

Energy Statement:

Parkhills Retail Park

Parkhills Road Bury BL9 9AZ



Parkhills Garage, Manchester Road, Bury BL9 9AZ.- Proposal

This Energy Statement has been provided in support of the Building Regulation Application for: Parkhills Garage, Manchester Road, Bury BL9 9AZ.

Demolition of existing car showroom and workshop, redevelopment of land to provide two Class E units, together with car parking, amended vehicle access points, landscaping and associated works.

The scheme comprises the construction of 2 new buildings, falling under Use Class E as defined in the Town and Country Planning (Use Classes) Order.

The strategy assesses each building's performance against regulatory benchmarks – particularly the Building Regulations Approved Document Part L2:2021—and demonstrates how the integration of renewable and low-carbon technologies ensures full compliance,

The ethos for the design of the proposed development follows the recognised energy hierarchy to “Be Lean, Be Clean, Be Green”, i.e. to minimise the building's energy usage before applying low carbon technologies/renewables to the design

Following the Energy Hierarchy—prioritizing energy demand reduction, efficient systems, and renewable supply—none of the buildings initially met the compliance requirements set out in Building Regulations Approved Document Part L2:2021 when assessed without the inclusion of renewable or low-carbon technologies.

The developer has confirmed their intention to install 10kWp photovoltaic (PV) array on each of the 2 proposed buildings, equating to a total installed capacity of **20kWp across the site**. Each array will be designed to supply the individual units within its respective building, supporting a decentralized energy generation model that maximizes on-site renewable electricity use.

- This approach significantly contributes to:
- Reducing operational carbon emissions
- Achieving compliance with Part L2:2021
- Enhancing the development's resilience and sustainability credentials
- Supporting potential future grid export and net-positive operation
- The PV systems, when combined with **air source heat pumps (ASHPs)**, form the backbone of the site's **low-carbon energy strategy**.

Summary

The following summarises the key drivers of the energy strategy for the site:

- Enhanced building fabric performance has been targeted through improved thermal performance and reduced air permeability.
- Energy efficient heating, hot water, cooling, ventilation, and lighting systems throughout.
- Energy efficient controls for HVAC and lighting to minimise building in-use energy.
- An initial desk top study was undertaken to assess the most viable low zero carbon technologies for proposed implementation to achieve compliance with the local planning policy.
- A Photovoltaic array was found to be the most feasible source of low carbon technology for both sites within this development
- A full electric system has been adopted to heat and provide domestic hot water to each of the buildings, water heaters have been utilized due to the small requirement from the system of the units.

The conclusion of the conceptual design stage energy strategy is to provide an individual PV array to each of the buildings and an all-electric system to provide heating and hot water to all developments. As well as these inclusions the fabric first approach and energy efficient fixed building services systems have been utilised in the scheme. This strategy allows the development to comply with the new Part L2:2021.

Parkhills Road Bury BL9 9AZ– Whole Site Performance and overview

Metric	Target Value	Predicted Value	Units
CO ₂ Emissions	4.91	0.93	kgCO ₂ e/m ² /year
Primary Energy	52.7	7.7	kWh/m ² /year

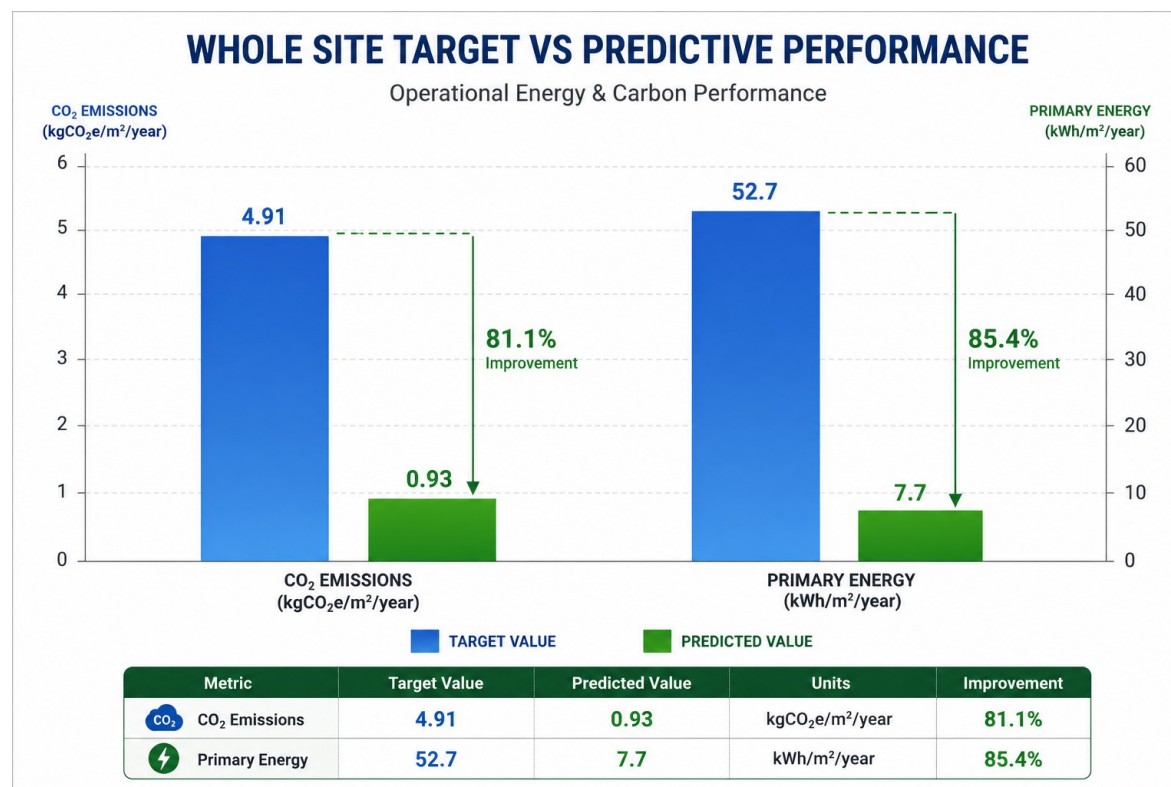
The proposed development significantly outperforms the notional building targets for both regulated carbon emissions and primary energy demand.

The adopted low-carbon energy strategy and enhanced building fabric performance demonstrate:

- **81.1% reduction in regulated CO₂ emissions** compared against the Target Emission Rate.
- **85.4% reduction in Primary Energy demand** compared against the Target Primary Energy benchmark.

These results demonstrate a highly energy-efficient development substantially exceeding current Building Regulation performance requirements.

The performance aligns with global best practices for climate-responsive design and demonstrates leadership in sustainable development.



Retail – Parkhills Road Bury – Baseline Calculation

Baseline – A baseline calculation has been undertaken to ascertain the target level for the above development from which all improvement measures shall be referenced against.

Minimum U-value's as set out in the Approved Document Part L2 of the Building Regulations 2021 have been used for the building fabric.

LED lighting at 95 Lumens per circuit watt has been applied sitewide

Electric Panel heaters have been incorporated for conditioned spaces

Instant Hot Water has been applied for presumed toilets.

A preliminary thermal energy model has been constructed for each of the buildings in the G-iSBEM 6.1E. The software was used to determine a baseline performance utilising the employer's requirements including the project specifications, and good industry custom and practice

Building Fabric Parameter	Value
Air Permeability (m3/(m2.h)@50Pa	15
External Wall U'Value (W/m2.k)	0.26
Roof U'Value (W/m2.k)	0.16
Ground Floor U'value (W/m2.k)	0.18
Glazing U'value (W/m2.k)	1.6

BRUKL Output Document



Compliance with England Building Regulations Part L 2021

Project name

Baseline Retail - Parkhills Car Centre, As designed

Date: Fri May 15 13:40:42 2026

Administrative information

Building Details

Address: Baseline Retail - Parkhills Car Centre,, Parkhill Road, Bury, BL9 9AZ

Certifier details

Name: Jonathan Rogers

Telephone number: 08451 305 650

Address: 49a high Street, Huntingdon, PE29 3AQ

Certification tool

Calculation engine: SBEM

Calculation engine version: v6.1.e.0

Interface to calculation engine: G-iSBEM

Interface to calculation engine version: v25.3

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

Foundation area [m²]: 348.89

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

The building does not comply with England Building Regulations Part L 2021

Target CO ₂ emission rate (TER), kgCO ₂ /m ² annum	1.69
Building CO ₂ emission rate (BER), kgCO ₂ /m ² annum	9.75
Target primary energy rate (TPER), kWh _{tp} /m ² annum	13.92
Building primary energy rate (BPER), kWh _{tp} /m ² annum	102.26
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 _o Limit	U _o Calc	U _o Calc	First surface with maximum value
Walls*	0.26	0.26	0.26	z0/Sales1/me
Floors	0.18	0.12	0.12	z0/Sales1/f
Pitched roofs	0.16	-	-	No heat loss pitched roofs
Flat roofs	0.18	0.16	0.16	z0/Sales1/c
Windows** and roof windows	1.6	1.6	1.6	z0/Sales1/se/g
Rooflights***	2.2	-	-	No external rooflights
Personnel doors*	1.6	-	-	No external personnel doors
Vehicle access & similar large doors	1.3	-	-	No external vehicle access doors
High usage entrance doors	3	-	-	No external high usage entrance doors

U_o Limit = Limiting area-weighted average U-values [W/(m²K)]
U_o Calc = Calculated area-weighted average 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 the 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	15*

* Buildings with less than 500 m² total useful floor area may avoid the need for a pressure test provided that the air permeability used to calculate the BER and BPER is taken as 15 m³/(h.m²) at 50 Pa.

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Baseline – Parkhills Retail

Target Emissions Rate (TER) 1.69 kgCO₂/m²/yr

Building emissions Rate (BER) 9.75 kgCO₂/m²/yr

Target Primary Energy Rating (TPER) 13.92 kWh/m²/yr

Building Primary Energy Rating (BPER) 102.26 kWh/m²/yr



Retail – Parkhills Road Bury – Be Lean

Be Lean–The proposed development and the energy strategy detailed herein has low-energy use at its core with significant passive and energy efficient measure having been specified, these include: -

Improvement over limiting U-values within Building Regulations. The thermal performance of the building envelope has been maximised to its fullest within the constraints of site and construction.

The following improvements have been incorporated within the Lean stage energy model to enhance the overall building performance and reduce operational carbon emissions:

- Glazing specification improved to achieve a U-value of 1.4 W/m²K.
- An air permeability rate of 5 m³/hr/m² @50Pa has been adopted to reduce uncontrolled heat loss through infiltration.
- Lighting systems are now controlled via automatic timer controls to reduce unnecessary energy consumption.
- Building fabric U-values have been enhanced beyond current minimum regulatory standards to improve thermal efficiency.

The Lean stage energy model demonstrates measurable improvements in both operational carbon emissions and primary energy demand through enhancements to the building fabric, glazing performance, air permeability, and lighting controls.

These measures result in:

21.5% reduction in Building CO₂ emissions compared against the Baseline design.

21.3% reduction in Building Primary Energy demand compared against the Baseline design.

Building Fabric Parameter	Value
Air Permeability (m ³ /(m ² .h)@50Pa	5
External Wall U'Value (W/m ² .k)	0.25
Roof U'Value (W/m ² .k)	0.14
Ground Floor U'value (W/m ² .k)	0.16
Glazing U'value (W/m ² .k)	1.4

BRUKL Output Document



Compliance with England Building Regulations Part L 2021

Project name

Lean Retail - Parkhills Car Centre

As designed

Date: Fri May 15 13:58:35 2026

Administrative Information

Building Details

Address: Lean Retail, Parkhills Car Centre, Parkhill Road, Bury, BL9 9AZ

Certification tool

Calculation engine: SBEM
Calculation engine version: v6.1.e.0
Interface to calculation engine: G-ISBEM
Interface to calculation engine version: v25.3
BRUKL compliance module version: v6.1.e.1

Certifier details

Name: Jonathan Rogers
Telephone number: 08451 305 650
Address: 49a high Street, Huntingdon, PE29 3AQ

Foundation area [m²]: 348.89

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

The building does not comply with England Building Regulations Part L 2021

Target CO ₂ emission rate (TER), kgCO ₂ /m ² annum	1.69
Building CO ₂ emission rate (BER), kgCO ₂ /m ² annum	7.65
Target primary energy rate (TPER), kWh _m /m ² annum	13.92
Building primary energy rate (BPER), kWh _m /m ² annum	80.51
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	0.25	0.25	z0/Sales1/ne
Floors	0.18	0.11	0.11	z0/Sales1/f
Pitched roofs	0.16	-	-	No heat loss pitched roofs
Flat roofs	0.18	0.14	0.14	z0/Sales1/c
Windows** and roof windows	1.6	1.4	1.4	z0/Sales1/se/g
Rooflights***	2.2	-	-	No external rooflights
Personnel doors*	1.6	-	-	No external personnel doors
Vehicle access & similar large doors	1.3	-	-	No external vehicle access doors
High usage entrance doors	3	-	-	No external high usage entrance doors

U_g Limit = Limiting area-weighted average U-values [W/(m²K)]
U_g Calc = Calculated area-weighted average 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
m ³ /(h.m ²) at 50 Pa	8	5

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Be Lean – Parkhills Retail

Target Emissions Rate (TER) **1.69 kgCO₂/m²/yr**

Building emissions Rate (BER) **7.65 kgCO₂/m²/yr**

Target Primary Energy Rating (TPER) **13.92 kWh/m²/yr**

Building Primary Energy Rating (BPER) **80.51 kWh/m²/yr**



Retail – Parkhills Road Bury – Be Clean

The Clean calculations improve on the lean design by introducing high efficiency Air Source Heat pumps (ASHP) along with increased lighting levels

The following improvements have been incorporated within the Clean stage energy model to enhance the overall building performance and reduce operational carbon emissions:

- Glazing specification improved to achieve a U-value of 1.4 W/m²K.
- An air permeability rate of 5 m³/hr/m² @50Pa has been adopted to reduce uncontrolled heat loss through infiltration.
- Lighting systems are now controlled via automatic timer controls to reduce unnecessary energy consumption.
- Building fabric U-values have been enhanced beyond current minimum regulatory standards to improve thermal efficiency.

The proposed Air Source Heat Pump serving the sales area has been modelled with the following performance criteria:

- COP: 4.5
- SEER: 7.5
- EER: 3.5

These combined measures demonstrate a significant improvement in building performance between the Lean and Clean stages, resulting in:

BER reduction from 7.65 to 3.73 = **51.2% reduction in operational carbon emissions**
BPER reduction from 80.51 to 40.56 = **49.6% reduction in primary energy demand**

Building Fabric Parameter	Value
Air Permeability (m ³ /(m ² .h))@50Pa	5
External Wall U'Value (W/m ² .k)	0.25
Roof U'Value (W/m ² .k)	0.14
Ground Floor U'value (W/m ² .k)	0.16
Glazing U'value (W/m ² .k)	1.4

BRUKL Output Document



Compliance with England Building Regulations Part L 2021

Project name

Clean Retail - Parkhills Car Centre

As designed

Date: Fri May 15 13:56:27 2026

Administrative information

Building Details

Address: Clean Retail, Parkhills Car Centre, Parkhill Road, Bury, BL9 9AZ

Certifier details

Name: Jonathan Rogers
Telephone number: 08451 305 650
Address: 49a high Street, Huntingdon, PE29 3AQ

Certification tool

Calculation engine: SBEM
Calculation engine version: v6.1.e.0
Interface to calculation engine: G-ISBEM
Interface to calculation engine version: v25.3
BRUKL compliance module version: v6.1.e.1

Foundation area [m²]: 348.89

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

Target CO ₂ emission rate (TER), kgCO ₂ /m ² annum	4.64
Building CO ₂ emission rate (BER), kgCO ₂ /m ² annum	3.73
Target primary energy rate (TPER), kWh _m /m ² annum	49.8
Building primary energy rate (BPER), kWh _m /m ² annum	40.56
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	0.25	0.25	z0/Sales1/ne
Floors	0.18	0.11	0.11	z0/Sales1/f
Pitched roofs	0.16	-	-	No heat loss pitched roofs
Flat roofs	0.18	0.14	0.14	z0/Sales1/c
Windows** and roof windows	1.6	1.4	1.4	z0/Sales1/se/g
Rooflights***	2.2	-	-	No external rooflights
Personnel doors*	1.6	-	-	No external personnel doors
Vehicle access & similar large doors	1.3	-	-	No external vehicle access doors
High usage entrance doors	3	-	-	No external high usage entrance doors

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
m ³ /(h.m ²) at 50 Pa	8	5

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Be Clean – Parkhills Retail

Target Emissions Rate (TER) **4.64 kgCO₂/m²/yr**
Building emissions Rate (BER) **3.73 kgCO₂/m²/yr**

Target Primary Energy Rating (TPER) **49.8 kWh/m²/yr**
Building Primary Energy Rating (BPER) **40.56 kWh/m²/yr**



Retail – Parkhills Road Bury – Be Green

The Green calculations improve on the Clean design by incorporating a **10 kWp photovoltaic (PV) array**, further reducing both regulated CO₂ emissions and primary energy demand.

Performance Metric Result

Target Emissions Rate (TER)	4.64 kgCO ₂ /m ² /yr
Building Emissions Rate (BER)	1.09 kgCO ₂ /m ² /yr
Target Primary Energy Rating (TPER)	49.80 kWh/m ² /yr
Building Primary Energy Rating (BPER)	10.10 kWh/m ² /yr

The Be Green strategy incorporates low and zero carbon technologies to significantly reduce both operational carbon emissions and primary energy demand beyond the Lean and Clean stages.

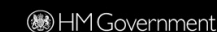
The proposed renewable energy strategy demonstrates:

- **76.5% reduction in Building CO₂ emissions** when compared against the Target Emission Rate (TER).
- **79.7% reduction in Building Primary Energy demand** when compared against the Target Primary Energy Rating (TPER).

This substantial improvement places the development significantly beyond current minimum Building Regulation requirements and demonstrates a highly energy-efficient building design aligned with future low-carbon development objectives.

Building Fabric Parameter	Value
Air Permeability (m ³ /(m ² .h)@50Pa	5
External Wall U'Value (W/m ² .k)	0.25
Roof U'Value (W/m ² .k)	0.14
Ground Floor U'value (W/m ² .k)	0.16
Glazing U'value (W/m ² .k)	1.4

BRUKL Output Document



Compliance with England Building Regulations Part L 2021

Project name

Green Retail - Parkhills Car Centre As designed

Date: Wed May 20 12:47:39 2026

Administrative information

Building Details

Address: Green Retail, Parkhills Car Centre, Parkhill Road, Bury, BL9 9AZ

Certifier details

Name: Jonathan Rogers
Telephone number: 08451 305 650
Address: 49a High Street, Huntingdon, PE29 3AQ

Certification tool

Calculation engine: SBEM
Calculation engine version: v6.1.e.0
Interface to calculation engine: G-ISBEM
Interface to calculation engine version: v25.3
BRUKL compliance module version: v6.1.e.1

Foundation area [m²]: 348.89

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

Target CO ₂ emission rate (TER), kgCO ₂ /m ² annum	4.64
Building CO ₂ emission rate (BER), kgCO ₂ /m ² annum	1.09
Target primary energy rate (TPER), kWh _m /m ² annum	49.8
Building primary energy rate (BPER), kWh _m /m ² annum	10.1
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 _o Limit	U _o Calc	U _o Calc	First surface with maximum value
Walls*	0.26	0.25	0.25	z0/Sales1/me
Floors	0.18	0.11	0.11	z0/Sales1/f
Pitched roofs	0.16	-	-	No heat loss pitched roofs
Flat roofs	0.18	0.14	0.14	z0/Sales1/c
Windows** and roof windows	1.6	1.4	1.4	z0/Sales1/se/g
Rooflights***	2.2	-	-	No external rooflights
Personnel doors^	1.6	-	-	No external personnel doors
Vehicle access & similar large doors	1.3	-	-	No external vehicle access doors
High usage entrance doors	3	-	-	No external high usage entrance doors

U_o Limit = Limiting area-weighted average U-values [W/(m².K)]
U_o Calc = Calculated area-weighted average U-values [W/(m².K)]
* Automatic U-value check by the tool does not apply to certain 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/m².K
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
m ³ /(h.m ²) at 50 Pa	8	5

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Be Green – Parkhills Retail

Target Emissions Rate (TER)	4.64 kgCO ₂ /m ² /yr
Building emissions Rate (BER)	1.09 kgCO ₂ /m ² /yr
Target Primary Energy Rating (TPER)	49.80 kWh/m ² /yr
Building Primary Energy Rating (BPER)	10.1 kWh/m ² /yr



Drive Thru – Parkhills Road Bury – Baseline Calculation

Baseline – A baseline calculation has been undertaken to ascertain the target level for the above development from which all improvement measures shall be referenced against

Minimum U'value's as set out in the Approved Document Part L2 of the Building Regulations 2021 have been used for the building fabric.

- LED lighting at 95 Lumens per circuit watt has been applied sitewide
- Electric Panel heaters have been incorporated for conditioned spaces
- Instant Hot Water has been applied for presumed toilets.

A preliminary thermal energy model has been constructed for each of the buildings in the G-iSBEM 6.1E. The software was used to determine a baseline performance utilising the employer's requirements including the project specifications, and good industry custom and practice

Building Fabric Parameter	Value
Air Permeability (m ³ /(m ² .h)@50Pa	15
External Wall U'Value (W/m ² .k)	0.26
Roof U'Value (W/m ² .k)	0.16
Ground Floor U'value (W/m ² .k)	0.18
Glazing U'value (W/m ² .k)	1.6

BRUKL Output Document



Compliance with England Building Regulations Part L 2021

Project name

Baseline Drive Thru -Parkhills Car Centre As designed

Date: Fri May 15 14:33:36 2026

Administrative information

Building Details

Address: Baseline Drive Thru, Parkhills Car Centre,,
Parkhill Road, Bury, BL9 9AZ

Certifier details

Name: Jonathan Rogers
Telephone number: 08451 305 650
Address: 49a high Street, Huntingdon, PE29 3AQ

Certification tool

Calculation engine: SBEM
Calculation engine version: v6.1.e.0
Interface to calculation engine: G-iSBEM
Interface to calculation engine version: v25.3
BRUKL compliance module version: v6.1.e.1

Foundation area [m²]: 167.32

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

The building does not comply with England Building Regulations Part L 2021

Target CO ₂ emission rate (TER), kgCO ₂ /m ² annum	2.52
Building CO ₂ emission rate (BER), kgCO ₂ /m ² annum	11.39
Target primary energy rate (TPER), kWh _{tp} /m ² annum	22.42
Building primary energy rate (BPER), kWh _{tp} /m ² annum	118.28
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 _{lim}	U _{calc}	U _{calc}	First surface with maximum value
Walls*	0.26	0.26	0.26	z0/Sales 1/se
Floors	0.18	0.13	0.13	z0/Sales 1/f
Pitched roofs	0.16	-	-	No heat loss pitched roofs
Flat roofs	0.18	0.18	0.18	z0/Sales 1/c
Windows** and roof windows	1.6	1.6	1.6	z0/Sales 1/se/g
Rooflights***	2.2	-	-	No external rooflights
Personnel doors*	1.6	-	-	No external personnel doors
Vehicle access & similar large doors	1.3	-	-	No external vehicle access doors
High usage entrance doors	3	-	-	No external high usage entrance doors

U_{lim} = Limiting area-weighted average U-values [W/(m².K)]
U_{calc} = Calculated area-weighted average U-values [W/(m².K)]
* Automatic U-value check by the tool does not apply to certain 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/m².K
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
m ³ /(h.m ²) at 50 Pa	8	15*

* Buildings with less than 500 m² total useful floor area may avoid the need for a pressure test provided that the air permeability used to calculate the BER and BPER is taken as 15 m³/(h.m²) at 50 Pa.

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Baseline – Drive Thru–Parkhills Road Bury

Target Emissions Rate (TER)	2.52 kgCO ₂ /m ² /yr
Building emissions Rate (BER)	11.39 kgCO ₂ /m ² /yr
Target Primary Energy Rating (TPER)	22.42 kWh/m ² /yr
Building Primary Energy Rating (BPER)	118.28 kWh/m ² /yr



Drive Thru – Parkhills Road Bury – Be Lean

The proposed development and the energy strategy detailed herein has low-energy use at its core, with significant passive and energy-efficient measures having been specified.

The following improvements have been incorporated within the Lean stage energy model to enhance the overall building performance and reduce operational carbon emissions:

- Glazing specification improved to achieve a U-value of 1.4 W/m²K. G Value of 0.6
- An air permeability rate of 5 m³/hr/m² @50Pa has been adopted to reduce uncontrolled heat loss through infiltration.
- Lighting systems are now controlled via automatic timer controls to reduce unnecessary energy consumption.
- Building fabric U-values have been enhanced beyond current minimum regulatory standards to improve thermal efficiency.

The Lean stage energy model demonstrates measurable improvements in both operational carbon emissions and primary energy demand through enhancements to the building fabric, glazing performance, air permeability, and lighting controls.

These measures result in:

- **20.7% reduction in Building CO₂ emissions** compared against the Baseline design.
- **20.5% reduction in Building Primary Energy demand** compared against the Baseline design.

Building Fabric Parameter	Value
Air Permeability (m ³ /(m ² .h)@50Pa	5
External Wall U'Value (W/m ² .k)	0.25
Roof U'Value (W/m ² .k)	0.14
Ground Floor U'value (W/m ² .k)	0.16
Glazing U'value (W/m ² .k)	1.4

BRUKL Output Document HM Government

Compliance with England Building Regulations Part L 2021

Project name

Lean Drive Thru -Parkhills Car Centre As designed

Date: Fri May 15 14:50:13 2026

Administrative information

Building Details

Address: Lean Drive Thru, Parkhills Car Centre, Parkhill Road, Bury, BL9 9AZ

Certifier details

Name: Jonathan Rogers
Telephone number: 08451 305 650
Address: 49a High Street, Huntingdon, PE29 3AQ

Certification tool

Calculation engine: SBEM
Calculation engine version: v6.1.e.0
Interface to calculation engine: G-JSBEM
Interface to calculation engine version: v25.3
BRUKL compliance module version: v6.1.e.1

Foundation area [m²]: 167.32

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

The building does not comply with England Building Regulations Part L 2021

Target CO ₂ emission rate (TER), kgCO ₂ /m ² annum	2.52
Building CO ₂ emission rate (BER), kgCO ₂ /m ² annum	9.03
Target primary energy rate (TPER), kWh _m /m ² annum	22.42
Building primary energy rate (BPER), kWh _m /m ² annum	94.03
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	0.25	0.25	z0/Sales1/se
Floors	0.18	0.12	0.12	z0/Sales1/f
Pitched roofs	0.16	-	-	No heat loss pitched roofs
Flat roofs	0.18	0.14	0.14	z0/Sales1/c
Windows** and roof windows	1.6	1.4	1.4	z0/Sales1/se/g
Rooflights***	2.2	-	-	No external rooflights
Personnel doors^	1.6	-	-	No external personnel doors
Vehicle access & similar large doors	1.3	-	-	No external vehicle access doors
High usage entrance doors	3	-	-	No external high usage entrance doors

U_{Limit} = Limiting area-weighted average U-values [W/(m²K)]
U_{Calc} = Calculated area-weighted average U-values [W/(m²K)]
* Automatic U-value check by the tool does not apply to certain 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
m ³ /(h.m ²) at 50 Pa	8	5

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Be Lean – Drive Thru–Parkhills Road Bury

Target Emissions Rate (TER) **1.12 kgCO₂/m²/yr**

Building emissions Rate (BER) **6.72 kgCO₂/m²/yr**

Target Primary Energy Rating (TPER) **10.83 kWh/m²/yr**

Building Primary Energy Rating (BPER) **72.16 kWh/m²/yr**



Drive Thru – Parkhills Road Bury – Be Clean

The following improvements have been incorporated within the Clean stage energy model to enhance the overall building performance and reduce operational carbon emissions:

- Glazing specification improved to achieve a U-value of 1.4 W/m²K. G Value of 0.6
- An air permeability rate of 5 m³/hr/m² @50Pa has been adopted to reduce uncontrolled heat loss through infiltration.
- Lighting systems are now controlled via automatic timer controls to reduce unnecessary energy consumption.
- Building fabric U-values have been enhanced beyond current minimum regulatory standards to improve thermal efficiency.

The proposed Air Source Heat Pump serving the sales area has been modelled with the following performance criteria:

- COP: 4.5
- SEER: 7.5
- EER: 3.5

These combined measures demonstrate a significant improvement in building performance between the Lean and Clean stages, resulting in:

- **49.8% reduction in Building CO₂ emissions** compared against the Lean design.
- **48.0% reduction in Building Primary Energy demand** compared against the Lean design.

Building Fabric Parameter	Value
Air Permeability (m ³ /(m ² .h)@50Pa	5
External Wall U'Value (W/m ² .k)	0.25
Roof U'Value (W/m ² .k)	0.14
Ground Floor U'value (W/m ² .k)	0.16
Glazing U'value (W/m ² .k)	1.4

BRUKL Output Document



Compliance with England Building Regulations Part L 2021

Project name

Clean Drive Thru -Parkhills Car Centre As designed

Date: Fri May 15 14:56:55 2026

Administrative information

Building Details

Address: Clean Drive Thru, Parkhills Car Centre, Parkhill Road, Bury, BL9 9AZ

Certifier details

Name: Jonathan Rogers
Telephone number: 08451 305 650
Address: 49a high Street, Huntingdon, PE29 3AQ

Certification tool

Calculation engine: SBEM
Calculation engine version: v6.1.e.0
Interface to calculation engine: G-ISBEM
Interface to calculation engine version: v25.3
BRUKL compliance module version: v6.1.e.1

Foundation area [m²]: 167.32

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

Target CO ₂ emission rate (TER), kgCO ₂ /m ² annum	5.19
Building CO ₂ emission rate (BER), kgCO ₂ /m ² annum	4.53
Target primary energy rate (TPER), kWh/m ² annum	55.61
Building primary energy rate (BPER), kWh/m ² annum	48.91
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	0.25	0.25	z0/Sales1/se
Floors	0.18	0.12	0.12	z0/Sales1/f
Pitched roofs	0.16	-	-	No heat loss pitched roofs
Flat roofs	0.18	0.14	0.14	z0/Sales1/c
Windows** and roof windows	1.6	1.4	1.4	z0/Sales1/se/g
Rooflights***	2.2	-	-	No external rooflights
Personnel doors*	1.6	-	-	No external personnel doors
Vehicle access & similar large doors	1.3	-	-	No external vehicle access doors
High usage entrance doors	3	-	-	No external high usage entrance doors
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 the 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		
m ³ /(h.m ²) at 50 Pa	8	5		

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Be Clean – Drive Thru–Parkhills Road Bury

Target Emissions Rate (TER)	5.19 kgCO ₂ /m ² /yr
Building emissions Rate (BER)	4.53 kgCO ₂ /m ² /yr
Target Primary Energy Rating (TPER)	55.61 kWh/m ² /yr
Building Primary Energy Rating (BPER)	48.91 kWh/m ² /yr



Drive Thru – Parkhills Road Bury – Be Green

The Green calculations improve on the Clean design by incorporating a **10 kWp photovoltaic (PV) array**, further reducing both regulated CO₂ emissions and primary energy demand.

Performance Metric Result

Target Emissions Rate (TER)	5.19 kgCO ₂ /m ² /yr
Building Emissions Rate (BER)	-0.99 kgCO ₂ /m ² /yr
Target Primary Energy Rating (TPER)	55.61 kWh/m ² /yr
Building Primary Energy Rating (BPER)	-14.6 kWh/m ² /yr

The Green stage energy model further improves upon the Clean design through the incorporation of renewable energy technologies and additional low-carbon energy generation measures.

These measures demonstrate:

- **119.1% reduction in Building CO₂ emissions** compared against the Target Emission Rate (TER).
- **126.3% reduction in Building Primary Energy demand** compared against the Target Primary Energy Rating (TPER).

The negative BER and BPER values indicate that the development is generating more energy than it consumes on a regulated basis, demonstrating an exceptionally high-performing low-carbon building design that substantially exceeds current Building Regulation targets.

Building Fabric Parameter	Value
Air Permeability (m ³ /(m ² .h))@50Pa	5
External Wall U'Value (W/m ² .k)	0.26
Roof U'Value (W/m ² .k)	0.16
Ground Floor U'value (W/m ² .k)	0.18
Glazing U'value (W/m ² .k)	1.4

BRUKL Output Document



Compliance with England Building Regulations Part L 2021

Project name

Green Drive Thru -Parkhills Car Centre As designed

Date: Wed May 20 13:01:44 2026

Administrative information

Building Details

Address: Green Drive Thru, Parkhills Car Centre, Parkhill Road, Bury, BL9 9AZ

Certifier details

Name: Jonathan Rogers
Telephone number: 08451 305 650
Address: 49a high Street, Huntingdon, PE29 3AQ

Certification tool

Calculation engine: SBEM
Calculation engine version: v6.1.e.0
Interface to calculation engine: G-ISBEM
Interface to calculation engine version: v25.3
BRUKL compliance module version: v6.1.e.1

Foundation area [m²]: 167.32

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

Target CO ₂ emission rate (TER), kgCO ₂ /m ² annum	5.19
Building CO ₂ emission rate (BER), kgCO ₂ /m ² annum	-0.99
Target primary energy rate (TPER), kWh _m /m ² annum	55.61
Building primary energy rate (BPER), kWh _m /m ² annum	-14.6
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	0.25	0.25	z0/Sales1/se
Floors	0.18	0.12	0.12	z0/Sales1/f
Pitched roofs	0.16	-	-	No heat loss pitched roofs
Fiat roofs	0.18	0.14	0.14	z0/Sales1/c
Windows** and roof windows	1.6	1.4	1.4	z0/Sales1/se/g
Rooflights***	2.2	-	-	No external rooflights
Personnel doors*	1.6	-	-	No external personnel doors
Vehicle access & similar large doors	1.3	-	-	No external vehicle access doors
High usage entrance doors	3	-	-	No external high usage entrance doors
U_{Limit} = Limiting area-weighted average U-values [W/(m².K)] U_{Calc} = Calculated area-weighted average U-values [W/(m².K)] U_{Calc} = Calculated maximum individual element U-values [W/(m².K)]				
* 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 the doors, limiting U-value is 1.8 W/m².K. 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		
m ³ /(h.m ²) at 50 Pa	8	5		

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Be Green – Dive Thru–Parkhills Road Bury

Target Emissions Rate (TER)	5.19 kgCO ₂ /m ² /yr
Building emissions Rate (BER)	-0.99 kgCO ₂ /m ² /yr
Target Primary Energy Rating (TPER)	55.61 kgCO ₂ /m ² /yr
Building Primary Energy Rating (BPER)	-14.6 kgCO ₂ /m ² /yr



Predicted Energy Performance Certificates

Energy Performance Certificate
Non-Domestic Building



Green Retail
Parkhills Car Centre
Parkhill Road
Bury
BL9 9AZ

Certificate Reference Number:
8550-2940-9282-0893-3786

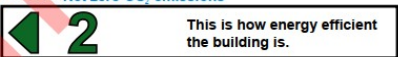
This certificate shows the energy rating of this building. It indicates the energy efficiency of the building fabric and the heating, ventilation, cooling and lighting systems. The rating is compared to two benchmarks for this type of building: one appropriate for new buildings and one appropriate for existing buildings. There is more advice on how to interpret this information in the guidance document *Energy Performance Certificates for the construction, sale and let of non-dwellings* available on the Government's website at www.gov.uk/government/collections/energy-performance-certificates.

Energy Performance Asset Rating

More energy efficient



Net zero CO₂ emissions



Less energy efficient

Technical information

Main heating fuel: Grid Supplied Electricity
Building environment: Air Conditioning
Total useful floor area (m²): 348.9
Building complexity: Level 3
Building emission rate (kgCO₂/m² per year): 1.09
Primary energy use (kWh_e/m² per year): 10.1

Benchmarks

Buildings similar to this one could have ratings as follows:
9 If newly built
35 If typical of the existing stock

Energy Performance Certificate
Non-Domestic Building



Green Drive Thru
Parkhills Car Centre,
Parkhill Road
Bury
BL9 9AZ

Certificate Reference Number:
8493-9023-6023-0379-3155

This certificate shows the energy rating of this building. It indicates the energy efficiency of the building fabric and the heating, ventilation, cooling and lighting systems. The rating is compared to two benchmarks for this type of building: one appropriate for new buildings and one appropriate for existing buildings. There is more advice on how to interpret this information in the guidance document *Energy Performance Certificates for the construction, sale and let of non-dwellings* available on the Government's website at www.gov.uk/government/collections/energy-performance-certificates.

Energy Performance Asset Rating

More energy efficient



This is how energy efficient the building is.

Net zero CO₂ emissions



Less energy efficient

Technical information

Main heating fuel: Grid Supplied Electricity
Building environment: Air Conditioning
Total useful floor area (m²): 167.3
Building complexity: Level 3
Building emission rate (kgCO₂/m² per year): -0.99
Primary energy use (kWh_e/m² per year): -14.6

Benchmarks

Buildings similar to this one could have ratings as follows:
9 If newly built
36 If typical of the existing stock

