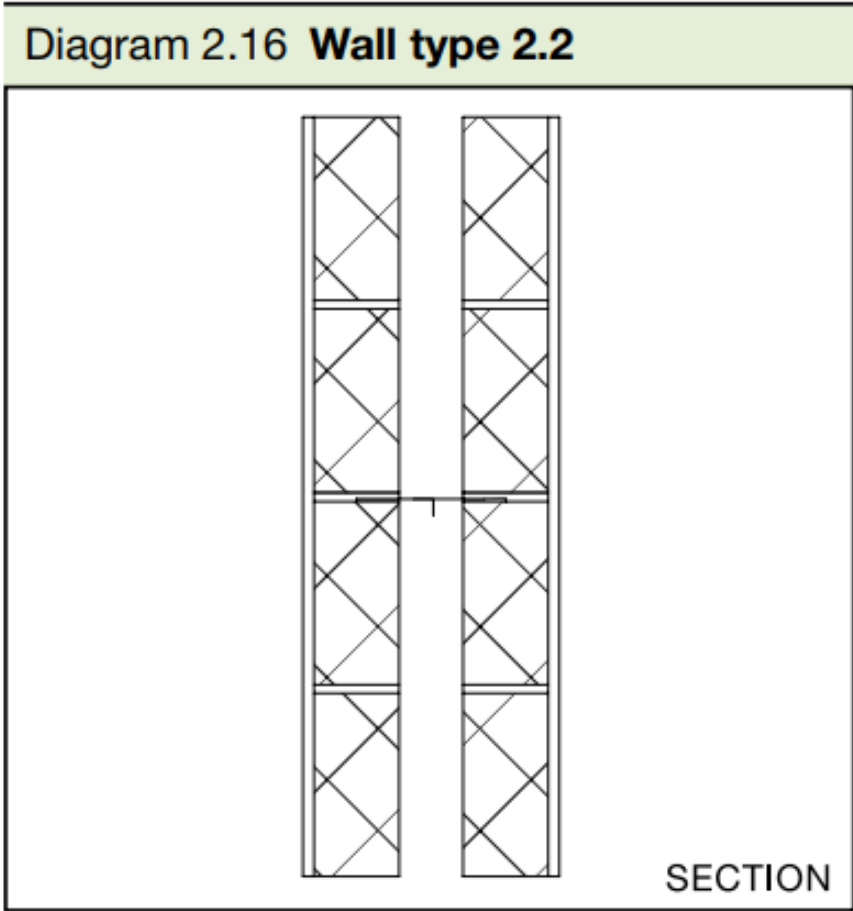
Element Number	809180001
Summary Rating	A
Climate Change	A
Water Extraction	A
Mineral Resource Extraction	C
Stratospheric Ozone Depletion	A
Human Toxicity	A+
Ecotoxicity to Freshwater	C
Nuclear Waste (higher level)	A+
Ecotoxicity to Land	A+
Waste Disposal	A
Fossil Fuel Depletion	A+
Eutrophication	A+
Photochemical Ozone Creation	A+
Acidification	A+
Kg of CO ₂ eq. (60 years)	28.0

MATERIALS

SEPARATING WALLS CONSTRUCTION

Approved Document E Wall Type 2.2: 100mm solid medium dense aggregate blockwork (≈1450 kg/m³) cavity wall (min. 75mm), 13mm lightweight plaster (min. 10 kg/m²) and paint on both faces. Overall minimum mass of 300 kg/m².

	Element number	Summary rating
Approved Document E Wall Type 2.2: 100mm solid medium dense aggregate blockwork (≈1450 kg/m³) cavity wall (min. 75mm), 13mm lightweight plaster (min. 10 kg/m²) and paint on both faces. Overall minimum mass of 300 kg/m².	818190056	B



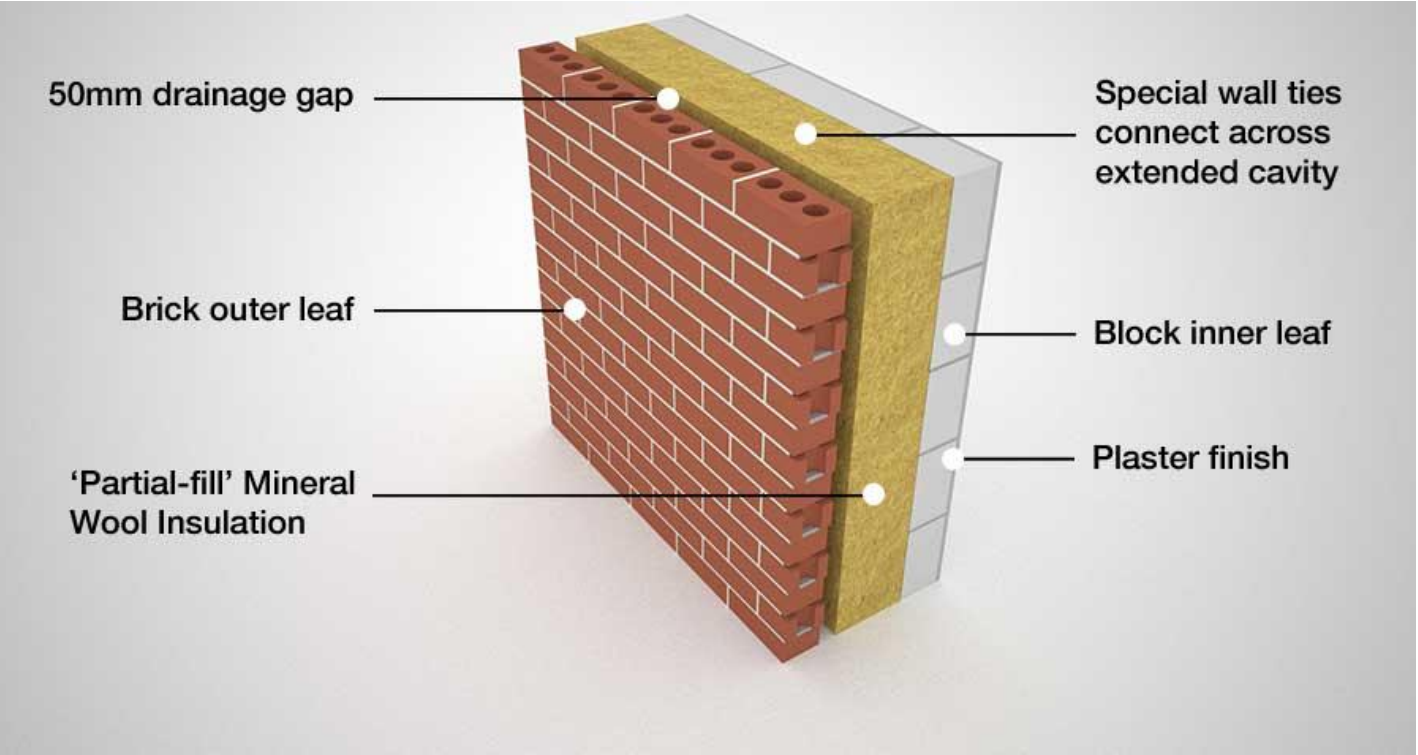
Element	Approved Document E Wall Type 2.2: 100mm solid medium dense aggregate blockwork (≈1450 kg/m³) cavity wall (min. 75mm), 13mm lightweight plaster (min. 10 kg/m²) and paint on both faces. Overall minimum mass of 300 kg/m².
Element Number	818190056
Summary Rating	B
Climate Change	B
Water Extraction	B
Mineral Resource Extraction	B
Stratospheric Ozone Depletion	B
Human Toxicity	A+
Ecotoxicity to Freshwater	C
Nuclear Waste (higher level)	A+
Ecotoxicity to Land	A+
Waste Disposal	A
Fossil Fuel Depletion	A
Eutrophication	B
Photochemical Ozone Creation	A+
Acidification	A+
Kg of CO ₂ eq. (60 years)	65.0

MATERIALS

EXTERNAL WALLS CONSTRUCTION

Brickwork outer leaf, insulation, medium dense solid blockwork inner leaf, cement:lime mortar, plaster, paint

	Element number	Summary rating
Brickwork outer leaf, insulation, medium dense solid blockwork inner leaf, cement:lime mortar, plaster, paint	806170084	A+



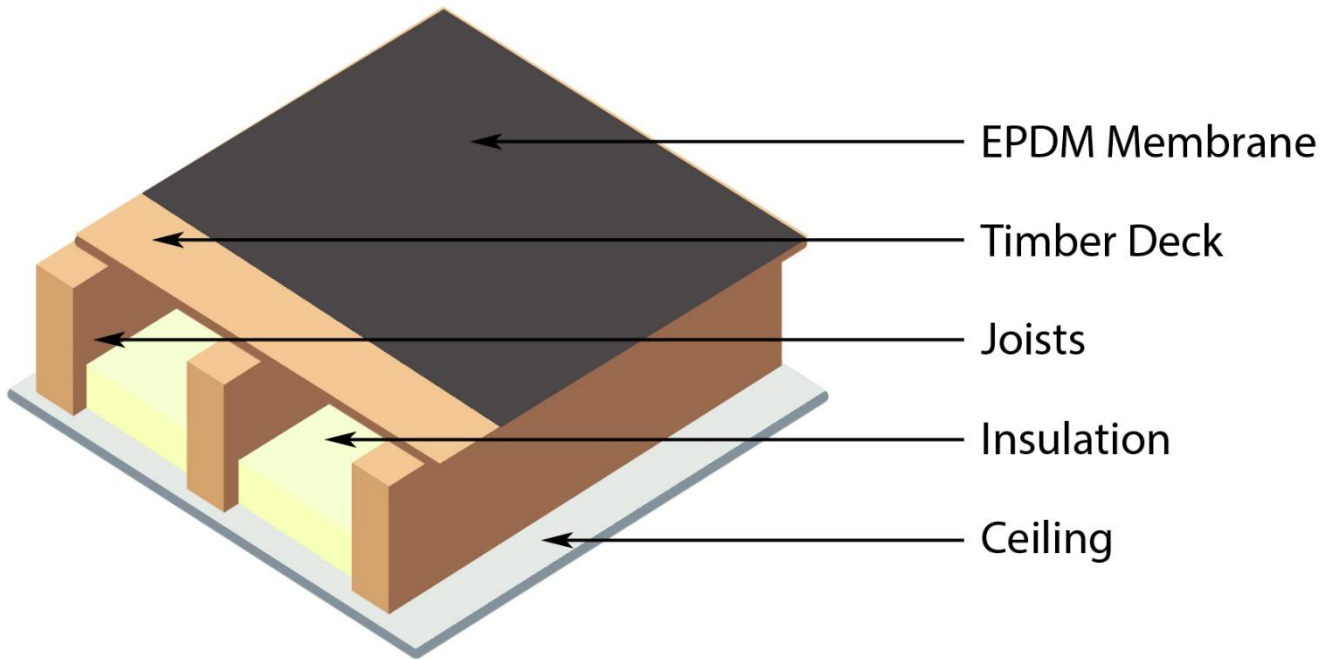
Element	Brickwork outer leaf, insulation, medium dense solid blockwork inner leaf, cement:lime mortar, plaster, paint
Element Number	806170084
Summary Rating	A+
Climate Change	A
Water Extraction	A+
Mineral Resource Extraction	A+
Stratospheric Ozone Depletion	A
Human Toxicity	A+
Ecotoxicity to Freshwater	A+
Nuclear Waste (higher level)	A+
Ecotoxicity to Land	A+
Waste Disposal	A+
Fossil Fuel Depletion	A+
Eutrophication	A+
Photochemical Ozone Creation	A+
Acidification	A+
Kg of CO ₂ eq. (60 years)	77.0

MATERIALS

ROOF CONSTRUCTION

Vapour control layer, insulation, timber joists, OSB/3, EPDM single ply roofing membrane

	Element number	Summary rating
Vapour control layer, insulation, timber joists, OSB/3, EPDM single ply roofing membrane	1212520006	A+



Element	Vapour control layer, insulation, timber joists, OSB/3, EPDM single ply roofing membrane
Element Number	1212520006
Summary Rating	A+
Climate Change	A+
Water Extraction	A+
Mineral Resource Extraction	A+
Stratospheric Ozone Depletion	A
Human Toxicity	A+
Ecotoxicity to Freshwater	A+
Nuclear Waste (higher level)	A+
Ecotoxicity to Land	A+
Waste Disposal	A+
Fossil Fuel Depletion	A+
Eutrophication	A+
Photochemical Ozone Creation	A+
Acidification	A+
Kg of CO ₂ eq. (60 years)	14.0

MATERIALS

SEPARATING FLOOR CONSTRUCTION

Robust Detail E-FC-1: Floating Floor Treatment (FFT1/2/3 with 18mm min. OSB/3) on 40mm min. screed (80kg/m² min.) on 150mm (min.) precast prestressed hollow planks (300kg/m² min.) with Ceiling Treatment (CT1/3)

	Element number	Summary rating
Robust Detail E-FC-1: Floating Floor Treatment (FFT1/2/3 with 18mm min. OSB/3) on 40mm min. screed (80kg/m² min.) on 150mm (min.) precast prestressed hollow planks (300kg/m² min.) with Ceiling Treatment (CT1/3)	829550106	B



Element	Robust Detail E-FC-1: Floating Floor Treatment (FFT1/2/3 with 18mm min. OSB/3) on 40mm min. screed (80kg/m² min.) on 150mm (min.) precast prestressed hollow planks (300kg/m² min.) with Ceiling Treatment (CT1/3)
Element Number	829550106
Summary Rating	B
Climate Change	C
Water Extraction	A
Mineral Resource Extraction	C
Stratospheric Ozone Depletion	C
Human Toxicity	B
Ecotoxicity to Freshwater	A
Nuclear Waste (higher level)	A
Ecotoxicity to Land	A
Waste Disposal	A+
Fossil Fuel Depletion	B
Eutrophication	C
Photochemical Ozone Creation	B
Acidification	A+
Kg of CO ₂ eq. (60 years)	82.0



MATERIALS

INSULATION

Rigid urethane (pentane blown) with gas-tight facers, density 32 kg/m³ and k-value 0.023 W/m.K

[Rigid urethane \(pentane blown\) with gas-tight facers, density 32 kg/m³ and k-value 0.023 W/m.K](#)

Element number	Summary rating
1415320205	A



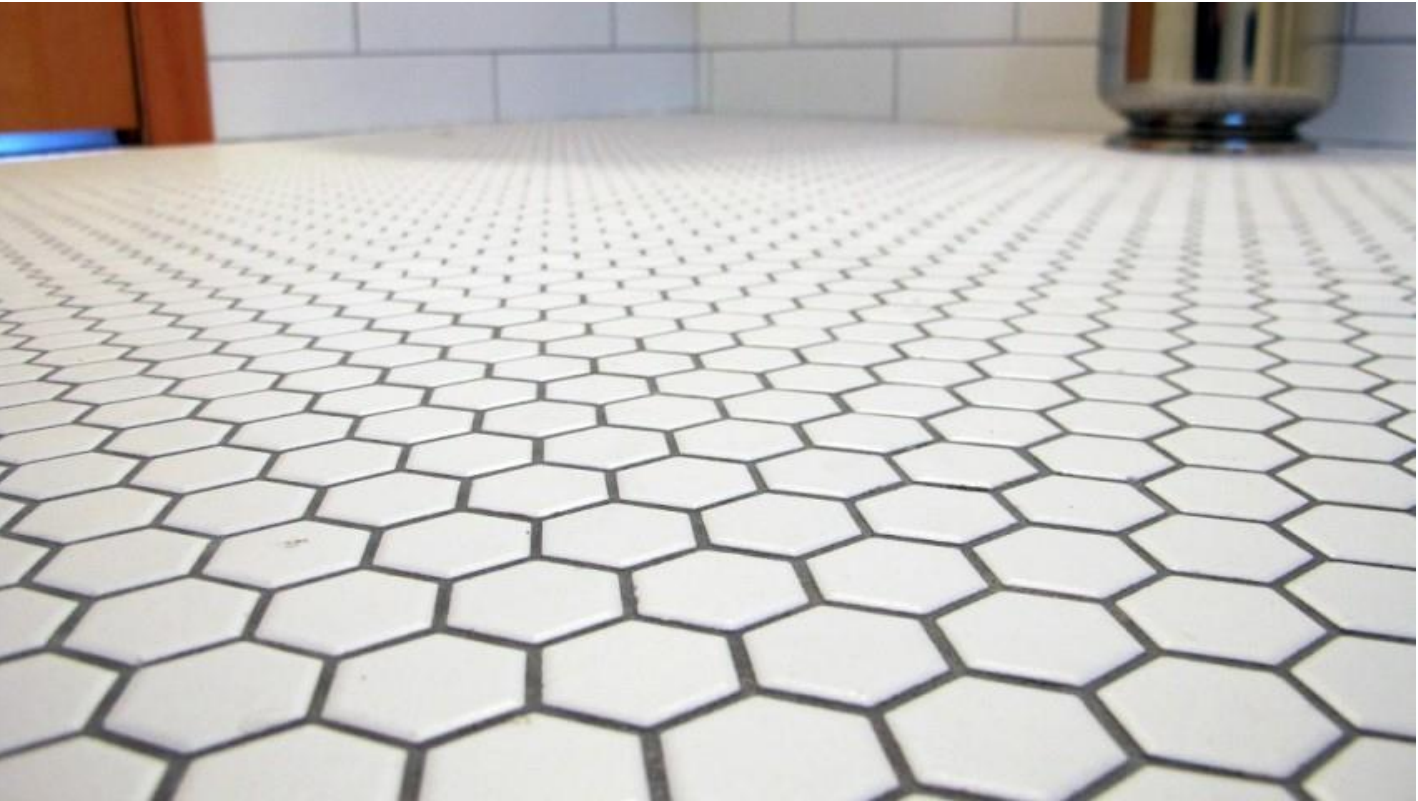
Element	Rigid urethane (pentane blown) with gas-tight facers, density 32 kg/m³ and k-value 0.023 W/m.K
Element Number	1415320205
Summary Rating	A
Climate Change	B
Water Extraction	B
Mineral Resource Extraction	A+
Stratospheric Ozone Depletion	A
Human Toxicity	A+
Ecotoxicity to Freshwater	A+
Nuclear Waste (higher level)	A+
Ecotoxicity to Land	E
Waste Disposal	A+
Fossil Fuel Depletion	A
Eutrophication	A+
Photochemical Ozone Creation	D
Acidification	B
Kg of CO ₂ eq. (60 years)	12.0

MATERIALS

FLOOR FINISHES CONSTRUCTION

Ceramic mosaic tiles.

	Element number	Summary rating
Ceramic mosaic tiles.	821580011	A+



Element Ceramic mosaic tiles.

Element Number	821580011
Summary Rating	A+
Climate Change	A
Water Extraction	A+
Mineral Resource Extraction	A+
Stratospheric Ozone Depletion	A+
Human Toxicity	A+
Ecotoxicity to Freshwater	A+
Nuclear Waste (higher level)	A+
Ecotoxicity to Land	A+
Waste Disposal	A+
Fossil Fuel Depletion	A+
Eutrophication	A+
Photochemical Ozone Creation	A+
Acidification	A+
Kg of CO ₂ eq. (60 years)	43.0

MATERIALS

SOFT FLOOR FINISHES CONSTRUCTION

Carpet - polypropylene cut, 1000g/m², textile backing. Recycled Polymer Foam Underlay 1100 g/m². FCSS 21, 22/23.

	Element number	Summary rating
Carpet - polypropylene cut, 1000g/m², textile backing. Recycled Polymer Foam Underlay 1100 g/m². FCSS 21, 22/23.	821570070	A



Element	Carpet - polypropylene cut, 1000g/m², textile backing. Recycled Polymer Foam Underlay 1100 g/m². FCSS 21, 22/23.
Element Number	821570070
Summary Rating	A
Climate Change	B
Water Extraction	A+
Mineral Resource Extraction	A+
Stratospheric Ozone Depletion	A+
Human Toxicity	A+
Ecotoxicity to Freshwater	A+
Nuclear Waste (higher level)	A+
Ecotoxicity to Land	A
Waste Disposal	A+
Fossil Fuel Depletion	A
Eutrophication	A+
Photochemical Ozone Creation	A
Acidification	A
Kg of CO ₂ eq. (60 years)	80.0

MATERIALS

WINDOWS

Powder coated aluminium clad softwood window, double glazed, water based translucent coating internally (WWA clip-on specification)

	Element number	Summary rating
Powder coated aluminium clad softwood window, double glazed, water based translucent coating internally (WWA clip-on specification)	1413100007	A+



Element	Powder coated aluminium clad softwood window, double glazed, water based translucent coating internally (WWA clip-on specification)
Element Number	1413100007
Summary Rating	A+
Climate Change	B
Water Extraction	B
Mineral Resource Extraction	A
Stratospheric Ozone Depletion	B
Human Toxicity	A
Ecotoxicity to Freshwater	A+
Nuclear Waste (higher level)	B
Ecotoxicity to Land	A+
Waste Disposal	C
Fossil Fuel Depletion	A+
Eutrophication	A
Photochemical Ozone Creation	A+
Acidification	A
Kg of CO ₂ eq. (60 years)	220.0

12.0 CONCLUSIONS



12.0 CONCLUSION

OVERALL SUSTAINABILITY

In conclusion, this report demonstrate compliance against, policy DM21 of the Development Management Document sustainable design, layout and construction techniques. This Sustainability Statement now includes proposed measures to improve sustainability of the scheme including:

- Transport
- Health and Wellbeing
- Materials and Waste
- Water Consumption (Please refer to SUDs Strategy Report, issued under separate cover)
- Flood Risk and Drainage (Please refer to SUDs Strategy Report, issued under separate cover)
- Biodiversity and Landscape Design,
- Climate resilience (Please refer to Energy Statement- Overheating Checklist)
- Energy and CO2 emissions (Please refer to the Energy Statement, issued under separate cover)

The measures incorporated to the design in order to improve sustainability include:

- Green areas including: Flower rich perennial planting, amenity grassland, hedges, native hedgerow, retained trees, and Intensive green roof with minimum substrate of 100mm
- Internal Water Use reduction.
- 3no x 100 l rainwater butt for re-use.
- 3no x 1000 l rainwater tank for re-use
- Energy Efficiency Measures with 50% improvement beyond Approved Document L
- Triple glazed windows
- Underfloor Heating via ASHP
- 7no PV panels
- Low environmental impact of materials with their majority responsibly sourced.

UGF CALCULATIONS

London Plan Policy G5 requires the use of an Urban Greening Factor (UGF) tool to evaluate the amount and quality of urban greening provided by a development proposal. The UGF enables planning authorities and developers to have informed discussions about the appropriate level of green infrastructure that should be provided to deliver locally relevant outcomes, such as climate resilience or active travel, benchmarked against target scores for different types of development. By using the UGF values, these are multiplied by the area for each different roof system. Then the resultant factor is calculated. This factor is finally divided by the total site area to get the UGF.

The proposed features include:

- 106.05 m² of a 100mm deep Intensive Green Roof,
- 10.84 m² of flower-rich perennial planting,
- 131.41 m² of standard trees,
- 11.12 m² of shrubs, and
- 119.77 m² of amenity grassland

These features can be seen in Figures 12 to 16, and Table 07, the resultant factor is divided by the total area.

The above proposed planting achieves a UGF of **0.67** which meets the minimum required by the London Plan for residential developments



12.0 CONCLUSION

BIODIVERSITY NET GAIN

Biodiversity Metric 4.0 is a biodiversity accounting tool that can be used for the purposes of calculating biodiversity net gain. The metric calculates the values as biodiversity units. The metric assesses existing habitats and planned new habitats created by a development or land change.

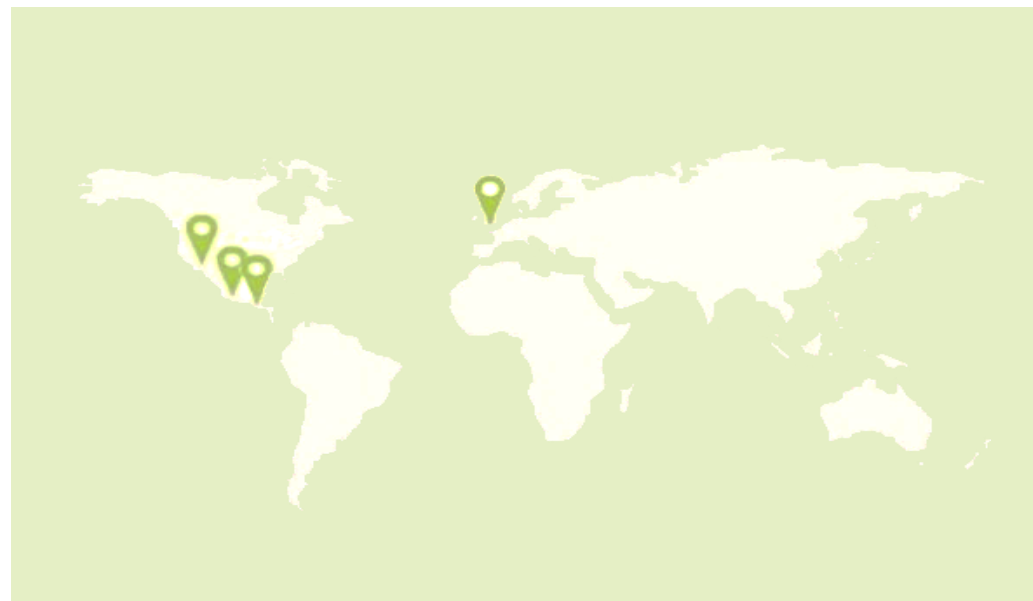
The proposed habitat described above results in a total net change in habitat units of **25.09%**, and **10.86%** of hedgerow units.

Therefore, the proposed development will comply with the London Plan requirements for both UGF and BNG.

MAINTENANCE

Green roofs offer many advantages for building developers, owners and their users. They benefit the wider environment through their positive impact on sustainability, biodiversity and the attenuation of storm water. They create visual enhancement of the landscape and fully exploit the spatial opportunities for visual and recreational benefit with the possibility of planning gain. In economic terms green roofs can have long term financial benefits. Combined with Solar Photovoltaic (PV) panels they can enhance the power production of the PV units due to the cooling nature of the green roof.





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