DECEMBER 2022

Low Emission Strategy

382 Bath Road, Harmondsworth, UB7 0DH

Iceni Projects Limited on behalf of
382 Bath Road Ltd

December 2022

ICENI PROJECTS LIMITED ON BEHALF OF 382 BATH ROAD LTD

Low Emission Strategy
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1. EXECUTIVE SUMMARY

1.1 Iceni Projects Ltd were commissioned by 382 Bath Road Ltd to produce a Low Emission Strategy to support the proposed development at 382 Bath Road, Harmondsworth, UB7 0DH.

1.2 This application proposes the demolition of the existing building and construction of four dwelling houses, alongside landscaping, car parking and amenity space.

1.3 Consideration has been given to the Hillingdon Local Plan Part 1: Strategic Policies in the formulation of this strategy, aiming to minimise the impact of the proposed development on local air quality during construction and operation, and ensure future residents are not exposed to unacceptable levels of pollution.

1.4 The proposed strategy has been based around the objectives of the Local Plan objective 11, and policies BE1 and EM1. The strategy shows that the proposed development:

- will employ electric-only air source heat pump (ASHP) systems to deliver space and water heating, eliminating the need for fossil-fuel combustion on site;
- will provide electric vehicle charging facilities to encourage the use of alternatives to combustion engine cars;
- will deliver new planting and green infrastructure, which will aid in improving local air quality; and
- will promote cycling and walking, and deter private car ownership.

1.5 Overall, the proposals constitute sustainable development in accordance with national and local policy requirements and will provide a development that seeks to promote these principles in practice.

2. INTRODUCTION

2.1 Iceni Projects Ltd were commissioned by 382 Bath Road Ltd to produce a Low Emission Strategy to support the proposed development at 382 Bath Road, Harmondsworth, UB7 0DH.

Report Objective

2.2 This document details the sustainable design and construction measures adopted by the proposed development and gives an overview of the design proposals that will ensure the development operates in a sustainable manner over the lifespan of the scheme. The Low Emission Strategy report headlines will provide a framework for the project team to operate consistently within sustainability guidelines set out by the London Borough of Hillingdon (LBH).

2.3 The report is structured to meet these guidelines as follows:

- Section 3 discusses the planning context and policies which are relevant to sustainability;
- Section 4 discusses the development response to the policy drivers for sustainability; and
- Section 5 summarises the development's design response.

Site and Surroundings

2.4 The application site (Appendix A1) is located within the London Borough of Hillingdon, to the north of Heathrow Airport. The site is bound by Bath Road to the south, a terrace of residential properties numbered 374 – 380 to the east, a commercial building to the west, and the rear garden of the residential property at 37 Hatch Lane to the north.

2.5 The application site itself comprises a former Post Office building of two storeys, in addition to areas of hard and soft landscaping to the front and rear of the building. The approximate location and boundaries of the site are shown in Figure 2.1 below.

Figure 2.1 The site

Approximate site boundary

The Proposed Development

2.6 The proposed development was submitted to the London Borough of Hillingdon in January 2022 (ref. 76608/APP/2022/197) and approved in September 2022.

2.7 The description of development is as follows:

"Demolition of the existing building and construction of four dwelling houses."

2.8 Images showing the ground floor plans and elevations of the proposed development are presented below, based on the plans submitted as part of the original planning application, prepared by Hanslink Ltd in December 2021. The proposed site plan is provided in Appendix A1.

Figure 2.1 Proposed ground floor layout

Figure 2.3 Proposed north elevation

Figure 2.4 Proposed east elevation

Figure 2.5 Proposed south elevation

Figure 2.6 Proposed west elevation

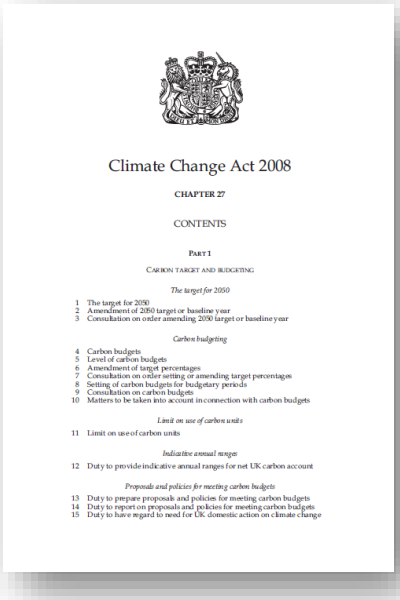
3. PLANNING AND REGULATORY CONTEXT

3.1 Sustainable development approaches are incorporated within policy and regulation at a national, regional and local level, as set out below.

National

Climate Change Act 2008

3.2 On 26th November 2008, the UK Government published the Climate Change Act 2008; the world's first long-term legally binding framework to mitigate against climate change. Within this framework, the Act sets legally binding targets to increase greenhouse gas emission reductions through action in the UK and abroad from the 60% target set out in the Energy White Paper, to 80% by 2050.



Climate Change Act 2008

CHAPTER 27

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PART 1

CARBON TARGET AND BUDGETING

The target for 2050

1 The target for 2050
2 Amendment of 2050 target or baseline year
3 Consultation on order amending 2050 target or baseline year

Carbon budgeting

4 Carbon budgets
5 Level of carbon budgets
6 Amendment of target percentages
7 Consultation on order setting or amending target percentages
8 Setting of carbon budgets for budgetary periods
9 Consultation on carbon budgets
10 Matters to be taken into account in connection with carbon budgets

Limit on use of carbon units

11 Limit on use of carbon units

Indicative annual ranges

12 Duty to provide indicative annual ranges for net UK carbon account

Proposals and policies for meeting carbon budgets

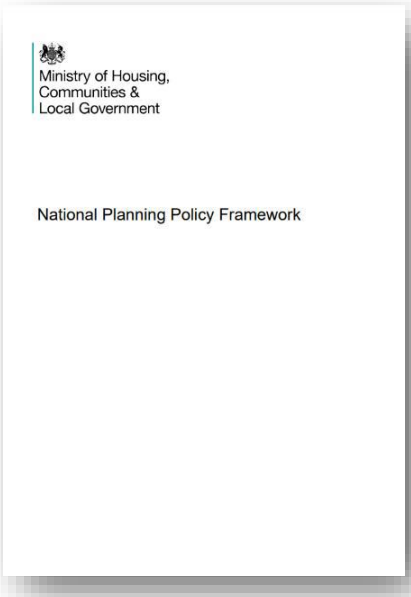
13 Duty to prepare proposals and policies for meeting carbon budgets
14 Duty to report on proposals and policies for meeting carbon budgets
15 Duty to have regard to need for UK domestic action on climate change

3.3 As required under Section 34 of the Climate Change Act, the Sixth Annual Carbon Budget was accepted by the Government in April 2021. This sets out a budget for UK emissions for the period 2033 – 2037.

3.4 Following a commitment in June 2019, the Climate Change Act has been amended to target net zero carbon emissions by 2050.

National Planning Policy Framework

3.5 The Ministry of Housing, Communities & Local Government determines national policies on different aspects of planning and the rules that govern the operation of the system. Accordingly, the National Planning Policy Framework (NPPF), which came into force in March 2012 and was updated in February 2019, aims to strengthen local decision making. Additional updates have since been made through the latter half of 2020 and in January and July 2021 to reflect changes related to use classes, permitted development rights, the calculation of housing need, and requirements to achieve beauty alongside sustainability.



Ministry of Housing, Communities & Local Government

National Planning Policy Framework

3.6 Paragraphs 10 and 11 of the NPPF confirm that at the heart of this document is a "*presumption in favour of sustainable development*", and that development proposals that accord with an up-to-date development plan should be approved without delay.

3.7 Paragraph 7 states that 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.

3.8 Achieving sustainable development means that the planning system has three overarching activities, 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:

- **An Economic Role –** ensuring the provision of land and infrastructure needed to help build a *strong, responsive and competitive economy.*

- **A Social Role –** supplying the required amount of housing while at the same time ensuring and building *strong, vibrant and healthy communities.* Ensuring that the built environment is sited around accessible local services which help support a community's *health, social and cultural well-being.*

- **An Environmental Role –** ensuring development contributes to the protection and enhancement of the *natural, built and historic environment* through the improvement of biodiversity, minimising the use of natural resources and production of pollution / waste, and guaranteeing sufficient adaptation to climate change.

Regional

3.9 Within Greater London, key sustainable development principles for economic, environmental and social improvement are set out below:

The London Plan (March 2021)

3.10 The London Plan is the overall strategic plan for London and includes policies for sustainable development and energy within Chapter 9 (London's response to climate change). Key policies of relevance to this scheme are as follows:

- **Policy SI1 Improving Air Quality.** This states that, to tackle poor air quality, protect health and meet legal obligations the following criteria should be addressed:

  1. Development proposals should not:

     a. lead to further deterioration of existing poor air quality

     b. create any new areas that exceed air quality limits, or delay the date at which compliance will be achieved in areas that are currently in exceedance of legal limits

     c. create unacceptable risk of high levels of exposure to poor air quality.

  2. In order to meet the requirements in Part 1, as a minimum:

     a. development proposals must be at least Air Quality Neutral

     b. development proposals should use design solutions to prevent or minimise increased exposure to existing air pollution and make provision to address local problems of air quality in preference to post-design or retro-fitted mitigation measures

     c. major development proposals must be submitted with an Air Quality Assessment. Air quality assessments should show how the development will meet the requirements outlined above

     d. development proposals in Air Quality Focus Areas or that are likely to be used by large numbers of people particularly vulnerable to poor air quality, such as children or older people should demonstrate that design measures have been used to minimise exposure

  In order to reduce the impact on air quality during the construction and demolition phase development proposals must demonstrate how they plan to comply with the Non-Road Mobile

Machinery Low Emission Zone and reduce emissions from the demolition and construction of buildings following best practice guidance.

Development proposals should ensure that where emissions need to be reduced to meet the requirements of Air Quality Neutral or to make the impact of development on local air quality acceptable, this is done on-site. Where it can be demonstrated that emissions cannot be further reduced by on-site measures, off-site measures to improve local air quality may be acceptable, provided that equivalent air quality benefits can be demonstrated within the area affected by the development

- **Policy SI2 Minimising Greenhouse Gas Emissions.** This states that major development proposals should be net zero carbon, by reducing greenhouse gas emissions in operation and minimising both annual and peak energy demand in accordance with the following energy hierarchy:

  1. Be lean: use less energy

  2. Be clean: supply energy efficiently

  3. Be green: use renewable energy

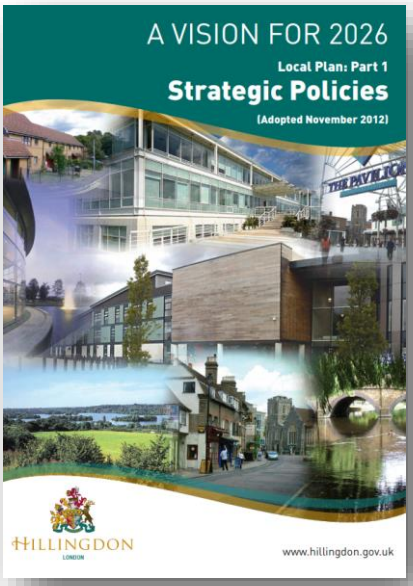
  4. Be seen: monitor, verify and report energy performance

- **Policy SI3 Energy Infrastructure.** This policy recognises that combined heat and power installations can have negative effects on London's air quality and shifts the focus of decentralised energy networks to the use of waste or secondary heat sources, where available. The policy also recognises that, compared to increasingly decarbonised electricity generation, gas-fired heat will become comparatively more carbon intensive as the electricity grid is further decarbonised.

Local

3.11 In determining the local context, London Borough of Hillingdon Local Plan Part 1: Strategic Policies (November 2012) sets out policy relevant to sustainable development.

London Borough of Hillingdon Local Plan Part 1: Strategic Policies (Novemer 2012)



3.12 The Local Plan demonstrates the importance the local authority places on maintaining and enhancing the natural environment, outlining a number of strategic objectives and policies to achieve this. The objectives and policies of relevance to the proposed development are outlined below.

3.13 **Strategic Objective 11:** Address the impacts of climate change, and minimise emissions of carbon and local air quality pollutants from new development and transport.

3.14 **Policy BE1: Built Environment.** This states that the Council will require all new development to improve and maintain the quality of the built environment in order to create successful and sustainable neighbourhoods, where people enjoy living and working and that serve the long-term needs of all residents. All new developments should maximise the opportunities for all new homes to contribute to tackling and adapting to climate change and reducing emissions of local air quality pollutants. The Council will require all new development to achieve reductions in carbon dioxide emission in line with the London Plan targets through energy efficient design and effective use of low and zero carbon technologies.

3.15 **Policy EM1: Climate Change Adaptation and Mitigation.** The Council will ensure that climate change mitigation is addressed at every stage of the development process by:

- Prioritising higher density development in urban and town centres that are well served by sustainable forms of transport.
- Promoting a modal shift away from private car use and requiring new development to include innovative initiatives to reduce car dependency.
- Ensuring development meets the highest possible design standards whilst still retaining competitiveness within the market.

- Working with developers of major schemes to identify the opportunities to help provide efficiency initiatives that can benefit the existing building stock.

- Promoting the use of decentralised energy within large scale development whilst improving local air quality levels.

- Targeting areas with high carbon emissions for additional reductions through low carbon strategies. These strategies will also have an objective to minimise other pollutants that impact on local air quality. Targeting areas of poor air quality for additional emissions reductions.

- Encouraging sustainable techniques to land remediation to reduce the need to transport waste to landfill. In particular developers should consider bioremediation as part of their proposals.

4. LOW EMISSION STRATEGY

4.1 With reference to the policy requirements, guidance and industry best practice detailed in Section 3, a Low Emission Strategy has been prepared for the proposed development. This provides details of the measures to be incorporated as part of the scheme to ensure the potential impact of the proposals on local air quality is minimised, and that future residents will not be exposed to unacceptable levels of pollution.

4.2 This Low Emission Strategy has been prepared pursuant to condition 12 of the approved application (ref. 76608/APP/2022/197), which states:

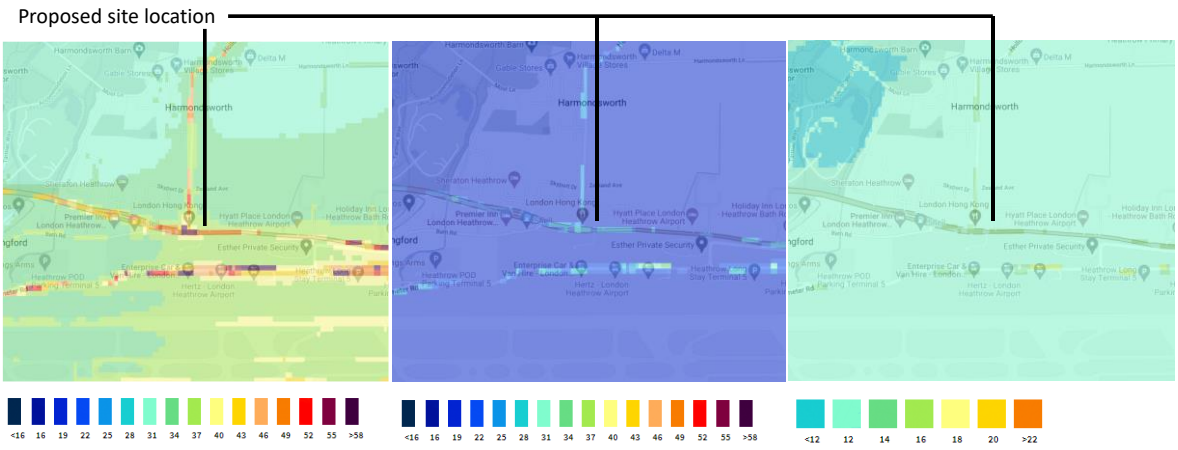
> *"No development shall commence until a low emission strategy (LES) has been submitted to and approved in writing by the Local Planning Authority. The LES shall address how the development has secured the protection of future occupiers from exposure to pollution. This should include, but is not restricted to:*
>
> - *confirmation of low/zero emission technology for energy provision;*
> - *consideration of the provision of EV charging infrastructure;*
> - *provision of suitable green infrastructure at the front boundary to provide screening of pollution emissions from the road;*
> - *active encouragement of the use of sustainable modes of transport such as; provision of cycle storage, provision of residential travel packs to encourage the use of sustainable modes of travel.*
>
> *The development shall then be constructed in accordance with the approved strategy and maintained thereafter.*
>
> *REASON*
>
> *As the application site is within an Air Quality Management Area, and to reduce the impact on air quality in accordance with policy EM8 of the Local Plan: Part 1 (November 2012), policy DMEI 14 of the London Borough of Hillingdon Local Plan (part 2), the London Borough of Hillingdon Air Quality Action Plan 2019-2023, London Plan (2021) policy SI1 and T4, and paragraphs 174(e), 186 and 188 of the National Planning Policy Framework (2021)."*

4.3 The Environment Act 1995 requires all Local Authorities to review air quality within their districts. If it appears that any air quality 'Objective' prescribed in the regulations and in the National Air Quality Strategy is not likely to be achieved, then the Local Authority must designate the affected area as an Air Quality Management Area (AQMA).

4.4 The site location, and the area from the southern boundary of the London Borough of Hillingdon to the border defined by the A40 corridor, is specified as an AQMA due to excessive levels of nitrogen dioxide (NO_2) resulting from road transport.

4.5 Figure 4.1 below, taken from the London Air Annual Pollution Maps, shows the levels of NO_2, PM_{10} and $PM_{2.5}$ measured at the site in 2016. The images below indicate that the levels of PM_{10} and $PM_{2.5}$ present at the site in 2016 would have been below both the National Air Quality Objective (NAQO) and World Health Organisation (WHO) guidelines, however the level of NO_2 would likely have been above the levels recommended within both guidelines.

Figure 4.1 Maps indicating annual levels of NO_2 (left), PM_{10} (middle) and $PM_{2.5}$ (right) exposure



4.6 The features of the proposed development that will ensure any impact on local air quality will be minimised are outlined below.

Low and Zero Carbon Technology

4.7 In order to achieve a minimum 35% reduction in carbon dioxide emissions over the Part L of the Building Regulations baseline, in line with the requirements of the London Borough of Hillingdon, a number of measures will be implemented.

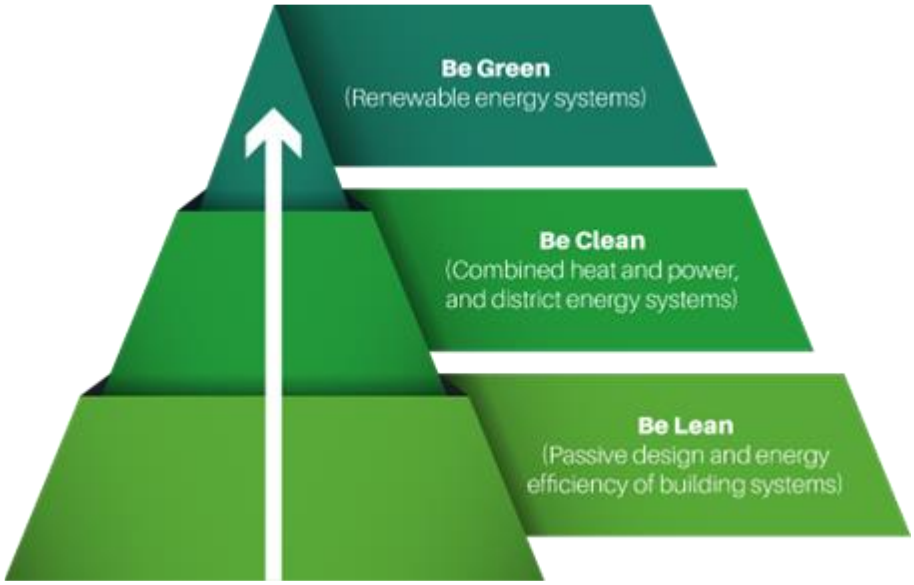
4.8 In addition to design interventions that will aid in minimising energy consumption associated with the proposed dwellings, such as the specification of efficient building fabric, high levels of air tightness, and minimised thermal bridging, low and zero carbon technology will be employed on-site.

4.9 The proposed energy strategy is based upon the principles of the energy hierarchy on the basis that it is preferable to reduce CO_2 emissions through reduced energy consumption above decarbonisation through alternative energy sources.

4.10 The tiers of the Energy Hierarchy are:

- Be Lean Use less energy
- Be Clean Supply energy efficiently
- Be Green Use renewable energy

Figure 4.3 The Energy Hierarchy



4.11 The proposed development has been designed to maximise the quantum of residential accommodation, whilst ensuring that the scheme is not overly dense and respects the scale and massing of the surrounding buildings. The massing and orientation are therefore constrained by the site footprint, shape and area, and the need to fit in with the surroundings.

4.12 The measures proposed at each level of the Energy Hierarchy are set out below.

4.13 The proposed domestic ‘Be Lean’ measures include:

- High levels of building fabric insulation to minimise heat loss

- High levels of air tightness to reduce heat loss through infiltration
- Low energy LED lighting to minimise artificial lighting energy consumption
- Whilst all the residential units are to be provided with opening windows to mitigate against overheating, outside air will be provided via mechanical ventilation with heat recovery (MVHR)
- Energy efficient systems and equipment will be installed to minimise operational energy demand

4.14 The proposed domestic 'Be Green' measures include:

- Employment of a highly efficient, all-electric air source heat pump (ASHP) systems to provide space and water heating

4.15 Energy modelling undertaken for the proposed development indicates the measures above will combine to deliver an approximate 57.5% reduction in carbon dioxide emissions over the Part L:2021 baseline. This is in exceedance of the requirements of the London Borough of Hillingdon to deliver a minimum 35% reduction through on-site means alone. Through the implementation of the measures outlined above, the carbon dioxide emissions associated with the proposed development will be minimised and, whilst this does not impact on local air quality, this will aid in minimising emissions to the atmosphere from the proposed development.

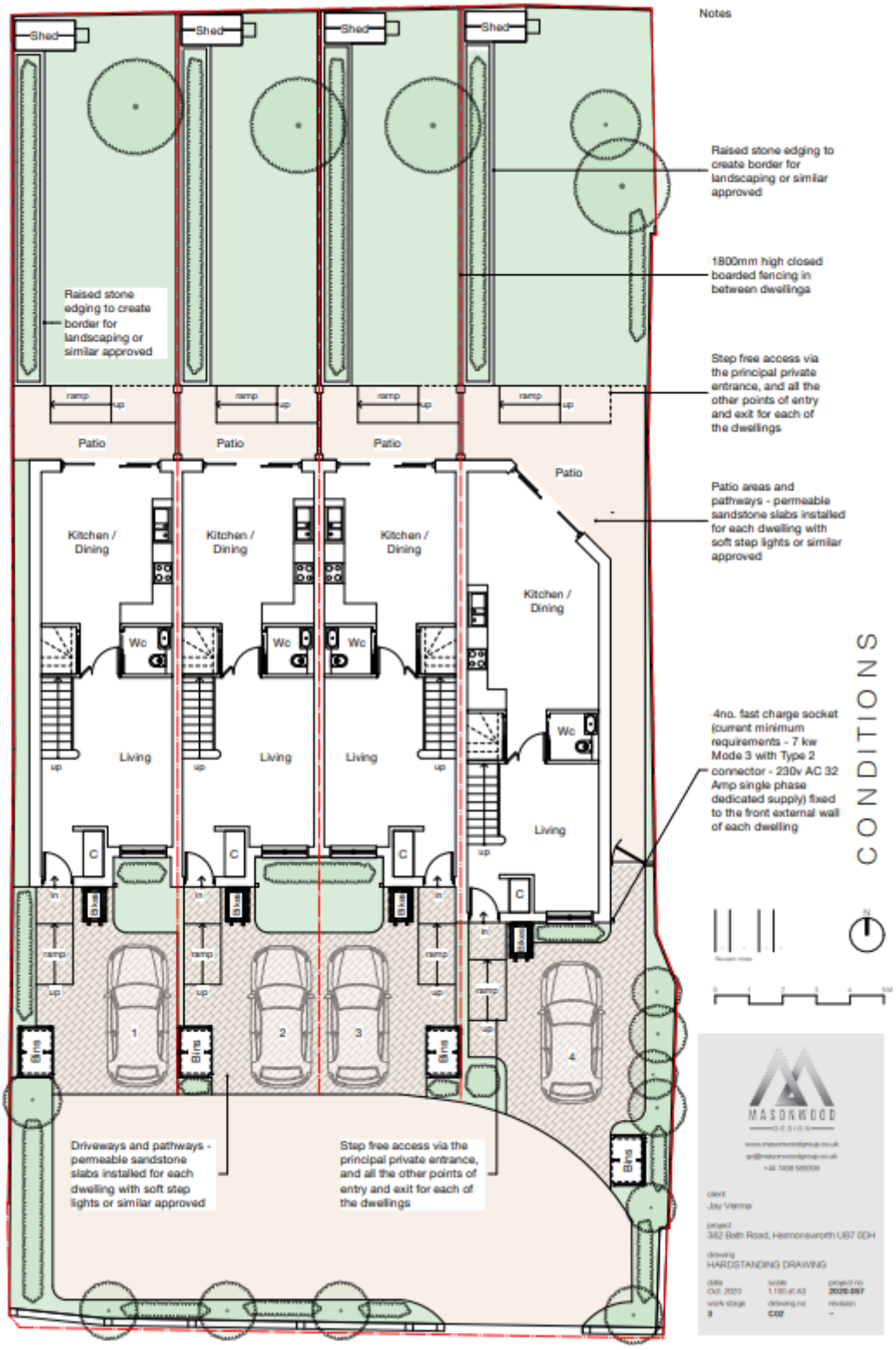
4.16 Through the proposed employment of ASHP systems, the need for fossil fuel combustion on-site to deliver space heating and domestic hot water will be eliminated. In this way, there will be zero nitrous oxide (NO_x) and particulate matter (PM_x) emissions associated with the space and water heating systems to be provided as part of the proposed development. This will therefore aid in minimising the impact of the proposals on local air quality.

Provision of Electric Vehicle Charging

4.17 As shown in Figure 4.4 below, prepared by Masonwood Design, a total of four fast-charge electric vehicle charging sockets will be provided, with one socket to be provided per dwelling. The provision of electric vehicle charging points will encourage the use of electric vehicles as an alternative to traditional combustion-engine vehicles. This will therefore aid in minimising NO_x and PM_x emissions associated with combustion-engines, aiding in minimising the impact of the proposed development with respect to transport emissions on local air quality.

4.18 Further details of the proposed infrastructure are provided in the image below.

Figure 4.4 Proposed electric vehicle charging infrastructure provision



Provision of Green Infrastructure

4.19 As shown in Figure 4.5 below, the site in the existing case features very limited soft landscaping and green infrastructure, with the site predominantly hardstanding in nature. It is noted that there is an

area to the rear of the site that appears to be overgrown with existing vegetation, however it is not known at this stage what this area of vegetation comprises.

Figure 4.5 The existing site

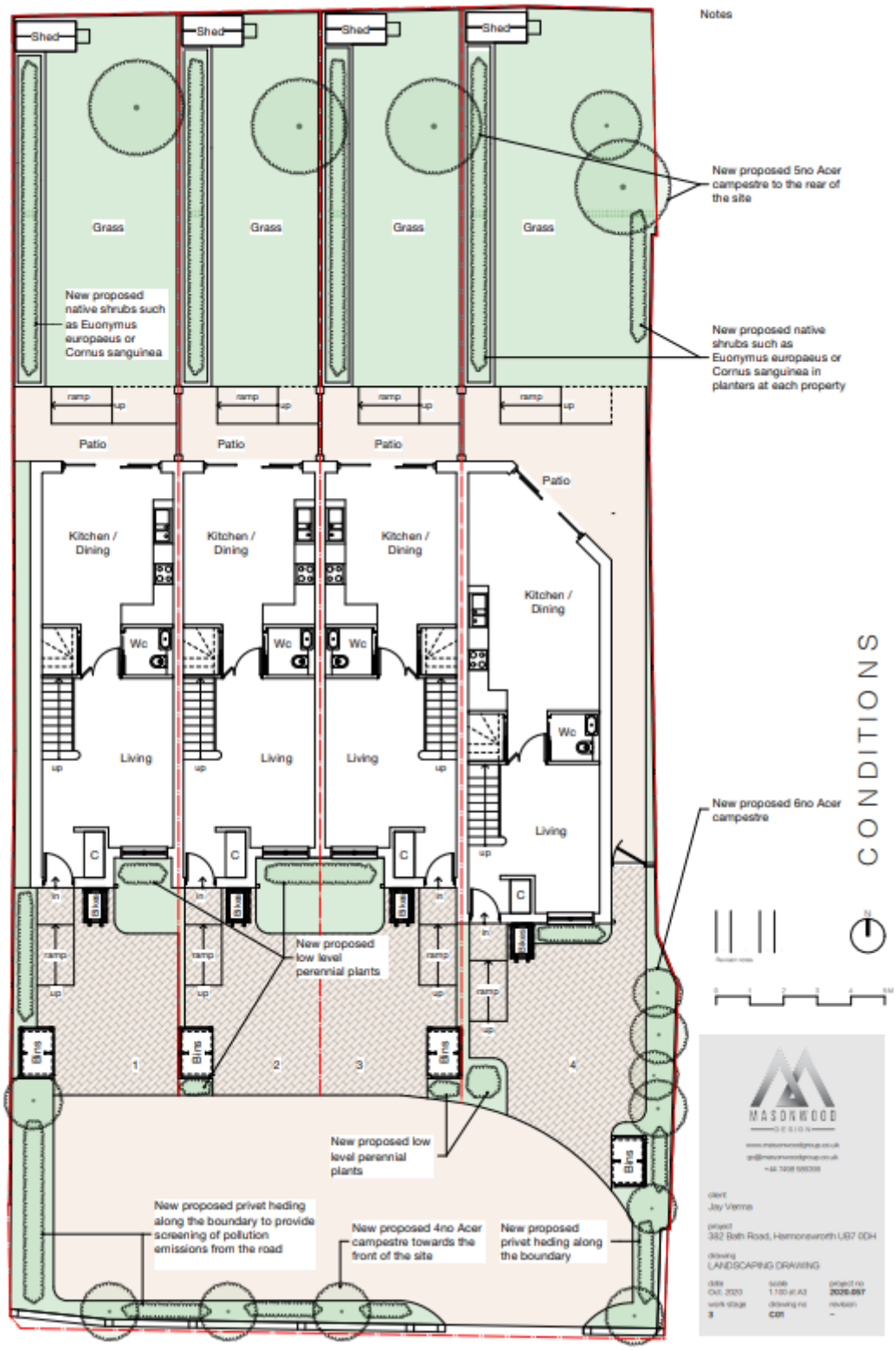
Approximate site boundary

4.20 The proposed development will seek to deliver soft landscaping within the rear gardens of the proposed dwellings, in addition to smaller areas of planting within the driveways at the front of the site. The proposed planting will include:

- New tree planting at the southern boundary, and along the eastern and western boundaries of the driveways in front of proposed units 1 and 4;
- Privet hedge planting along the southern, eastern and western boundaries;
- Native shrubs in the rear gardens of the dwellings, along the proposed fences;
- Amenity grass within the rear gardens; and
- Low level perennial plant species to be provided within the front driveways of each of the proposed dwellings .

4.21 The provision of new planting and green infrastructure, which is shown in Figure 4.6 below, will aid in the absorption of pollutants in the air, contributing to an improvement of local air quality.

Figure 4.6 Proposed soft landscaping

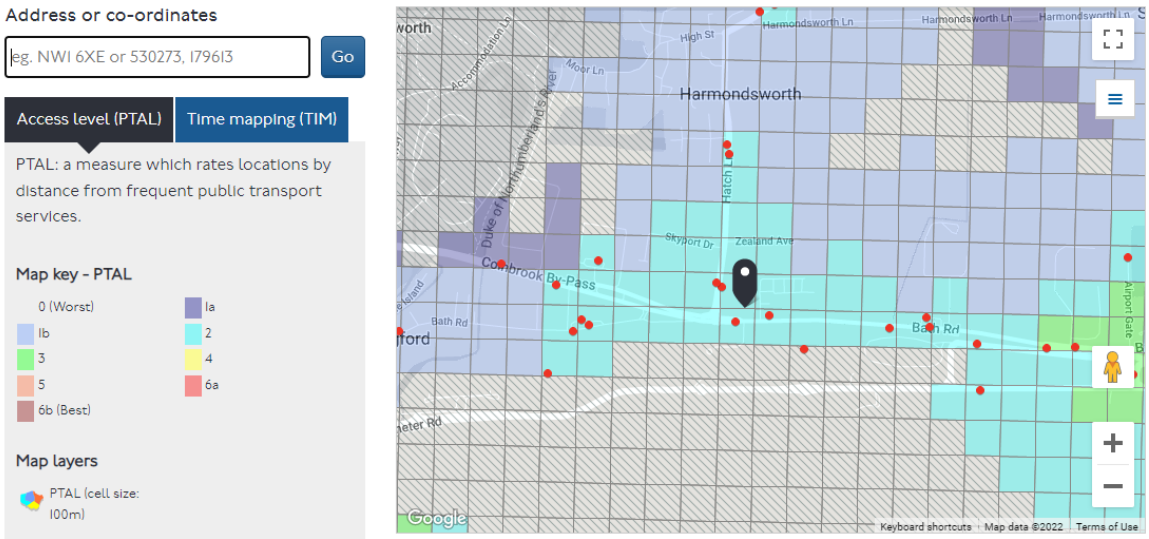


Access to Public Transport

4.22 The site has public transport connections for the London bus network, with the site scoring a PTAL rating of 2. The site is served by a number of regular bus stops, including two located to the southeast

of the site on Bath Road, both of which are served by the numbers 4, 7, 81, and 423 bus services, which provide access to a range of destinations, including Uxbridge, Slough Town Centre, Heathrow Airport Terminal 5, Maidenhead Town Centre, and Hounslow.

Figure 4.7 Extract from TfL PTAL map



4.23 The site also benefits from pedestrian access to amenities, including retail and leisure facilities to the north, via pedestrian walkways on the surrounding road network. In addition, the Transport for London (TfL) Cycleway route C is located to the north of the site, providing a cycle route between West Drayton and central London. Dedicated cycle storage areas will be provided within the front drive of each proposed dwelling, as shown in the plans included in Figures 4.4 and 4.6 above, with sufficient space for the storage of two bicycles. The provision of dedicated cycle storage and the presence of pedestrian footpaths within the surroundings of the site will encourage the use of active travel methods in favour of private cars. This will aid in minimising carbon emissions associated with the travel of future residents and visitors to the site, therefore mitigating the potential impact of the scheme on local air quality.

Air Quality Assessment

4.24 An Air Quality Assessment, prepared by Create Consulting Engineers Limited in January 2022, was submitted in support of the approved application. This Assessment concludes that, through the employment of electric-only systems to deliver space and water heating to the proposed dwellings as detailed above, there will be no NO_x or PM_{10} emissions generated.

4.25 Further to this, dispersion modelling undertaken as part of the Air Quality Assessment indicated that the predicted annual NO_2, PM_{10} and $PM_{2.5}$ concentrations would be below the relevant Air Quality Objectives under all tested scenarios. It was concluded that the proposed development would have a negligible impact on annual mean levels of these pollutants in the local area.

5. SUMMARY

5.1 This Low Emission Strategy provides an overview as to how the proposed development at 382 Bath Road, Harmondsworth contributes to sustainable development in the context of the strategic, design and construction considerations.

5.2 Consideration has been given to the Hillingdon Local Plan Part 1: Strategic Policies in the formulation of this strategy, aiming to minimise the impact of the proposed development on local air quality during construction and operation, and ensure future residents are not exposed to unacceptable levels of pollution.

5.3 Section 4 of this report demonstrates that the siting and design of the proposals support relevant policy relating to sustainable development, based on the principles outlined in the Hillingdon Local Plan Part 1: Strategic Policies strategic objective 11, and policies BE1 and EM1. This shows that the proposed development:

- will employ electric-only air source heat pump (ASHP) systems to deliver space and water heating, eliminating the need for fossil-fuel combustion on site;
- will provide electric vehicle charging facilities to encourage the use of alternatives to combustion engine cars;
- will deliver new planting and green infrastructure, which will aid in improving local air quality; and
- will promote cycling and walking, and deter private car ownership.

5.4 Overall, the proposals constitute sustainable development in accordance with local policy requirements, and will provide a development that seeks to promote these principles in operation.

A1. SITE PLAN

Notes

CONDITIONS

Revision notes

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PROPOSED SITE PLAN

date	scale	project no
Oct. 2022	1.200 at A3	**2022.057**
work stage	drawing no	revision
3	**C04**	–

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A2. GENERAL NOTES

A2.1 The report is based on information available at the time of the writing and discussions with the client during any project meetings. Where any data supplied by the client or from other sources have been used it has been assumed that the information is correct. No responsibility can be accepted by Iceni Projects Ltd for inaccuracies in the data supplied by any other party.

A2.2 The review of planning policy and other requirements does not constitute a detailed review. Its purpose is as a guide to provide the context for the development and to determine the likely requirements of the Local Authority.

A2.3 No site visits have been carried out, unless otherwise specified.

A2.4 This report is prepared and written in the context of an agreed scope of work and should not be used in a different context. Furthermore, new information, improved practices and changes in guidance may necessitate a re-interpretation of the report in whole or in part after its original submission.

A2.5 The copyright in the written materials shall remain the property of Iceni Projects Ltd but with a royalty-free perpetual licence to the client deemed to be granted on payment in full to Iceni Projects Ltd by the client of the outstanding amounts.

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A2.7 These terms apply in addition to the Iceni Projects Ltd "Standard Terms of Business" (or in addition to another written contract which may be in place instead thereof) unless specifically agreed in writing. (In the event of a conflict between these terms and the said Standard Terms of Business the said Standard Terms of Business shall prevail.). In the absence of such a written contract the Standard Terms of Business will apply.