JANUARY 2018

Sustainability & Energy Statement - Addendum

Da Vinci House, 44 Saffron Hill, London, EC1N 8FH

Iceni Projects Limited on behalf of

E&A (Saffron Hill) Limited

January 2018

ICENI PROJECTS LIMITED ON BEHALF OF E&A (SAFFRON HILL) LIMITED

Sustainability & Energy Statement - Addendum
DA VINCI HOUSE, 44 SAFFRON HILL, LONDON, EC1N 8FH

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1. INTRODUCTION

1.1 This Addendum addresses the comments on Energy and Sustainability related to the Planning Application 2017/4555/P, for the Site at Da Vinci House, 44 Saffron Hill, London, EC1N 8FH, in the London Borough of Camden to provide additional detail regarding the proposals consisting of

"Change of use of the lower ground and part ground floor from an internal car parking area to Class B1a (Office) use, together with minor external alterations."

1.2 The addendum to the submitted Sustainability and Energy Statement v2 provides further information concerning:

- Energy
    - A revised energy strategy to update the predicted CO_2 emissions saving, based on revisions to the mechanical and electrical servicing strategy
    - Additional detail on the system efficiencies specified for the scheme
    - Confirmation of specific key additional 'Be Lean' CO_2-saving measures previously considered and rejected, with reasons.
    - Additional detail regarding U-values and heating/cooling energy consumption.
    - Further commitment to additional best-practice measures with details, including:
        - User-friendly building energy management systems and system controls
        - Energy metering and sub-metering
        - High-efficiency system pumps, variable speed drives, and high overall system efficiencies
        - Centralised switching of appliances
- Sustainability
    - Confirmation that the scheme proposes to achieve a BREEAM 'Very Good' rating, with a minimum unweighted score of:
        - 60% of credits in the Energy category
        - 60% of credits in the Water category

        - 40% of credits in the Materials category

- Air quality

    - The scheme introduces new receptors to an area with existing background air quality that does not meet annual objectives. Due to the fact that the development will be car free and air source heated with no local emissions there will be no worsening of local air quality issues as a result of the development. Furthermore, as the change of use is from a car park, the development will actually provide positive benefits to local air quality.

    - However, the health impacts of existing air pollution on occupants will be restricted as far as possible.

2. ENERGY

2.1 The submitted Sustainability & Energy Statement of July 2017 contained an energy strategy developed by application of the London Plan Energy Assessment guidance and in line with the principles of the Energy Hierarchy indicating the potential of the scheme to achieve a 15.70% CO_2 emissions reduction.

2.2 Due to the ongoing mechanical and electrical design of the space, a number of changes have been implemented which require an update to the CO_2 reduction calculations.

2.3 The following section includes a breakdown of measures proposed at each level of the Energy Hierarchy, including a renewable energy options study, and a calculation of the CO_2 savings achieved for the proposed scheme.

Energy Hierarchy

2.4 The proposed energy strategy is based upon the principles of the Energy Hierarchy on the basis that it is preferable to reduce carbon dioxide emissions through reduced energy consumption above decarbonisation through alternative energy sources.

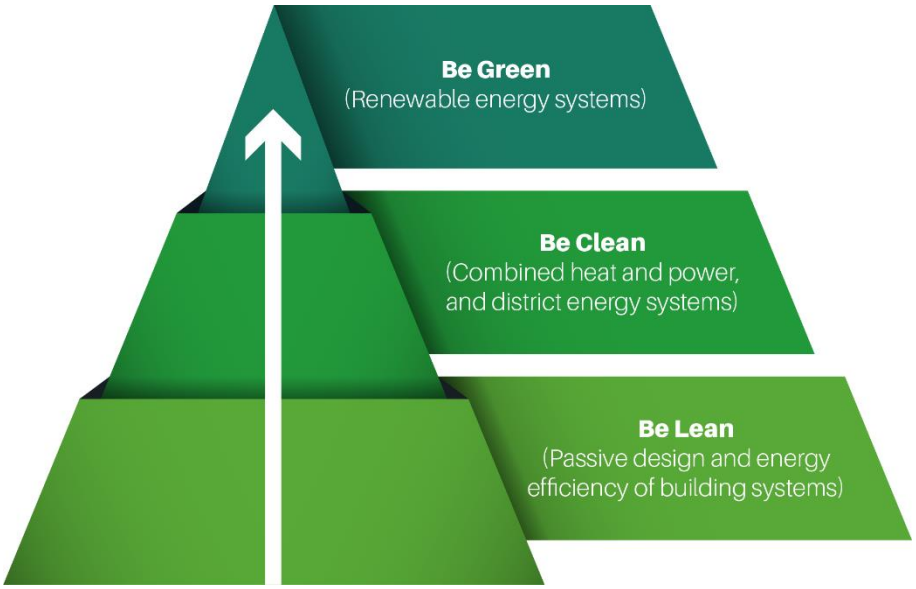
2.5 The tiers of the Energy Hierarchy are:

1. Be Lean Reduce energy demand through the passive design and layout of the scheme, using natural lighting and ventilation.

2. Be Clean Supply energy efficiently using either combined heat and power or district energy systems

3. Be Green Use renewable energy systems to further reduce emissions

Figure 2.1 – The Energy Hierarchy



2.6 By applying the Energy Hierarchy during the design process, the residual energy demand that needs to be supplied via burning fossil fuels is therefore minimised, and significant CO_2 savings are achieved during the operational phase of the development's lifecycle. This first principle relies on energy efficient design and the site characteristics such as local climate, surroundings, scale and size, which can all influence the energy savings that can be achieved.

2.7 The second principle prioritises the use of low carbon sources of energy. This is on the basis that low carbon technologies can be cost-effective and provide significant carbon savings when compared to conventional technologies.

2.8 The third principle of the hierarchy promotes the use of renewable energy technologies. Whilst these technologies can be relatively expensive to install, they do offer the potential to significantly reduce carbon emissions.

'Be Lean' (Use Less Energy)

2.9 Within the first stage of the Energy Hierarchy, it was proposed to incorporate high levels of passive and energy efficient design measures in order to reduce the development's energy consumption and associated CO_2 emissions. This approach has identified the following viable features and design that will be incorporated into the development.

2.10 Office spaces tend to require cooling more often than heating due to internal gains from lighting, people and equipment. Therefore, minimising heat gain to the space will provide greater levels of energy savings than minimising heat loss. The passive design principles of the proposed scheme aim to utilise the thermal mass, high ceilings and shading provided by the basement to minimise heat build-up from external sources.

2.11 Given the nature of the proposals function as an office space within an existing building, it is not possible to incorporate additional passive design features due to practical design concerns.

2.12 Building fabric U-values are a measure of the rate of heat transfer through a building element over a given area, under standardised conditions. They measure the rate at which heat is lost or gained through a fabric. The following U-values are provided as an indicative guide for the building elements and will be further evaluated during detailed design, in order to best minimise heat loss/gain as required by the season:

Table 2.1 **Proposed building fabric U-values**

Building Fabric Performance	**Part L2A:2013 backstop U-values (W/m²K)**	**Proposed U-values (W/m²K)**
External/basement wall	0.35	0.26
Windows	2.20	1.6
Roof	0.25	n/a
Ground floor	0.25	0.22

2.13 A summary of the proposed glazing performance for each of the different glazed elements is set out in the table below.

Table 2.2 **Proposed building glazing properties**

Window Location	**Proposed U-value (including frame) (W/m²K)**	**Proposed light transmission (%)**	**Proposed g-value**
Walls	1.6	71	0.4

2.14 A high level of air tightness is proposed, where a level equal to or below $5m^3/h/m^2$ shall be targeted throughout, meaning that air infiltration between the internal and the external environment will be largely controlled and space heating/cooling demand further reduced.

2.15 High efficiency plant and equipment is proposed in order to limit the energy consumed to provide the required level of indoor environmental performance and control. Performance efficiency values were tested and improved in EDSL Tas models to benchmark the resulting predicted CO_2 reduction.

2.16 Lighting in all spaces will be provided by high efficiency LED systems, with a lighting power density of 1.4 W/m² per 100 lux for all office spaces.

2.17 Lighting controls will employ presence detection to ensure that lighting energy consumption is minimised.

2.18 Hot water to the basins will be provided by electric hot water heaters. The hot water systems shall have a hot water return leg complete with return pump so as minimise cold legs in the system. The showers will be electric showers. The design team has extensively investigated alternative heat sources for hot water, including heat pumps and gas fired water heaters. Heat pump options were found to be too inefficient with additional space issues for external condensers, and connection to the building's gas supply was deemed to be technically onerous, given that space heating will be provided by electric heat pump.

2.19 Heating and cooling will be provided using a reversible air source heat pump VRF system, with a heating coefficient of performance of 3.9 and a cooling seasonal energy efficiency ratio of 6.1.

2.20 Outside air will be provided to the office spaces via central plant, with a supply and extract SFP of 0.845 W/l/s. The system will also utilise heat recovery through a plate heat exchanger with an efficiency of 69%.

2.21 The design was developed in line with the GLA's recommended 'Cooling Hierarchy' approach which applies a similar principle to the thorough decision-making process of the 'Energy Hierarchy' applied specifically with the aim of reducing CO_2 emissions from cooling:

Minimisation of internal heat generation through energy efficient design

- Heat gain from lighting is kept to a minimum as a result of an energy-efficient lighting design solution.
- Heat gains from equipment will be minimised through the specification of low energy systems.

Reduction of the amount of heat entering the building in summer

- Basement walls and floor provide a high degree of in-built thermal mass.
- Fenestration is extremely limited due to site constrains, minimising solar gain.

Management of the heat within the building through exposed thermal mass and high ceilings

- The space has high ceilings of 3.49m, reducing heat build-up in occupied areas

Passive ventilation

- Passive ventilation is not possible due to the below ground nature of the scheme, with no opportunity for openings in facades to provide ventilation.

Mechanical and active cooling

- Cooling is delivered to the building by a highly efficient air source heat pump VRF system with a seasonal energy efficiency rating (SEER) of 6.1. Due to the passive design features incorporated within the proposals, it is only anticipated that mechanical cooling will be employed during periods of hot weather.

'Be Clean' (Supply Energy Efficiently)

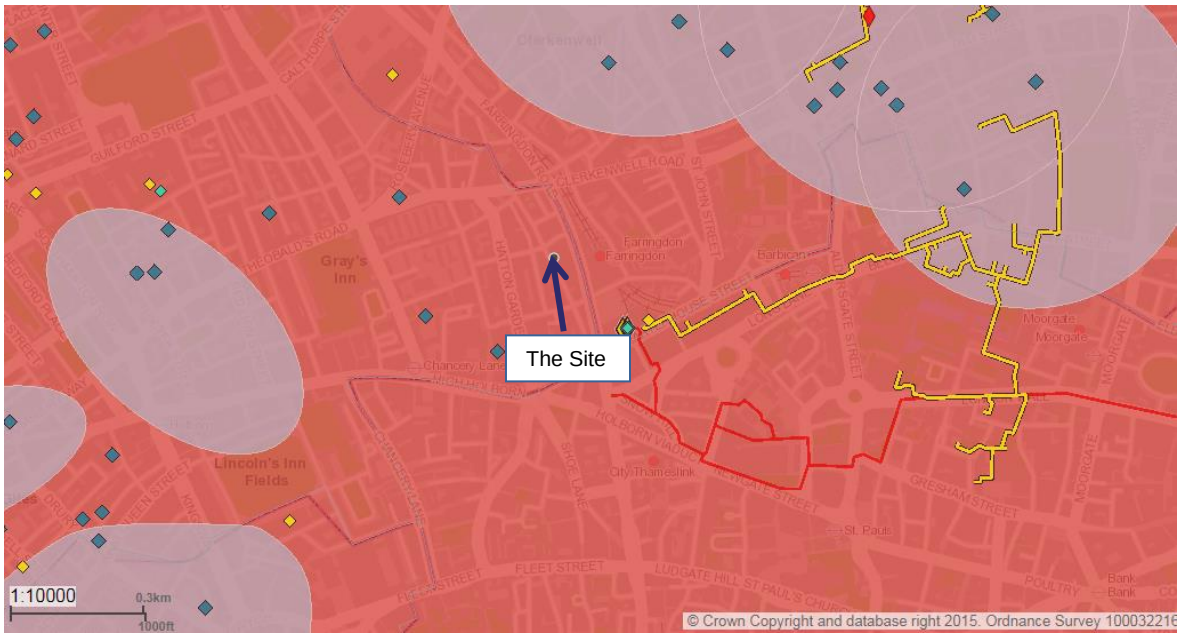
2.22 The potential for the proposed development to incorporate a low carbon heating/cooling system has been reviewed for the scheme.

2.23 The London Heat Map is a tool provided by the Mayor of London to identify opportunities for decentralised energy projects in London. It builds on the 2005 London Community Heating Development Study.

2.24 The image below illustrates the heat demand (shown as areas of red (high heat demand) and blue (low heat demand)), major energy supply plants (shown as blue and yellow rhombuses; referred to as communal boilers and CHP sites, respectively), proposed energy centres (shown as red rhombuses), existing and potential district energy networks (shown as yellow and red lines, respectively), and opportunity areas for these networks in the vicinity of the Site (highlighted in light purple). This shows that the Site is fairly close to the existing Citigen district heating network, which provides both heating and cooling to a number of buildings in the City of London and London Borough of Islington.

2.25 In order to connect to this network, pipes would have to be laid along St Cross Street, down Farringdon road and across Charterhouse Street, over a distance of approximately 450m. Indicative infrastructure connection costs are £1,000 per metre, with an approximate pipework infrastructure cost alone of £450,000. This renders a potential connection unviable, given the scale of the proposed scheme.

Figure 2.2 – Extract from London Heat Map



2.26 Although a number of communal boilers exist within the vicinity of the site, the likely costs and complexity of connection to the proposed scheme that has a limited demand for heating and hot water means that connection to these boilers is unviable.

2.27 The potential integration of conventional gas-fired CHP plant to provide low carbon heat and power on site has been evaluated for the development, in compliance with industry best practice and appropriate planning policies.

2.28 Good practice CHP system design follows that engines are best sized to meet the base heating demand of a development. System sizing in response to the base load allows the CHP engine to run for the whole year without significant modulation, preventing engine wear, reduced life expectancy and efficiency drop.

2.29 Given the nature of the proposed scheme, heating demands are likely to be insignificant and characterised by short periods of peak demand and longer periods of negligible demand. Therefore CHP is not considered viable for the scheme.

'Be Green' (Utilise Renewable Technologies)

2.30 A full review of potentially applicable renewable technologies has been carried out, considering both the effectiveness and viability of the different technologies. Further details of each technology and their associated assessment in relation to the development are provided below.

- **Biomass** – this technology is not considered a practical solution to reducing CO_2 emissions, in the view of limited storage space for the combustible material, air quality issues associated with

the combustion of material in urban environments, accessibility of Site for regular deliveries of the material, and associated carbon emissions of this technology which are not normally accounted for within energy modelling;

- **Air Source Heat Pump (ASHP)** – air source heat pump technology is already proposed to serve the building's cooling demand. It is therefore practical to utilise a reversible air source heat pump to provide the heating. As stated above, a high efficiency VRF system has been modelled for the building with a heating coefficient of performance of 3.9 and a cooling seasonal energy efficiency ratio of 6.1. The proposals have considered supplying hot water via air source heat pump technology. This has been rejected because of limited space for a condenser unit that would be installed externally, acoustic issues and the limited efficiency of heat pumps when used for high temperature water heating, necessary to eliminate the risk of legionella bacteria;

- **Ground Source Heat Pump (GSHP)** – this technology is presently rejected on the basis that there are uncertainties concerning the thermal properties of the ground, and testing and installation costs are likely to be excessive for a project of this scale due to the difficulty in drilling boreholes under an existing building;

- **Photovoltaics (PV)** – due to the fact that minimal external works are included as part of these proposals and legal issues regarding the lease of the space and access to the roof, it is not possible to add PVs to the roof of the building. The use of PV panels is therefore rejected;

- **Solar Thermal** – again, as minimal external works are proposed, the use of solar thermal panels is not possible. This technology is therefore rejected;

- **Wind Turbines** – this technology is rejected on the basis of its potential impact on visual amenity and relatively low efficiency from unpredictable, turbulent wind conditions in urban locations.

2.31 The following graph and table show the breakdown of the energy strategy performance resulting from Energy Hierarchy measures adopted by the proposed development:

Figure 2.3 – Proposed building regulated CO2 emissions

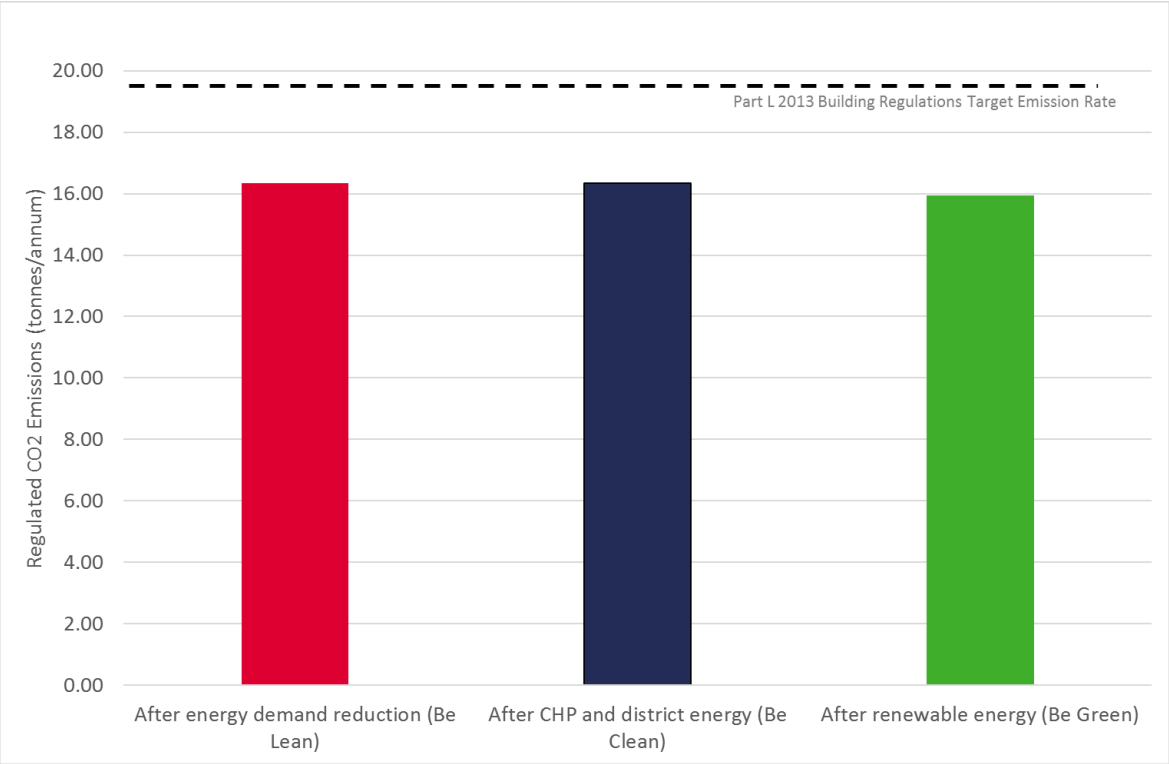


Table 2.3 **Regulated CO_2 emissions after each stage of the Energy Hierarchy**

Energy Hierarchy Stage	Unregulated CO_2 emissions	Regulated CO_2 emissions	Regulated CO_2 emissions reduction	
	(Tonnes CO_2/annum)	(Tonnes CO_2/annum)	(Tonnes CO_2/annum)	% development regulated emissions
Baseline: Building Regulations Part L:2013 compliant development	24.14	19.55	-	-
After energy demand reduction (Be Lean)	24.14	16.34	3.22	16.48%
After CHP and district energy (Be Clean)	24.14	16.34	0.00	0.00%
After renewable energy (Be Green)	24.14	15.93	0.40	2.05%
Total cumulative savings			3.62	18.53%

2.32 As shown above, the combination of energy efficiency and renewable energy measures can be seen to provide a 18.53% reduction in regulated CO_2 emissions over the Part L2A:2013 baseline, together with a 3.62% saving from renewable technologies (air source heat pump for space heating)

2.33 BRUKL output sheets showing the results from the 'Be Lean' and 'Be Green' stages of assessment are provided in Appendix A1.

2.34 A comparison of the CO_2 emissions on a floor area basis from the submitted energy strategy and this addendum is provided below.

Figure2.4 – Annual CO_2 emissions comparison – Be Lean

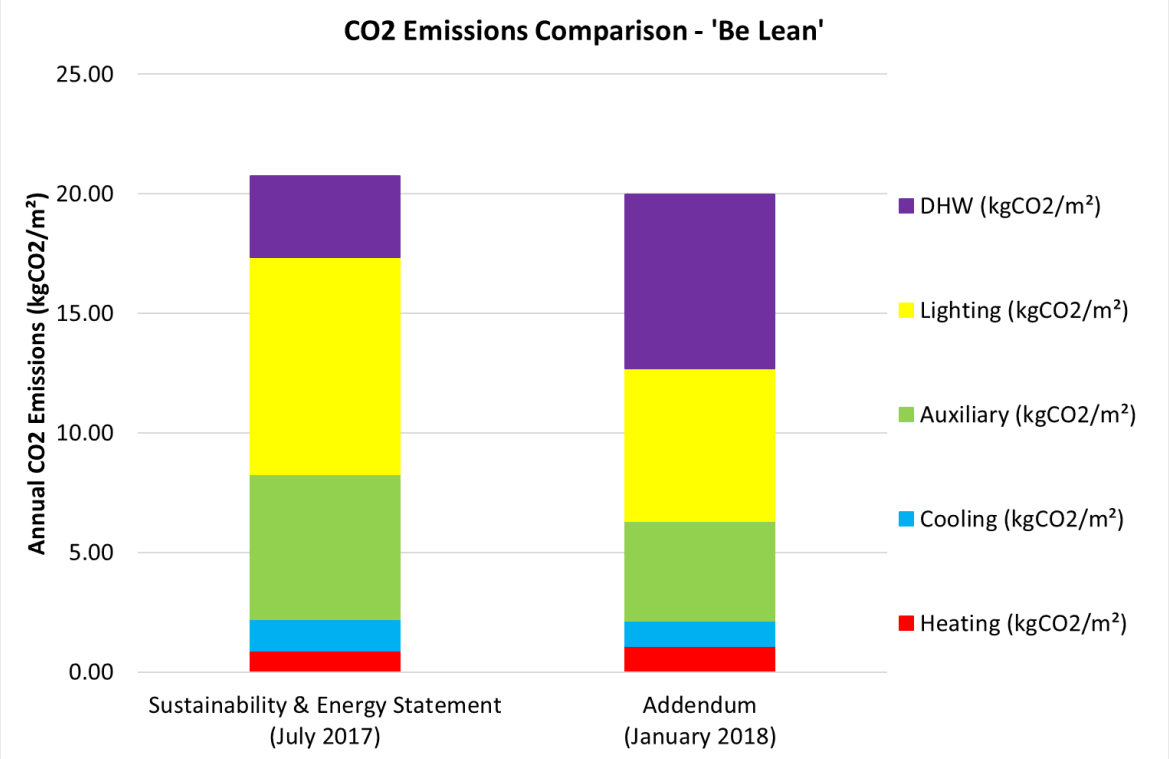
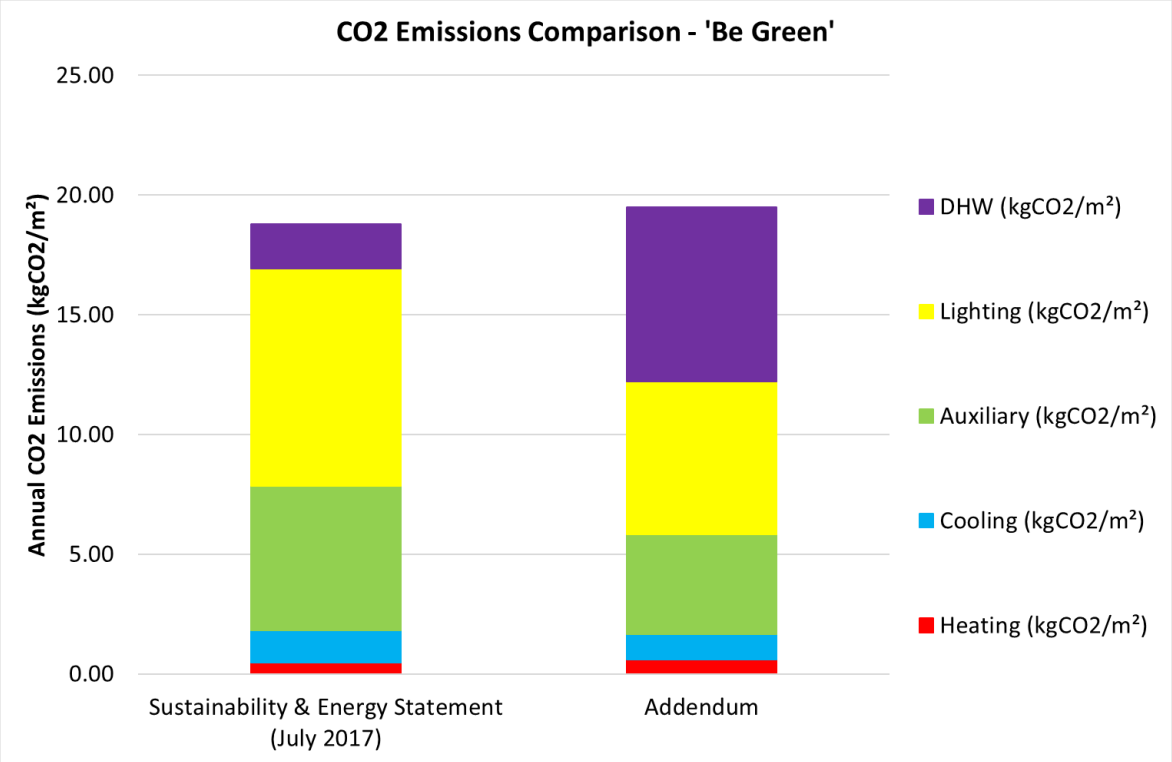


Figure 2.5 - Annual CO_2 emissions comparison – Be Green



2.35 The graphs presented above indicate how the CO_2 emissions breakdown from the proposed scheme has changed due to the revisions to the mechanical and electrical servicing strategy.

2.36 Whilst the heating and cooling emissions are unchanged from those submitted in July 2017, the development of the servicing strategy has led to changes in the auxiliary, lighting and hot water emissions.

2.37 Improvements to the auxiliary emissions have been bought about through the specification of ventilation units with lower specific fan power (SFP). As detailed above in paragraph 2.20, the proposed ventilation units have an internal SFP of 0.845 W/l/s, a significant improvement over the 2.0 W/l/s assumed in the original strategy.

2.38 The actual lighting design of the open plan office area shall achieve circa 1.4 W/m^2 per 100 lux, a significant improvement over the 2 W/m^2 assumed in the original strategy.

2.39 However, due to limitations of the potential to supply hot water via air source heat pump technology detailed in paragraphs 2.18 and 2.30, hot water emissions have increased due to the use of electric water heaters. All other options to provide hot water via alternative sources have been fully explored by the design team.

Additional Information

2.40 Opportunities for more energy efficient opportunities for conversions described in Camden Planning Guidance (CPG) 3 'Sustainability' have been taken into consideration in the design of the proposed scheme.

2.41 The guidance refers to Camden Core Strategy Policy CS13, paragraph 13.9, which expects development or alterations to existing buildings to include proportionate measures to be taken to improve their environmental sustainability, where possible.

2.42 Over the 10% of the project cost will be spent on making improvements to the existing building to reduce carbon emissions. The following proposed improvements have been included in the design:

- **High efficiency lighting:** The proposals will utilise high efficiency LED lighting internal lighting, with presence detection also employed to further reduce lighting energy consumption in appropriate areas of the building
- **Insulation**: the following insulation levels are proposed for the building fabric

Building Fabric Performance	**Part L2A:2013 backstop U-values (W/m²K)**	**Proposed U-values (W/m²K)**
External/basement wall	0.35	0.26
Windows	2.20	1.6
Ground floor	0.25	0.22

The insulation levels proposed for the building fabric have been determined through optimising heat losses and gains for the space, and in compliance with Part L of Building Regulations.

Office spaces generate large amounts of internal heat through occupancy, lighting and equipment. If insulation levels were to be further increased, this would lead to a rise in emissions due to additional space cooling to remove heat, offsetting any savings from heating emissions. As office spaces tend to require more cooling than heating over the course of a year, increasing insulation levels would lead to a rise in CO_2 emissions.

- **Heating and cooling**: the existing building is currently a car parking space with limited services provision. The proposals will include a high efficiency reversible air source heat

pump system to provide heating and supplementary cooling to the building; the system will have a minimum COP of 3.9 for space heating, while cooling will be provided with a minimum SEER of 6.1.

- **Hot water:** As there is no gas supply to the building, hot water to the basins will be provided by electric hot water heaters. The hot water systems shall have a hot water return leg complete with return pump so as minimise cold legs in the system. The showers will be electric showers.

- **Mechanical ventilation:** a central plant will provide mechanical ventilation to the office space with an internal SFP of 0.845 W/l/s and heat recovery with an efficiency of 69%.

2.43 All the retrofit improvements described in Appendix 1 of CPG 3 have been considered for the proposals and details are reported in the following table:

Measure	**Comments**
Draught proofing	The proposed scheme will have limited seals to exterior doors and windows, due to the location on a lower ground basement and limited number of apertures. A minimum air permeability of 5 m^3/hm^2 at 50Pa is targeted.
Reflective radiator panels	n/a. Radiators are not proposed for the scheme.
Overhauling/upgrading windows	Very few windows are included in the proposals and their U-value will limited to 1.6 W/m^2K for a double glazed unit. This figure includes the window frame.
New boiler	No services are present in the existing buildings. A high efficient air source heat pump is proposed to provide heating. Hot water will be provided to the basins via electric hot water heaters with electric showers.
LED lighting	The proposals will utilise high efficiency LED lighting internal lighting. A lighting power density of 1.4 W/m^2 per 100 lux will be provided for all office spaces.
Meters, timers, sensors, controls on heating or lighting	Lighting controls will employ presence detection to ensure that lighting energy consumption is minimised.

Mechanical ventilation with heat recovery	Outside air will be provided to the office spaces via central plant, with an internal SFP of 0.845 W/l/s. The system will also utilise heat recovery with an efficiency of 69%; all the units will have DC powered variable speed fans to minimise operational energy consumption
Insulation	
- *Hot water tank & pipes*	All
- *Roof*	n/a
- *Walls Internal*	n/a
- *Walls External*	A U-value of 0.26 W/m2K is proposed.
- *Floor*	A U-value of 0.22 W/m2K is proposed.
Renewable energy technology	
- *Solar PV panels*	There is no potential to add PV to the roof of the building due to legal issues regarding the lease of the space and access to the roof. There are no alternative spaces on the site where PV could be located safely and effectively where it would not be shaded for large periods of the year.
- *Solar thermal (hot water) panels*	As above.
- *Ground source heat pumps*	This technology is presently rejected on the basis that there are uncertainties concerning the thermal properties of the ground and testing and installation costs are likely to be excessive for a project of this scale due to the difficulty in drilling boreholes under an existing building.
Double glazed windows/ secondary glazing	Very few windows are included in the proposals and their U-value will be limited to 1.6 W/m^{2}K for the double glazed unit. This figure includes the window frame.
Combined heat and power unit	Good practice CHP system design follows that engines are best sized to meet the base heating demand of a development. Given the nature of the proposed scheme, heating demands are likely to be insignificant and characterised by short periods of peak

	demand and longer periods of negligible demand. Therefore CHP is not considered viable for the scheme.
Green or brown roof	N/A
Rainwater harvesting	N/A
Other measures	N/A
Join the Camden Climate Change Alliance	N/A
Off-setting contribution	N/A

2.46 As recommended by Building Regulations Part L, the following user-friendly building energy management systems and system controls will be included in the proposals where appropriate:

- Separate control zones to correspond to each area of the building that has a significantly different solar exposure, or pattern or type of use
- Each separate control zone will be capable of independent timing and temperature control and, where appropriate, ventilation and air recirculation rate
- The provision of the service should respond to the requirements of the space it serves. If both heating and cooling are provided, they will be controlled so as not to operate simultaneously
- Central plant will operate only as and when the zone systems require it. The default condition will be off.

2.47 The systems will meet specific control and efficiency standards as set out in Part L2A 2013 for system efficiencies.

2.48 The table below shows how the proposed systems efficiencies meet or exceed the minimum energy efficiencies detailed in the Non-Domestic Building Services Compliance Guide (2013 edition):

	Fixed building service	Non-Domestic Building Services Compliance Guide Minimum Energy Efficiencies	Proposed Efficiencies
Space heating	Heat pump units – all others except absorption and gas-engine	Space heating COP 2.5	Space heating COP 3.9
Water heating	Electrically heated DHW system type	100%	100%
Comfort cooling	Variable refrigerant flow systems	Space cooling EER 2.6	Space cooling EER 3.2 ESEER 6.1
Air distribution system	Local balanced supply and extract ventilation system such as wall/roof units serving a single area with heat recovery	1.6 W/l/s	Internal SFP 0.845 W/l/s
Air distribution system	Zonal extract system where fan is remote from zone	0.5 W/l/s	0.5 W/l/s
Air distribution system	Plate heat exchanger	Dry heat recovery efficiency 50%	The fresh air units specified have a heat recovery efficiency of 69%

2.49 Energy meters will be installed to enable at least 90% of the estimated annual energy consumption of each fuel to be assigned to the various end-use categories according to *CIBSE TM39 Building Energy Metering*.

2.50 Centralised switching off of appliances are not considered appropriate for the development, given the scale of the project and that it is not expected to include a facilities manager.

As detailed above, the building is designed to achieve a 18.53% reduction in carbon dioxide beyond Part L 2013 Building Regulations in line with the energy hierarchy, and a 3.62% reduction in carbon dioxide emissions through renewable technologies.

3. SUSTAINABILITY

3.1 The submitted Sustainability & Energy Statement of July 2017 contained a BREEAM UK Refurbishment and Fit Out pre-assessment indicating the potential of the scheme to achieve realistic and potential BREEAM scores of 'Pass' and 'Very Good' respectively.

3.2 Additional analysis of the proposals have confirmed that the scheme will target a 'Very Good' rating under the BREEAM UK Refurbishment and Fit Out scheme.

3.3 In addition, the analysis confirms that the proposals will target the following key credits:

- 60% minimum of available, unweighted Energy credits. The submitted BREEAM pre-assessment predicts that 83% of the available credits are achievable.

- 60% minimum of available, unweighted Water credits. The submitted BREEAM pre-assessment predicts that 57% of the available credits are achievable. An additional credit will be sought for issue Wat01. Flowrates for the sanitary ware will be specified to achieve a 40% improvement over the baseline water consumption, including a 3/6 litre flush cistern system used for the WC's, and showers and taps fitted with flow regulators.

- 40% minimum of available, unweighted Materials credits. The submitted BREEAM pre-assessment predicts that 25% of the available credits are achievable. An additional credit will be sought for issue Mat01, through the reuse of existing electrical and waste/water services. A further additional credit will be sought for issue Mat03 by targeting ≥36% of the responsible sourcing of materials points.

3.4 The rating of 'Very Good' will be confirmed by undertaking a BREEAM Design Stage Assessment Report and a BREEAM Post-Construction Assessment Report, both of which will be provided by an independent licensed BREEAM assessor.

3.5 In order to ensure that the objectives of both BREEAM and the London Borough of Camden's sustainability policies are delivered, the project team will follow a set of measures, as described below.

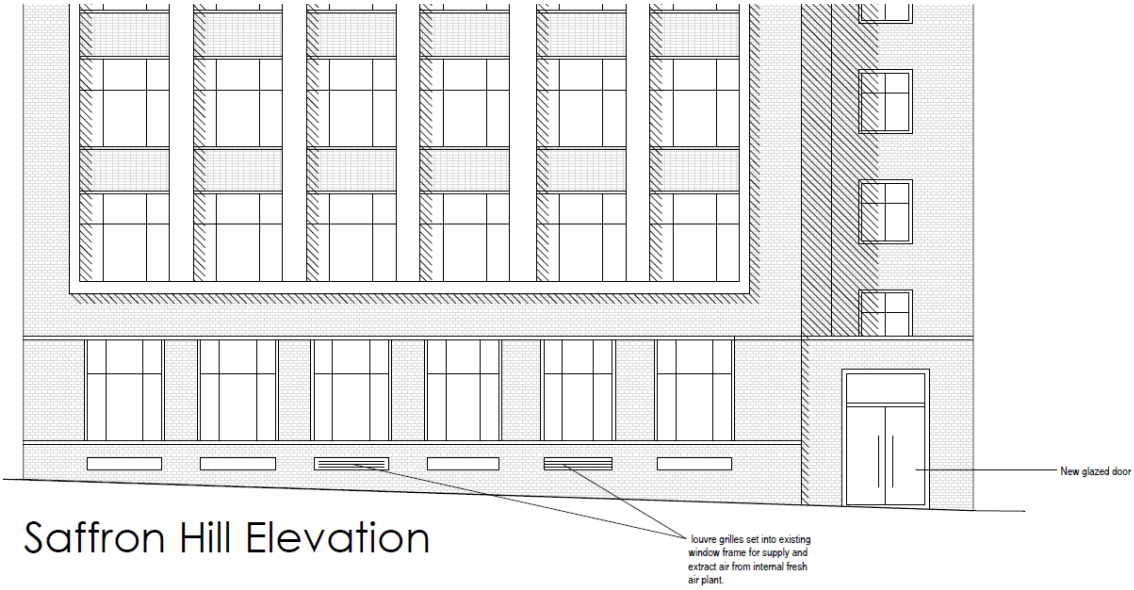
- The design team shall continue to facilitate consultation amongst the design team to help identify ways to improve building performance;

- The project team shall seek advice on commissioning at an early stage to ensure commissioning is fully accounted for within the programme of works;

- The project team shall specify products with a low VOC content;
- The project team shall specify low flow taps, showers and WCs, as detailed above;
- The project team shall specify materials that have a lower environmental impact and are covered by an ISO 14001 or better where possible;
- The project team shall specify insulation with a green guide rating of ‘A’ and low GWP;
- The project team shall ensure all lighting is in line with CIBSE guidelines and is zoned appropriately to allow for occupant control;
- The project team shall specify high efficiency heat pumps with a lower GWP and refrigerant charge where possible;
- The project team shall consider the impact of plant noise on the local environment and providing attenuators or additional sound insulation to the plant room if necessary;
- The contractor shall ensure the client is fully trained in all new systems and provide information on how the systems can be managed which can be made available to the building user;
- The contractor shall allow for aftercare provision that include meetings with the client and ensure any defects are rectified and the building operates efficiently and comfortably;
- The contractor to ensure the services are sized to ensure the correct levels of heating and cooling can be provided;
- The contractor to ensure all meters are labelled to ensure that building users can take meter readings and monitor energy use;
- The contractor shall aim to procure local materials where possible;
- The contractor to re-use demolition waste where possible; and
- The contractor to split waste streams on site, limit construction waste levels and use recycling schemes where possible.

4. AIR QUALITY

4.1 Outside air will be supplied to the space from three sides of the building, as illustrated in the below elevations.



Saffron Hill Elevation

SIDE ELEVATION - A

4.2 The installation will consist of five fresh air units in the lower ground floor ceiling with ducted air in and out of the small windows at street elevations that will be replaced with a grille - two per side as shown on the drawings above and one into the rear lightwell.

4.3 By distributing air inlets across three sides of the building, air will be drawn into the space from three separate thoroughfares, none of which are heavily trafficked. This will minimise the effects of existing air pollution on occupants.

4.4 As the development is situated away from the busy Farringdon Road, it is not anticipated that localised high levels of NOx or particulate matter caused by traffic will lead to health issues for building occupants.

5. SUMMARY

5.1 This Addendum to the Sustainability and Energy Statement v2 for the proposed change of use scheme at Da Vinci House, 44 Saffron Hill provides further information to contribute to the energy and sustainability targets, as defined by the London Borough of Camden.

5.2 Consideration has been given to the London Borough of Camden's Local Plan, Camden Planning Guidance and comments from Camden's planning officers in the formulation of this addendum.

5.3 The addendum provides additional detail on how the proposed building will target best achievable levels of energy performance and sustainability, with three key elements proposed for the approach to the scheme's sustainability proposals, as follows:

1. The change of use proposals has been assessed using the London Borough of Camden's Local Plan policies, as detailed in the Sustainability & Energy Statement v2 and above. This enables a holistic sustainability approach for the building, appropriate to the scale of development proposed.

2. The carbon dioxide (CO_2) emissions reduction strategy for the building is based on the GLA's London Plan Energy Hierarchy to provide a rigorous methodology which maximises opportunities for emissions reduction. All the 'Be Lean' measures specific to a conversions and Part L 2013 best practice measures have been explored and included in the design, where appropriate. The proposed building is designed to target a minimum 18.53% reduction in carbon dioxide reduction beyond Part L 2013 Building Regulations and 3.62% reduction in carbon dioxide reduction through renewable technologies. This represents a culmination of achievable 'best practice' measures, given the constraints of the site and proposals.

3. The proposed development has undergone a BREEAM Refurbishment and Fit Out 2014 Pre-Assessment. This found that achieving BREEAM 'Excellent' would be realistically impossible to achieve on a project of this nature. The Pre-Assessment and commitments from the applicants demonstrate that the project will achieve a BREEAM rating of 'Very Good'.

5.4 It should be reiterated that the development proposals will also provide a range of additional sustainability features, over and above those described in this addendum. The original suite of documents submitted as part of the planning application shows that the proposed scheme;

- Retains an existing building, bringing an underutilised car park space back into employment uses, with associated benefits for the local economy;

- Will include cycle parking and associated facilities to promote sustainable transport;
- Has a limited glazed area to reduce solar gains;
- Has a high degree of thermal mass, due to the below ground nature of the proposals;
- Has a high floor to ceiling height of 3.49m, minimising heat build-up in occupied spaces; and
- Proposes to achieve a 18.53% reduction in regulated carbon dioxide emissions, when compared with the Part L2A:2013 target emission rate, exceeding the standard for new buildings, despite this being a change of use project.

5.5 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. INDICATIVE SBEM ENERGY DATA

‘Be Lean’ Measures

BRUKL Output Document

HM Government

Compliance with England Building Regulations Part L 2013

Project name

Da Vinci House - Be Lean

As designed

Date: Thu Jan 04 14:12:20 2018

Administrative information

Building Details

Address: 44 Saffron Hill, London, EC1N 8FH

Certification tool

Calculation engine: TAS

Calculation engine version: "v9.4.1"

Interface to calculation engine: TAS

Interface to calculation engine version: v9.4.1

BRUKL compliance check version: v5.2.g.3

Owner Details

Name:

Telephone number:

Address: , ,

Certifier details

Name:

Telephone number:

Address: , ,

Criterion 1: The calculated CO_2 emission rate for the building should not exceed the target

CO_2 emission rate from the notional building, $kgCO_2/m^2.annum$	23.9
Target CO_2 emission rate (TER), $kgCO_2/m^2.annum$	23.9
Building CO_2 emission rate (BER), $kgCO_2/m^2.annum$	20
Are emissions from the building less than or equal to the target?	BER =< TER
Are as built details the same as used in the BER calculations?	Separate submission

Criterion 2: The performance of the building fabric and the building services should achieve reasonable overall standards of energy efficiency

Values not achieving standards in the Non-Domestic Building Services Compliance Guide and Part L are displayed in red.

Building fabric

Element	$U_{k\text{-}Limit}$	$U_{k\text{-}Calc}$	$U_{i\text{-}Calc}$	Surface where the maximum value occurs*
Wall**	0.35	0.26	0.26	Basement Wall
Floor	0.25	0.22	0.22	Ground Floor
Roof	0.25	-	-	No roofs in project
Windows***, roof windows, and rooflights	2.2	1.59	1.59	Basement window2
Personnel doors	2.2	-	-	No personal doors in project
Vehicle access & similar large doors	1.5	-	-	No vehicle doors in project
High usage entrance doors	3.5	-	-	No high usage entrance doors in project

$U_{k\text{-}Limit}$ = Limiting area-weighted average U-values [W/(m²K)]
$U_{k\text{-}Calc}$ = Calculated area-weighted average U-values [W/(m²K)]
$U_{i\text{-}Calc}$ = Calculated maximum individual element U-values [W/(m²K)]

* There might be more than one surface where the maximum U-value occurs.
** Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows.
*** Display windows and similar glazing are excluded from the U-value check.
N.B.: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.

Air Permeability	Worst acceptable standard	This building
$m^3/(h.m^2)$ at 50 Pa	10	5

Building services

The standard values listed below are minimum values for efficiencies and maximum values for SFPs.
Refer to the Non-Domestic Building Services Compliance Guide for details.

Whole building lighting automatic monitoring & targeting with alarms for out-of-range values	NO
Whole building electric power factor achieved by power factor correction	>0.95

1- Toilets (2 Zones)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.91	-	-	-	-
Standard value	0.91*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO

* Standard shown is for gas single boiler systems <=2 MW output. For single boiler systems >2 MW or multi-boiler systems, (overall) limiting efficiency is 0.86. For any individual boiler in a multi-boiler system, limiting efficiency is 0.82.

2- Office (2 Zones)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.91	6.12	-	0.85	0.69
Standard value	0.91*	2.6	N/A	1.6^	0.5
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO

* Standard shown is for gas single boiler systems <=2 MW output. For single boiler systems >2 MW or multi-boiler systems, (overall) limiting efficiency is 0.86. For any individual boiler in a multi-boiler system, limiting efficiency is 0.82.

^ Allowed SFP may be increased by the amounts specified in the Non-Domestic Building Services Compliance Guide if the system includes additional components as listed in the Guide.

1- New HWS Circuit

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	1	0
Standard value	0.9*	N/A

* Standard shown is for gas boilers >30 kW output. For boilers <=30 kW output, limiting efficiency is 0.73.

"No zones in project where local mechanical ventilation, exhaust, or terminal unit is applicable"

General lighting and display lighting	Luminous efficacy [lm/W]			
Zone name	**Luminaire**	**Lamp**	**Display lamp**	**General lighting [W]**
Standard value	60	60	22	
B1_Circulation 1	-	-	-	56
B1_Circulation 2	-	-	-	105
B1_Office 1	-	-	-	3737
B1_Plant 1	-	-	-	109
B1_Plant 2	-	-	-	241
B1_Toilet 1	-	-	-	167
B1_Changing 1	-	-	-	44
Comms 1	-	-	-	25

Criterion 3: The spaces in the building should have appropriate passive control measures to limit solar gains

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
B1_Office 1	NO (-91%)	NO
Comms 1	N/A	N/A

Criterion 4: The performance of the building, as built, should be consistent with the calculated BER

Separate submission

Criterion 5: The necessary provisions for enabling energy-efficient operation of the building should be in place

Separate submission

EPBD (Recast): Consideration of alternative energy systems

Were alternative energy systems considered and analysed as part of the design process?	NO
Is evidence of such assessment available as a separate submission?	NO
Are any such measures included in the proposed design?	YES

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Area [m²]	818	818
External area [m²]	1316	1316
Weather	LON	LON
Infiltration [m³/hm²@ 50Pa]	5	3
Average conductance [W/K]	327	479
Average U-value [W/m²K]	0.25	0.36
Alpha value* [%]	6.44	6.44

* Percentage of the building's average heat transfer coefficient which is due to thermal bridging

Building Use

% Area	Building Type
	A1/A2 Retail/Financial and Professional services
	A3/A4/A5 Restaurants and Cafes/Drinking Est./Takeaways
99	**B1 Offices and Workshop businesses**
	B2 to B7 General Industrial and Special Industrial Groups
	B8 Storage or Distribution
	C1 Hotels
	C2 Residential Inst.: Hospitals and Care Homes
	C2 Residential Inst.: Residential schools
	C2 Residential Inst.: Universities and colleges
	C2A Secure Residential Inst.
	Residential spaces
	D1 Non-residential Inst.: Community/Day Centre
	D1 Non-residential Inst.: Libraries, Museums, and Galleries
	D1 Non-residential Inst.: Education
	D1 Non-residential Inst.: Primary Health Care Building
	D1 Non-residential Inst.: Crown and County Courts
	D2 General Assembly and Leisure, Night Clubs and Theatres
	Others: Passenger terminals
	Others: Emergency services
1	**Others: Miscellaneous 24hr activities**
	Others: Car Parks 24 hrs
	Others - Stand alone utility block

Energy Consumption by End Use [kWh/m²]

	Actual	Notional
Heating	4.93	3.44
Cooling	2.12	8.23
Auxiliary	8.26	9.71
Lighting	12.61	17.9
Hot water	14.36	15.78
Equipment*	56.86	56.86
TOTAL**	**42.29**	**55.05**

* Energy used by equipment does not count towards the total for calculating emissions.
** Total is net of any electrical energy displaced by CHP generators, if applicable.

Energy Production by Technology [kWh/m²]

	Actual	Notional
Photovoltaic systems	0	0
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0

Energy & CO_2 Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m²]	59.69	122.87
Primary energy* [kWh/m²]	117.82	128.83
Total emissions [kg/m²]	20	23.9

* Primary energy is net of any electrical energy displaced by CHP generators, if applicable.

HVAC Systems Performance

System Type		Heat dem MJ/m2	Cool dem MJ/m2	Heat con kWh/m2	Cool con kWh/m2	Aux con kWh/m2	Heat SSEEF	Cool SSEER	Heat gen SEFF	Cool gen SEER
[ST] No Heating or Cooling										
	Actual	52.2	0	16.8	0	5.9	0.86	0	0.91	0
	Notional	33.6	0	11.4	0	4.8	0.82	0	----	----
[ST] Fan coil systems, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity										
	Actual	15	53.8	4.8	2.6	9.7	0.86	5.81	0.91	6.12
	Notional	10.8	136.2	3.7	10.5	12.1	0.82	3.6	----	----

Key to terms

Heat dem [MJ/m2] = Heating energy demand
Cool dem [MJ/m2] = Cooling energy demand
Heat con [kWh/m2] = Heating energy consumption
Cool con [kWh/m2] = Cooling energy consumption
Aux con [kWh/m2] = Auxiliary energy consumption
Heat SSEFF = Heating system seasonal efficiency (for notional building, value depends on activity glazing class)
Cool SSEER = Cooling system seasonal energy efficiency ratio
Heat gen SSEFF = Heating generator seasonal efficiency
Cool gen SSEER = Cooling generator seasonal energy efficiency ratio
ST = System type
HS = Heat source
HFT = Heating fuel type
CFT = Cooling fuel type

Key Features

The BCO can give particular attention to items with specifications that are better than typically expected.

Building fabric

Element	$U_{i\text{-}Typ}$	$U_{i\text{-}Min}$	Surface where the minimum value occurs*
Wall	0.23	0.26	External Wall
Floor	0.2	0.22	Ground Floor
Roof	0.15	-	No roofs in project
Windows, roof windows, and rooflights	1.5	1.59	Basement window1
Personnel doors	1.5	-	No personal doors in project
Vehicle access & similar large doors	1.5	-	No vehicle doors in project
High usage entrance doors	1.5	-	No high usage entrance doors in project

$U_{i\text{-}Typ}$ = Typical individual element U-values [W/(m²K)] $U_{i\text{-}Min}$ = Minimum individual element U-values [W/(m²K)]
* There might be more than one surface where the minimum U-value occurs.

Air Permeability	Typical value	This building
$m^3/(h.m^2)$ at 50 Pa	5	5

‘Be Green’ Measures

BRUKL Output Document

HM Government

Compliance with England Building Regulations Part L 2013

Project name

Da Vinci House - Be Green

As designed

Date: Thu Jan 04 14:10:03 2018

Administrative information

Building Details

Address: 44 Saffron Hill, London, EC1N 8FH

Certification tool

Calculation engine: TAS

Calculation engine version: "v9.4.1"

Interface to calculation engine: TAS

Interface to calculation engine version: v9.4.1

BRUKL compliance check version: v5.2.g.3

Owner Details

Name:

Telephone number:

Address: , ,

Certifier details

Name:

Telephone number:

Address: , ,

Criterion 1: The calculated CO_2 emission rate for the building should not exceed the target

CO_2 emission rate from the notional building, kgCO_2/m^2.annum	23.8
Target CO_2 emission rate (TER), kgCO_2/m^2.annum	23.8
Building CO_2 emission rate (BER), kgCO_2/m^2.annum	19.5
Are emissions from the building less than or equal to the target?	BER =< TER
Are as built details the same as used in the BER calculations?	Separate submission

Criterion 2: The performance of the building fabric and the building services should achieve reasonable overall standards of energy efficiency

Values not achieving standards in the Non-Domestic Building Services Compliance Guide and Part L are displayed in red.

Building fabric

Element	$U_{k\text{-}Limit}$	$U_{k\text{-}Calc}$	$U_{i\text{-}Calc}$	Surface where the maximum value occurs*
Wall**	0.35	0.26	0.26	Basement Wall
Floor	0.25	0.22	0.22	Ground Floor
Roof	0.25	-	-	No roofs in project
Windows***, roof windows, and rooflights	2.2	1.59	1.59	Basement window2
Personnel doors	2.2	-	-	No personal doors in project
Vehicle access & similar large doors	1.5	-	-	No vehicle doors in project
High usage entrance doors	3.5	-	-	No high usage entrance doors in project

$U_{k\text{-}Limit}$ = Limiting area-weighted average U-values [W/(m^{2}K)]
$U_{k\text{-}Calc}$ = Calculated area-weighted average U-values [W/(m^{2}K)]
$U_{i\text{-}Calc}$ = Calculated maximum individual element U-values [W/(m^{2}K)]

* There might be more than one surface where the maximum U-value occurs.
** Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows.
*** Display windows and similar glazing are excluded from the U-value check.
N.B.: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.

Air Permeability	Worst acceptable standard	This building
m^3/(h.m^2) at 50 Pa	10	5

Building services

The standard values listed below are minimum values for efficiencies and maximum values for SFPs.
Refer to the Non-Domestic Building Services Compliance Guide for details.

Whole building lighting automatic monitoring & targeting with alarms for out-of-range values	NO
Whole building electric power factor achieved by power factor correction	>0.95

1- Toilets (2 Zones)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.91	-	-	-	-
Standard value	2.5*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO

* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps. For types <=12 kW output, refer to EN 14825 for limiting standards.

2- Office (2 Zones)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.91	6.12	-	0.85	0.69
Standard value	2.5*	2.6	N/A	1.6^	0.5
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO

* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps. For types <=12 kW output, refer to EN 14825 for limiting standards.

^ Allowed SFP may be increased by the amounts specified in the Non-Domestic Building Services Compliance Guide if the system includes additional components as listed in the Guide.

1- New HWS Circuit

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	1	0
Standard value	0.9*	N/A

* Standard shown is for gas boilers >30 kW output. For boilers <=30 kW output, limiting efficiency is 0.73.

"No zones in project where local mechanical ventilation, exhaust, or terminal unit is applicable"

General lighting and display lighting	Luminous efficacy [lm/W]			
Zone name	**Luminaire**	**Lamp**	**Display lamp**	**General lighting [W]**
Standard value	60	60	22	
B1_Circulation 1	-	-	-	56
B1_Circulation 2	-	-	-	105
B1_Office 1	-	-	-	3737
B1_Plant 1	-	-	-	109
B1_Plant 2	-	-	-	241
B1_Toilet 1	-	-	-	167
B1_Changing 1	-	-	-	44
Comms 1	-	-	-	25

Criterion 3: The spaces in the building should have appropriate passive control measures to limit solar gains

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
B1_Office 1	NO (-91%)	NO
Comms 1	N/A	N/A

Criterion 4: The performance of the building, as built, should be consistent with the calculated BER

Separate submission

Criterion 5: The necessary provisions for enabling energy-efficient operation of the building should be in place

Separate submission

EPBD (Recast): Consideration of alternative energy systems

Were alternative energy systems considered and analysed as part of the design process?	NO
Is evidence of such assessment available as a separate submission?	NO
Are any such measures included in the proposed design?	YES

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Area [m²]	818	818
External area [m²]	1316	1316
Weather	LON	LON
Infiltration [m³/hm²@ 50Pa]	5	3
Average conductance [W/K]	327	479
Average U-value [W/m²K]	0.25	0.36
Alpha value* [%]	6.44	6.44

* Percentage of the building's average heat transfer coefficient which is due to thermal bridging

Building Use

% Area	Building Type
	A1/A2 Retail/Financial and Professional services
	A3/A4/A5 Restaurants and Cafes/Drinking Est./Takeaways
99	**B1 Offices and Workshop businesses**
	B2 to B7 General Industrial and Special Industrial Groups
	B8 Storage or Distribution
	C1 Hotels
	C2 Residential Inst.: Hospitals and Care Homes
	C2 Residential Inst.: Residential schools
	C2 Residential Inst.: Universities and colleges
	C2A Secure Residential Inst.
	Residential spaces
	D1 Non-residential Inst.: Community/Day Centre
	D1 Non-residential Inst.: Libraries, Museums, and Galleries
	D1 Non-residential Inst.: Education
	D1 Non-residential Inst.: Primary Health Care Building
	D1 Non-residential Inst.: Crown and County Courts
	D2 General Assembly and Leisure, Night Clubs and Theatres
	Others: Passenger terminals
	Others: Emergency services
1	**Others: Miscellaneous 24hr activities**
	Others: Car Parks 24 hrs
	Others - Stand alone utility block

Energy Consumption by End Use [kWh/m²]

	Actual	Notional
Heating	1.15	1.16
Cooling	2.12	8.23
Auxiliary	8.26	9.71
Lighting	12.61	17.9
Hot water	14.36	15.78
Equipment*	56.86	56.86
TOTAL**	**38.5**	**52.78**

* Energy used by equipment does not count towards the total for calculating emissions.
** Total is net of any electrical energy displaced by CHP generators, if applicable.

Energy Production by Technology [kWh/m²]

	Actual	Notional
Photovoltaic systems	0	0
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0

Energy & CO_2 Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m²]	59.69	122.87
Primary energy* [kWh/m²]	115.24	128.1
Total emissions [kg/m²]	19.5	23.8

* Primary energy is net of any electrical energy displaced by CHP generators, if applicable.

HVAC Systems Performance

System Type		Heat dem MJ/m2	Cool dem MJ/m2	Heat con kWh/m2	Cool con kWh/m2	Aux con kWh/m2	Heat SSEEF	Cool SSEER	Heat gen SEFF	Cool gen SEER
[ST] No Heating or Cooling										
	Actual	52.2	0	3.9	0	5.9	3.71	0	3.91	0
	Notional	33.6	0	3.8	0	4.8	2.43	0	----	----
[ST] Fan coil systems, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
	Actual	15	53.8	1.1	2.6	9.7	3.71	5.81	3.91	6.12
	Notional	10.8	136.2	1.2	10.5	12.1	2.43	3.6	----	----

Key to terms

Heat dem [MJ/m2] = Heating energy demand
Cool dem [MJ/m2] = Cooling energy demand
Heat con [kWh/m2] = Heating energy consumption
Cool con [kWh/m2] = Cooling energy consumption
Aux con [kWh/m2] = Auxiliary energy consumption
Heat SSEFF = Heating system seasonal efficiency (for notional building, value depends on activity glazing class)
Cool SSEER = Cooling system seasonal energy efficiency ratio
Heat gen SSEFF = Heating generator seasonal efficiency
Cool gen SSEER = Cooling generator seasonal energy efficiency ratio
ST = System type
HS = Heat source
HFT = Heating fuel type
CFT = Cooling fuel type

Key Features

The BCO can give particular attention to items with specifications that are better than typically expected.

Building fabric

Element	$U_{i\text{-}Typ}$	$U_{i\text{-}Min}$	Surface where the minimum value occurs*
Wall	0.23	0.26	External Wall
Floor	0.2	0.22	Ground Floor
Roof	0.15	-	No roofs in project
Windows, roof windows, and rooflights	1.5	1.59	Basement window1
Personnel doors	1.5	-	No personal doors in project
Vehicle access & similar large doors	1.5	-	No vehicle doors in project
High usage entrance doors	1.5	-	No high usage entrance doors in project

$U_{i\text{-}Typ}$ = Typical individual element U-values [W/(m²K)] $U_{i\text{-}Min}$ = Minimum individual element U-values [W/(m²K)]
* There might be more than one surface where the minimum U-value occurs.

Air Permeability	Typical value	This building
m³/(h.m²) at 50 Pa	5	5

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.

A2.6 The report is provided for sole use by the Client and is confidential to them and their professional advisors. No responsibility whatsoever for the contents of the report will be accepted to any person other than the client, unless otherwise agreed.

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.