

Energy Statement

STOREX Tottenham

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Date: 03.08.2026

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Executive Summary

The following Energy and Sustainability Statement contains the results from compliance modelling in relation to betterment over Part L 2021 and local planning policies.

Although not GLA referable due to size, the London Borough of Haringey would like the GLA guidance to be followed.

Through a combination of high fabric performance and system efficiencies outlined in this report, the analysis shows that compliance with Part L 2021 and local Haringey Council planning policies has been achieved.

Results	
HVAC System	ASHP VRF
Renewables	ASHP & ~427m² PV
Part L 2021 compliance achieved	
Haringey Local Plan	

This Energy Statement has been prepared to support the detailed planning application for the STOREX Tottenham proposed development. The proposal includes a self-storage element, which is largely unconditioned, naturally ventilated Fab Lab workshops on ground and first floor which have electric panel heaters for frost protection only, and a reception/shop which will be served by VRF.

Part L compliance modelling has been completed in accordance with the requirements of Chapter Nine (Sustainable Infrastructure) of the London Plan 2021 and Policy SP4 of the Haringey Local Plan 2033.

In developing the energy strategy for STOREX Tottenham, high standards of fabric thermal performance and passive design have been applied to minimise the building's primary energy demands. This includes applying U-values and air permeability values significantly better than Part L standards for the heated spaces and including low energy lighting and lighting controls. The strategy in this report is based on a small amount of direct electric heating for the shower area and point of use instantaneous DHW (as the space heating and DHW demands are low), with the Fab Labs being naturally ventilated and the shop area and breakroom being served by high efficiency VRF.

Provision has not been made in the design for the installation of a district heat network heat exchanger for future connection. This is due the annual PV generation exceeding the annual regulated energy consumption as well as the low heat demand of the development.

1 Introduction

We have compiled this Energy Statement in support of the redevelopment of the site to provide a new self-storage facility (Use Class B8) and new light Industrial workspace/incubator units (Use Class E(g)(iii)) with associated loading area, car, van and cycle parking, landscaping and other works ancillary to the development. The development aims to achieve compliance with Part L 2021 and adherence to Policy SP4 of the Haringey Local Plan 2013.

1.1 Proposed Development

The site is located at 30-48 Lawrence Road, Tottenham, N15 4EG. The proposal includes alterations and extension to existing building to provide new self-storage facility (Use Class B8), new flexible workspace / incubator units and other works ancillary to the development, totalling 8,536m².

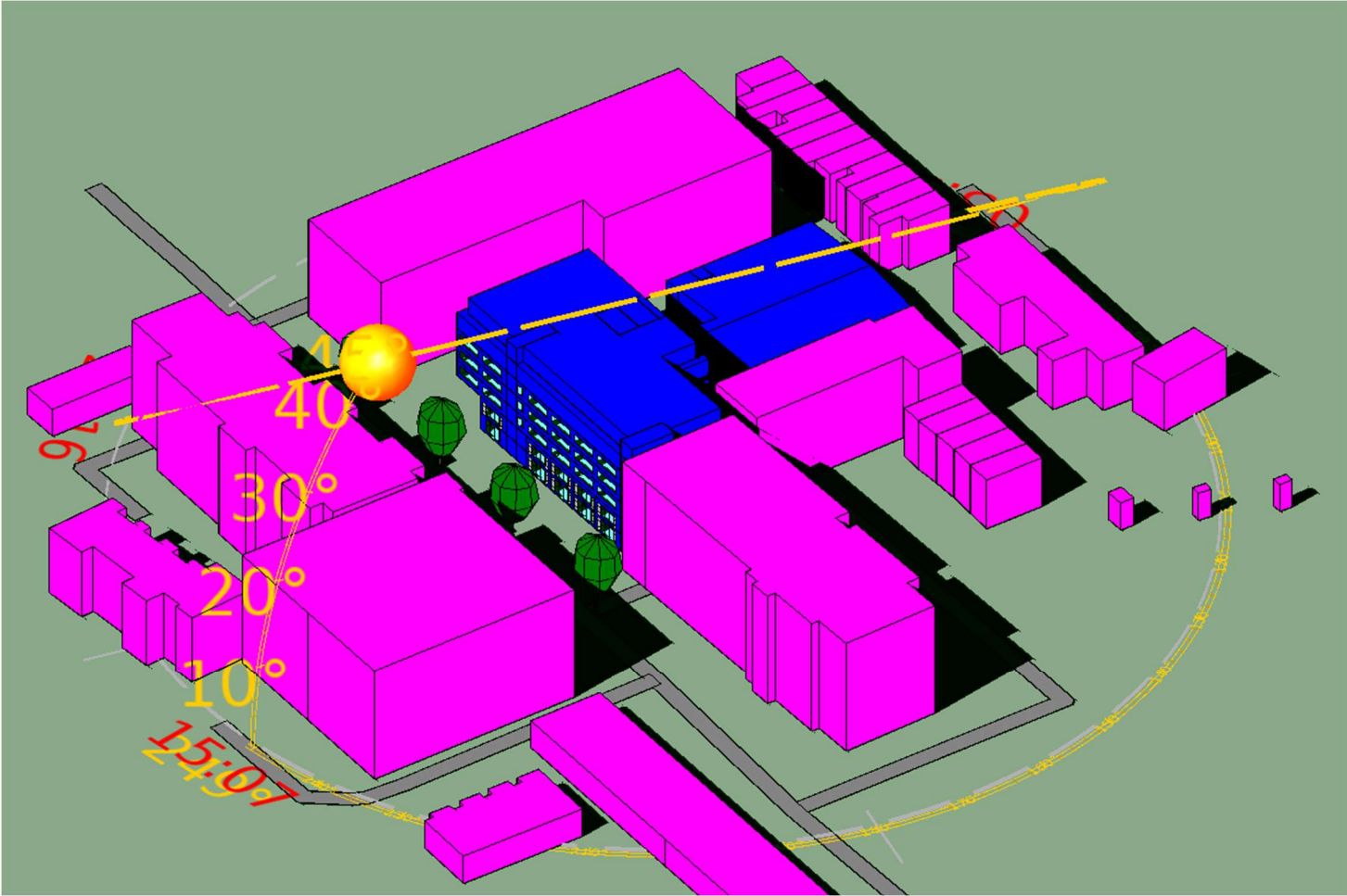


Figure 1.1 IESVE model of the proposed development

2 Planning Policy

There are several planning policies that are relevant to the STOREX Tottenham development. This section of the report summarises the pertinent carbon and energy policies that apply to the development that have been addressed within this report. These are namely the National Planning Policy Framework (July 2021) the Haringey Local Plan 2013 (SP4).

2.1 National Planning Policy Framework

The National Planning Policy Framework (NPPF) is a key part of the Government’s reforms to make the planning system less complex and more accessible, to protect the environment and to promote sustainable growth. It sets out the Government’s planning policies for England and how these are expected to be applied. The NPPF replaces the current suite of national Planning Policy Statements, Planning Policy Guidance Notes and some Circulars.

2.2 Haringey Local Plan 2013

The Haringey Local Plan: Strategic Policies (2013–2026) was originally adopted in March 2013 and later consolidated with alterations in 2017. It sets out the Council’s vision, spatial strategy, and key planning policies to guide development in the borough up to 2026.

SP4: Working Towards a Low Carbon Haringey Requires all new development to minimise energy use and carbon emissions. Non-residential much achieve at least BREEAM Very Good, aiming for Excellent; zero-carbon from 2019.

3 District Heating Appraisal

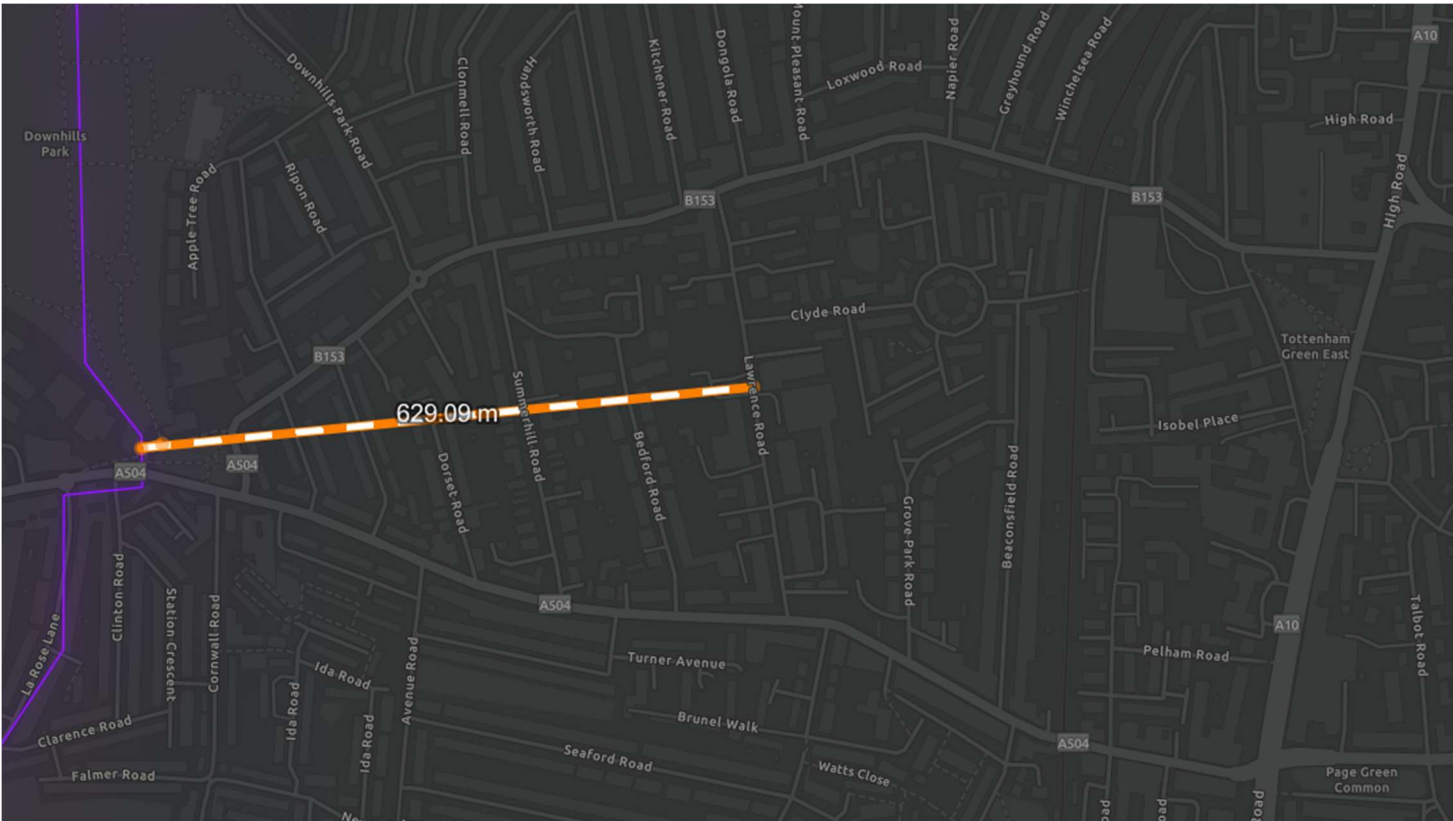
This section of the report presents the results from district heating feasibility analysis for the proposed STOREX Tottenham development.

3.1 Heat Map and Existing/Proposed Networks

Applicants are required to use the London Heat Map to assess the feasibility of connecting to a district heating network. Nearby networks are:

- Proposed HDEN Phase 2 (630m)

However, due to the low heat demand of the proposed development along with the low demand of the surrounding area, we can confirm that connection to any local heat work would not be feasible at this time.



3.2 Site Heat Demand

We have completed detailed work to identify key energy demands for the proposed development. The results from energy modelling confirm that the largest energy load is lighting, followed by DHW. However, this is most likely an overestimate of the actual DHW consumption from the NCM templates.

As a result of the low heat demand, the creation of a new district heating network is not an environmentally or commercially viable energy strategy for the development. As such the development does not facilitate the creation of a new district heating network within the local area or a connection to any new or proposed nearby heat networks.

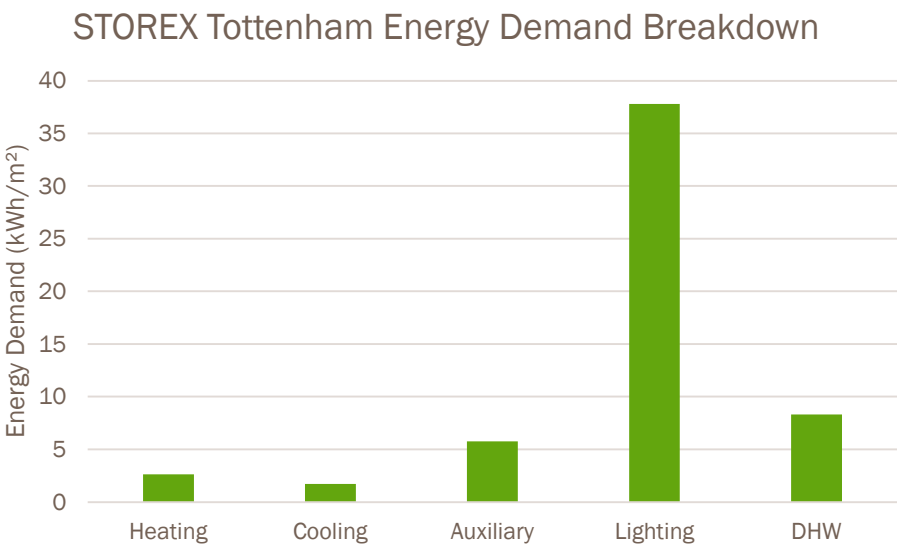


Figure 3.1 Energy demand by end use

4 Energy Strategy

The proposed development aims to minimise CO₂ emissions to the atmosphere arising from the operations of and within the building. To minimise CO₂ emissions, the following energy hierarchy has been applied to the design strategy of the development:

1. Minimising energy consumption through passive design measures
2. Supplying energy efficiently through active systems
3. Maximising energy generation from on-site LZCGT (low and zero carbon generation technologies) energy sources

The three principles outlined above have been applied in sequence and systematically in the development of the proposal. These are illustrated in the following sections.

4.1 Passive Design Measures

The energy efficient building design of the proposed development will minimise the need for energy in operation while maximizing the comfort of users during the lifetime of the building. The integration of passive design principles will enable the building to be less reliant on HVAC systems and minimize dependence on artificial lighting, taking advantage of natural energy flows to maintain visual and thermal comfort.

To limit heat losses across the building envelope a number of measures have been implemented. These include highly efficient built form and high levels of insulation and airtightness to the heated areas. Solar control glass has also been applied to the Fab Labs and storage areas to minimise solar heat gains to reduce internal temperatures during peak summer conditions. The performances applied will meet building regulations compliance. High standards of insulation have been prioritised to the heated areas of the building, with a lighter construction used in the unheated self-storage areas. This allows heat loss to be effectively minimised, while reducing the embodied carbon associated with insulation across the unheated areas of the development.

Several mature trees have been retained on the street frontage to the development. These provide seasonal shade to the fab lab and shop spaces, and have been included in this analysis to ensure that their impact on energy performance is modelled.

4.2 Energy Efficient Systems

Services have been specified that exceed compliance with Part L 2021. This has been achieved through energy efficient lighting systems and controls, as well as efficient HVAC and equipment.

Details of the systems applied are provided in Table 4.1 which includes performance of ASHP, heat recovery ventilation, lighting and controls. The latest innovative technologies have been applied within the energy model to reduce energy consumption and CO₂ emissions to ensure the building uses energy as efficiently and cleanly as possible.

4.3 Low Carbon Technologies

The opportunities to install LZCGT have been examined in Section 5 (Low Carbon and Renewables Appraisal) of this report. The outcomes of this conclude that air source heat pumps are the most appropriate for the proposed development, along with photovoltaic panels. A total of 96.4kWp of solar panels are proposed, comprising 96 south facing panels and 96 north facing panels across the roof, with a 12° pitch. The proposed array is expected to generate 77.6kWh per annum.

4.4 Metering strategy

Energy meters shall be installed to provide metering of each type of service (lighting, small power and mechanical systems). The Contractor shall install energy metering systems so that at least 90% of the estimated annual energy consumption of each fuel is assigned to the end-use categories.

A stand-alone Energy Monitoring system shall be provided complete with a local Energy Monitoring Server and the required Energy monitoring system software. The server shall be located within the Services room. Access will be available to the server across the Local area network

Table 4.1 Energy Strategy Applied in the Dynamic Simulation Modelling

Element or System	Modelled Parameter/Performance	Location
Fabric Thermal Performance		
External Wall U-Value	0.53 W/m²K 0.15 W/m²K	self-storage and unconditioned fab lab and conditioned (breakroom, reception, IT)
Ground Floor U-Value	0.12 W/m²K (exposed concrete, under slab insulation, insulation from earth excluded)	fab lab and conditioned
	0.18 W/m²K (exposed concrete, uninsulated, insulation from earth included)	self-storage
Exposed floor U-value	0.18 W/m²K	self-storage overhang
Internal Ceiling U-Value	0.12 W/m²K 0.7 W/m²K	Conditioned spaces Fab lab areas and ancillary spaces
Internal Partition U-Value	0.26 W/m²K 0.7 W/m²K	Between conditioned and unconditioned spaces Between fab lab corridor and self-storage
Roof U-Value	0.16 W/m²K	
Glazing U-value (inc. frame)	1.2 W/m²K	
Opaque Louvre Panels U-value	0.9 W/m²K	
Pedestrian Door U-value	1.6 W/m²K	
Vehicle Door U-value	1.4 W/m²K	
Building Air Permeability	3 m³/h./m² @ 50Pa	
Glazing Performance		
Glazing g-value	0.21	
Glazing Light Transmittance	50%	
HVAC		
VRF (shop, break room, IT)	UK NCM type = Variable refrigerant flow SCoP = 4.42 Heat recovery = 85% SEER = 4.03 UK NCM air supply mechanism = Centralised balanced A/C or mech vent system CMM Mechanical Mixed Mode SFP = 1.14W/l/s	
Electric Panel (Shower)	UK NCM type = Other local room heater - unfanned SCoP = 1.0	
Toilet/Shower Extract	0.3 W/l/s SFP 6 ACH ¹	
Self-Store Supply & Extract	0.6 W/l/s SFP 0.17 ACH ¹	
Domestic Hot Water		
Domestic Hot Water	Point of use instantaneous DHW SCoP = 1.0 Storage = 10l, 25mm factory insulated (cleaners)	
Lighting		
Efficacy	Luminaire efficacy: 130 lm/circuit W (self-store floors) 120lm/circuit W (elsewhere)	
LZCGT Technologies		
PV	PV panel area 426.6m², 22.6% efficiency, 96.4kWp 96 PV panels (total area 213.3m²) north facing warehouse roof 12° pitch 96 PV panels (total area 213.3m²) south facing warehouse roof 12° pitch	
Other		
Power factor correction	>0.95	
Lighting controls	Presence detectors throughout Daylight dimming to Fab Labs and Shop	

enabling user access to the graphical user interface. The Web based licenced software will also enable the information to be viewed over the WAN (e.g. over the internet via a web browser).

The system should be provided with the capability for Central Energy monitoring of all stores over the VPN however this will not currently be enabled. The system must currently operate in stand-alone monitoring Mode.

Additionally, the Central Energy monitoring should also account for each Fab lab energy consumption for billing purposes. It is the contractor's responsibility to incorporate the energy monitoring systems and its functioning for the scheme. It is recommended that a smart metering/billing system is in place for charging customers based on their energy consumption on a monthly basis.

The Contractor shall install a building monitoring system (BMS) that will log the energy usage and provide the ability to install an energy usage display within the shop area.

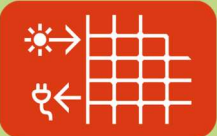
The proposed system will be by METERology. A licensed copy of the software must be purchased by the client for the STOREX stores; the licence enables copies of the software to be installed on multiple sites. Contractor to confirm final requirements and specification with the Client ahead of procurement and installation.

5 Low Carbon and Renewable Appraisal

This section of the report presents the results from a low carbon and renewable technology feasibility study for the STOREX Tottenham development.

Water source heat pumps, and hydroelectricity have been excluded from the assessment as this would require extensive infrastructure which is neither practical nor economically viable. Fuel cells have also been excluded from the assessment due to the infancy of this technology which would result in a significant technical, commercial and economic risk to the project. Table 5.1 below presents the results for all other eligible technologies.

Table 5.1 Low and zero carbon renewable technology feasibility study

	Photovoltaic Panels	Building mounted solar photovoltaic panels to generate renewable electricity	• PV panels provide clean green energy. • 426.6m² of active PV array meets all Part L, EPC A+ and local planning requirements • Operating and maintenance costs for PV panels are considered to be low compared to other renewable energy systems. • Roof access will be required as photovoltaics require maintenance and cleaning. • Simple and cost-effective technology to reduce CO₂ emissions. • Technology recommended due to the above	
	Solar Thermal Heating	Building mounted solar collectors to generate domestic hot water for use in each building	• The outputs from solar thermal systems installed in the north of England tend to be low. Capital cost of the system result in a poor pay pack. • Development has a relatively low domestic hot water demand that limits the opportunity for this system. • Technology not recommended due to the above.	
	Wind Turbines	Free standing mast mounted micro wind turbine to generate renewable electricity	• Roof mounted wind turbine will require significant structural support and present maintenance issues. • Wind turbines are also contentious planning issues. • Due to the unstable wind patterns in urban areas, the energy generation and resulting CO₂ emission reductions are minimal. • Technology not recommended due to the above.	
	Biomass	Use of wood biomass or biofuel to generate hot water for space heating and DHW.	• The design aims to avoid energy generation through combustion • The project aims to be all-electric, therefore combustion technology does not align with this target • There is also minimal space within the constraints of the site to install the biomass plant, boiler flue and associated fuel stores. • Biofuels are not readily available and would cause commercial and economic risk to the project • Technology not recommended due to the above.	
	CHP	Combined generation of heat and power from a single fuel source	• The design aims to avoid energy generation through combustion • To be economically viable, CHP requires at least 4,500 hours of high and constant heat demand. The low heat demand (i.e. domestic hot water demand) would result in the CHP system rarely operating. • Dumping of excess heat is not an efficient operation of the system in terms of cost, energy and CO₂ emission savings. • CHP is contentious to class as renewable generation • Technology not recommended due to the above.	
	Ground Source Heat Pumps	Use of the thermodynamic refrigeration cycle to generate hot water from a ground heat sink	• Ground area is restricted to the building footprint, resulting in a limited heat sink. • As a result, deep geothermal boreholes are the only option resulting in high risk, cost and implication on programme. • Technology not recommended due to the above.	
	Air Source Heat Pump	Use of the thermodynamic refrigeration cycle to generate hot water using air as a heat sink	• ASHP technology can provide heating and cooling simultaneously with high efficiencies achieved. • Technology can be combined with cooling systems • Technology can provide domestic hot water • Performance of technology subject to external ambient air temperatures • Acoustic attenuation often required due to noise from ASHPs • Technology recommended due to the above	
	Geothermal	Use of the thermodynamic refrigeration cycle to generate hot water using deep geothermal boreholes	• Ground area is restricted to the building footprint, resulting in a limited heat sink. • As a result, deep geothermal boreholes are the only option resulting in high risk, cost and implication on programme. • Technology not recommended due to the above.	

6 Energy Analysis

This Section of the report presents the results from the Part L 2021 compliance calculations for the proposed STOREX Tottenham development. The calculations have been undertaken to assess performance against the Part L requirements.

6.1 Energy Modelling

The proposed development will be subject to complying with Part L 2021 (Conservation of Fuel & Power). Part L of the building regulations requires all new non-domestic buildings to achieve minimum performances in respect to CO₂ emissions from heating, cooling, ventilation, and lighting energy consumptions. With each revision of Part L, the government has implemented more stringent CO₂ emission targets which are approaching similar requirements for LETI standards.

We have completed a compliance model for the proposed development to identify the fabric and energy performances required to comply with Part L (as outlined in Chapter 4). This involves calculating the Building Emission Rate (BER) and Target Emission Rate (TER), where compliance is achieved provided the BER is less than or equal to the TER (The BER and TER values are the kgCO₂/m² emissions for the actual building and a building regulation compliant building respectively).

To assess compliance against local planning policies, energy use for the whole building has been assessed, including unconditioned areas. However, to assess compliance with Part L of the building regulations, the heated areas have also been assessed separately.

The compliance model was created using IESVE 2024 dynamic simulation software as illustrated in Figure 6.1.

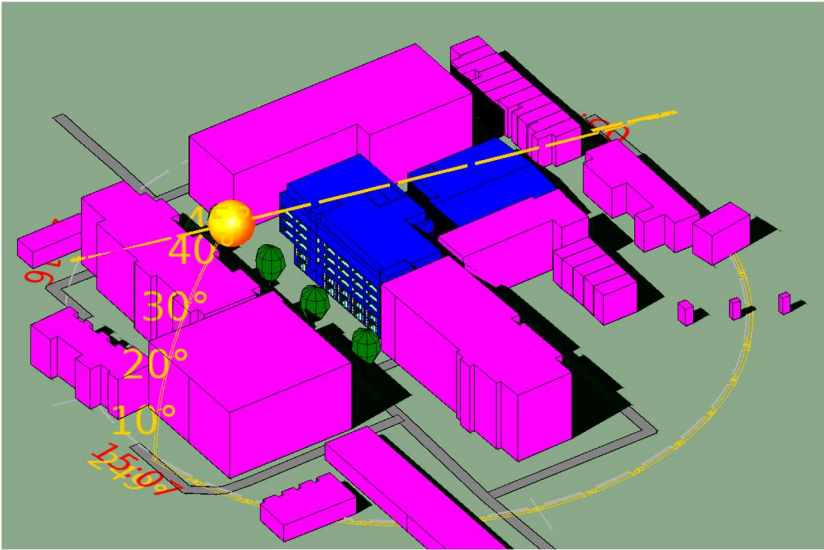


Figure 6.1 IESVE model geometry

6.2 Compliance

The compliance results are presented in Table 6.1 and Table 6.2. These illustrate that compliance with Part L 2021 is achieved (i.e. the BER < TER and BPER < TPER).

The contribution of Low and Zero Carbon Technologies (LZCT) to the energy consumption of the building is shown in Figure 6.2. This shows that the LZCT contribution is over and above the Haringey Local Plan SP4 requirements.

The EUI, space heating demand, and space cooling demand are summarised in Table 6.3 and Table 6.4. This shows that the building is compliant with the GLA energy assessment guidance for all of the above metrics.

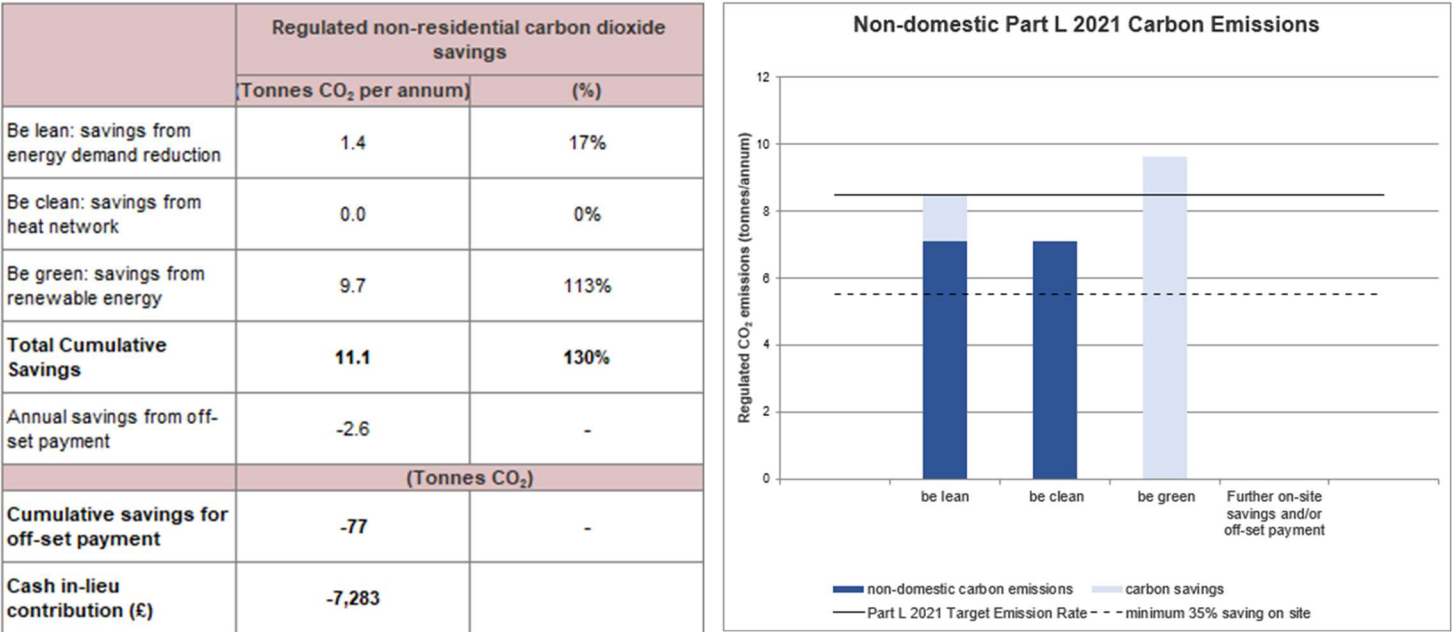


Figure 6.2 Extract from the GLA carbon reporting spreadsheet

Table 6.1 Part L 2021 compliance results summary - BER vs. TER

	Whole building	Heated only
Target Emissions Rate (TER)	1.01 kgCO ₂ /m ²	14.83
Building Emissions Rate (BER)	-0.30 kgCO ₂ /m ²	-118.85
Is BER lower than or equal to TER?	BER ≤ TER YES	BER ≤ TER YES

Table 6.2 Part L 2021 compliance results summary - BPER vs. TPER

	Whole building	Heated only
Target Primary Energy Rate (TPER)	11.03 kWh/m ²	161.25
Building Primary Energy Rate (BPER)	- 4.17 kWh/m ²	-1393.54
Is BPER lower than or equal to TPER?	BPER ≤ TPER YES	BPER ≤ TPER YES

Table 6.3 Energy Use Intensity (EUI) and space heating demand for the development

Building type	EUI (kWh/m ² /year) (excluding renewable energy)	Space heating demand (kWh/m ² /year) (excluding renewable energy)	EUI value from table 4 of the guidance (kWh/m ² /year) (excluding renewable energy)	Space heating demand from Table 4 of the guidance (kWh/m ² /year) (excluding renewable energy)	Methodology used (e.g. 'be seen' methodology or an alternative predictive energy modelling technology)
All other non-residential	9.11	0.12	55	15	Part L2 - approved DSM and none

Table 6.4 Cooling demand for the actual and notional buildings

	Area weighted non-residential cooling demand (MJ/m ²)	Total non-residential cooling demand (MJ/year)
Actual	0.26	2199
Notional	0.46	3842

7 Conclusions

This report has been prepared to address the aims and objectives of the Part L 2021 and local planning policies.

We have compiled this Energy Statement in support of the proposed STOREX Tottenham development. The development aims to achieve compliance with Part L 2021 and adherence to the Haringey Local Plan.

Energy modelling has been completed to investigate the energy performance parameters required to achieve the above requirements.

The proposed energy strategy for the development consists of:

- Reasonable window to wall ratios and solar control glazing
- Air permeability of 3 m³/h.m² @ 50Pa to occupied areas
- Ventilation with heat recovery
 - SFPs of 1.14 W/l/s for the MVHR units
- 0.3W/l/s for extract fans
- High lighting efficacy and controls
- Instantaneous DHW
- A PV array with total panel area of 426.6m²

Appendices

Appendix A - Supplementary Information

- A.1 BRUKL Reports
- A.2 Be LEAN Systems
- A.3 PV Array
- A.4 Thermal line U-value markup

Appendix A - Supplementary Information

A.1 BRUKL Reports

A.1.1 GREEN (Whole Building)

BRUKL Output Document

 HM Government

Compliance with England Building Regulations Part L 2021

Project name

6998-STRX TOT-2026.05.22 (GREEN - WHOLE BUILDING)

As designed

Date: Tue May 26 10:05:45 2026

Administrative information

Building Details

Address: Address 1, City, Postcode

Certification tool

Calculation engine: Apache

Calculation engine version: 7.0.28

Interface to calculation engine: IES Virtual Environment

Interface to calculation engine version: 7.0.28

BRUKL compliance module version: v6.1.e.1

Certifier details

Name: Name

Telephone number: Phone

Address: Street Address, City, Postcode

Foundation area [m²]: 72.31

The CO₂ emission and primary energy rates of the building must not exceed the targets

Target CO ₂ emission rate (TER), kgCO ₂ /m²·annum	1.01
Building CO ₂ emission rate (BER), kgCO ₂ /m²·annum	-0.3
Target primary energy rate (TPER), kWh _u /m²·annum	11.03
Building primary energy rate (BPER), kWh _u /m²·annum	-4.17
Do the building's emission and primary energy rates exceed the targets?	BER <= TER BPER <= TPER

The performance of the building fabric and fixed building services should achieve reasonable overall standards of energy efficiency

Fabric element	U _g Limit	U _g Calc	U _g Calc	First surface with maximum value
Walls*	0.26	0.51	0.53	L0000035:Surf[1]
Floors	0.18	0.17	0.18	L0000035:Surf[0]
Pitched roofs	0.16	-	-	No pitched roofs in building
Flat roofs	0.18	0.16	0.16	L000000C:Surf[1]
Windows** and roof windows	1.6	1.19	1.6	L000002F:Surf[1]
Rooflights***	2.2	-	-	No roof lights in building
Personnel doors^	1.6	1.6	1.6	L000002F:Surf[1]
Vehicle access & similar large doors	1.3	-	-	No vehicle access doors in building
High usage entrance doors	3	-	-	No high usage entrance doors in building

U_g Limit = Limiting area-weighted average U-values [W/(m²K)]

U_g Calc = Calculated area-weighted average U-values [W/(m²K)]

U_g Calc = Calculated maximum individual element U-values [W/(m²K)]

* 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. *** Values for rooflights refer to the horizontal position.

^ For fire doors, limiting U-value is 1.8 W/(m²K)

NB: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.

Air permeability	Limiting standard	This building
m³/(h.m²) at 50 Pa	8	3

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Floor area [m²]	8408.7	8408.7
External area [m²]	7668.3	7668.3
Weather	LON	LON
Infiltration [m³/hm²@ 50Pa]	3	5
Average conductance [W/K]	2641.49	1528.79
Average U-value [W/m²K]	0.34	0.2
Alpha value* [%]	25.07	10

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

Building Use

% Area	Building Type
	Retail/Financial and Professional Services
	Restaurants and Cafes/Drinking Establishments/Takeaways
	Offices and Workshop Businesses
4	General Industrial and Special Industrial Groups
96	Storage or Distribution
	Hotels
	Residential Institutions: Hospitals and Care Homes
	Residential Institutions: Residential Schools
	Residential Institutions: Universities and Colleges
	Secure Residential Institutions
	Residential Spaces
	Non-residential Institutions: Community/Day Centre
	Non-residential Institutions: Libraries, Museums, and Galleries
	Non-residential Institutions: Education
	Non-residential Institutions: Primary Health Care Building
	Non-residential Institutions: Crown and County Courts
	General Assembly and Leisure, Night Clubs, and Theatres
	Others: Passenger Terminals
	Others: Emergency Services
	Others: Miscellaneous 24hr Activities
	Others: Car Parks 24 hrs
	Others: Stand Alone Utility Block

Energy Consumption by End Use [kWh/m²]

	Actual	Notional
Heating	0.06	0.13
Cooling	0.03	0.04
Auxiliary	0.74	0.49
Lighting	4.49	5.97
Hot water	0.99	0.94
Equipment*	2.8	2.8
TOTAL**	6.31	7.57

* Energy used by equipment does not count towards the total for consumption or calculating emissions.

** Total is not of any electrical energy displaced by CHP generators, if applicable.

Energy Production by Technology [kWh/m²]

	Actual	Notional
Photovoltaic systems	9.23	0.1
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0
Displaced electricity	9.23	0.1

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m²]	0.7	1.39
Primary energy [kWh _{pe} /m²]	-4.17	11.03
Total emissions [kg/m²]	-0.3	1.01

A.1.2 GREEN (Heated only)

BRUKL Output Document

 HM Government

Compliance with England Building Regulations Part L 2021

Project name

6998-STRX TOT-2026.05.22 (GREEN - HEATED ONLY)

As designed

Date: Tue May 26 09:58:31 2026

Administrative information

Building Details

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Building primary energy rate (BPER), kWh _u /m²·annum	-1393.54
Do the building's emission and primary energy rates exceed the targets?	BER <= TER BPER <= TPER

The performance of the building fabric and fixed building services should achieve reasonable overall standards of energy efficiency

Fabric element	U _{u-limit}	U _{u-calc}	U _{u-calc}	First surface with maximum value
Walls*	0.26	0.15	0.15	L0000013:Surf[0]
Floors	0.18	0.12	0.12	L000000A:Surf[0]
Pitched roofs	0.16	-	-	No pitched roofs in building
Flat roofs	0.18	-	-	No flat roofs in building
Windows** and roof windows	1.6	1.3	1.6	L0000013:Surf[2]
Rooflights***	2.2	-	-	No roof lights in building
Personnel doors^	1.6	1.6	1.6	L0000013:Surf[2]
Vehicle access & similar large doors	1.3	-	-	No vehicle access doors in building
High usage entrance doors	3	-	-	No high usage entrance doors in building

U_{u-limit} = Limiting area-weighted average U-values [W/(m²K)]

U_{u-calc} = Calculated area-weighted average U-values [W/(m²K)]

U_{u-calc} = Calculated maximum individual element U-values [W/(m²K)]

* 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. *** Values for rooflights refer to the horizontal position.

^ For fire doors, limiting U-value is 1.8 W/(m²K)

NB: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.

Air permeability	Limiting standard	This building
m³/(h.m²) at 50 Pa	8	3

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Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Floor area [m²]	72.3	72.3
External area [m²]	143.3	143.3
Weather	LON	LON
Infiltration [m³/hm²@ 50Pa]	3	5
Average conductance [W/K]	29.79	51.02
Average U-value [W/m²K]	0.21	0.36
Alpha value* [%]	25	10

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

Building Use

% Area	Building Type
	Retail/Financial and Professional Services
	Restaurants and Cafes/Drinking Establishments/Takeaways
	Offices and Workshop Businesses
	General Industrial and Special Industrial Groups
90	Storage or Distribution
	Hotels
	Residential Institutions: Hospitals and Care Homes
	Residential Institutions: Residential Schools
	Residential Institutions: Universities and Colleges
	Secure Residential Institutions
	Residential Spaces
	Non-residential Institutions: Community/Day Centre
	Non-residential Institutions: Libraries, Museums, and Galleries
	Non-residential Institutions: Education
	Non-residential Institutions: Primary Health Care Building
	Non-residential Institutions: Crown and County Courts
	General Assembly and Leisure, Night Clubs, and Theatres
	Others: Passenger Terminals
	Others: Emergency Services
10	Others: Miscellaneous 24hr Activities
	Others: Car Parks 24 hrs
	Others: Stand Alone Utility Block

Energy Consumption by End Use [kWh/m²]

	Actual	Notional
Heating	3.39	4.57
Cooling	3.79	7.95
Auxiliary	7.45	5.99
Lighting	7.92	8.72
Hot water	95.71	90.19
Equipment*	71.56	71.56
TOTAL**	118.27	117.43

* Energy used by equipment does not count towards the total for consumption or 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	1073.15	8.1
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0
Displaced electricity	1073.15	8.1

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m²]	67.53	121.78
Primary energy [kWh _u /m²]	-1393.54	161.25
Total emissions [kg/m²]	-118.85	14.83

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6998 STOREX Tottenham

A.1.3 LEAN (Whole Building)

BRUKL Output Document

 HM Government

Compliance with England Building Regulations Part L 2021

Project name

6998-STRX TOT-2026.05.22 (LEAN - WHOLE BUILDING)

As designed

Date: Tue May 26 10:10:29 2026

Administrative information

Building Details

Address: Address 1, City, Postcode

Certifier details

Name: Name

Telephone number: Phone

Address: Street Address, City, Postcode

Certification tool

Calculation engine: Apache

Calculation engine version: 7.0.28

Interface to calculation engine: IES Virtual Environment

Interface to calculation engine version: 7.0.28

BRUKL compliance module version: v6.1.e.1

Foundation area [m²]: 72.31

The CO₂ emission and primary energy rates of the building must not exceed the targets

Target CO ₂ emission rate (TER), kgCO ₂ /m²/annum	1.01
Building CO ₂ emission rate (BER), kgCO ₂ /m²/annum	0.86
Target primary energy rate (TPER), kWh _{pe} /m²/annum	11.03
Building primary energy rate (BPER), kWh _{pe} /m²/annum	9.33
Do the building's emission and primary energy rates exceed the targets?	BER <= TER BPER <= TPER

The performance of the building fabric and fixed building services should achieve reasonable overall standards of energy efficiency

Fabric element	U _{limit}	U _{calc}	U _{calc}	First surface with maximum value
Walls*	0.26	0.51	0.53	L0000035:Surf[1]
Floors	0.18	0.17	0.18	L0000035:Surf[0]
Pitched roofs	0.16	-	-	No pitched roofs in building
Flat roofs	0.18	0.16	0.16	L000000C:Surf[1]
Windows** and roof windows	1.6	1.19	1.6	L000002F:Surf[1]
Rooflights***	2.2	-	-	No roof lights in building
Personnel doors^	1.6	1.6	1.6	L000002F:Surf[1]
Vehicle access & similar large doors	1.3	-	-	No vehicle access doors in building
High usage entrance doors	3	-	-	No high usage entrance doors in building

U_{limit} = Limiting area-weighted average U-values [W/(m²K)]

U_{calc} = Calculated area-weighted average U-values [W/(m²K)]

U_{calc} = Calculated maximum individual element U-values [W/(m²K)]

* 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. *** Values for rooflights refer to the horizontal position.

^ For fire doors, limiting U-value is 1.8 W/m²K

NB: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.

Air permeability	Limiting standard	This building
m³/(h.m²) at 50 Pa	8	3

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Floor area [m²]	8408.7	8408.7
External area [m²]	7668.3	7668.3
Weather	LON	LON
Infiltration [m³/hm²@ 50Pa]	3	5
Average conductance [W/K]	2641.49	1528.79
Average U-value [W/m²K]	0.34	0.2
Alpha value* [%]	25.07	10

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

Building Use

% Area	Building Type
	Retail/Financial and Professional Services
	Restaurants and Cafes/Drinking Establishments/Takeaways
	Offices and Workshop Businesses
4	General Industrial and Special Industrial Groups
96	Storage or Distribution
	Hotels
	Residential Institutions: Hospitals and Care Homes
	Residential Institutions: Residential Schools
	Residential Institutions: Universities and Colleges
	Secure Residential Institutions
	Residential Spaces
	Non-residential Institutions: Community/Day Centre
	Non-residential Institutions: Libraries, Museums, and Galleries
	Non-residential Institutions: Education
	Non-residential Institutions: Primary Health Care Building
	Non-residential Institutions: Crown and County Courts
	General Assembly and Leisure, Night Clubs, and Theatres
	Others: Passenger Terminals
	Others: Emergency Services
	Others: Miscellaneous 24hr Activities
	Others: Car Parks 24 hrs
	Others: Stand Alone Utility Block

Energy Consumption by End Use [kWh/m²]

	Actual	Notional
Heating	0.07	0.13
Cooling	0.03	0.04
Auxiliary	0.74	0.49
Lighting	4.49	5.97
Hot water	0.99	0.94
Equipment*	2.8	2.8
TOTAL**	6.32	7.57

* Energy used by equipment does not count towards the total for consumption or calculated 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	0.1
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0
Displaced electricity	0	0.1

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m²]	0.7	1.39
Primary energy [kWh _{pe} /m²]	9.33	11.03
Total emissions [kg/m²]	0.86	1.01