Ashroyd Business Park

AS BUILT ENERGY STATEMENT

JUNE 2020



CJRMIDLANDS.CO.UK

CJR

Innovation through Experience

Document Control

Initial Author(s):	Matt Picker	**Date:**	22.06.2020
Reviewer:	John Rode	**Date:**	22.06.2020

Issue	Date	Status	Checked
1st	22.06.2020	As Built	MSP

CJR Midlands Ltd

Endeavour House

Unit 14 Brookfield

Duncan Close

Moulton Park

Northampton

NN3 6WL

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1.00 EXECUTIVE SUMMARY

Following provision of the As Designed Energy Statement as per CJR Document Issue 2 dated 6th November 2018, this statement update relates to the provision of As Built BRUKL documentation following completion of the Construction works at the following addresses:

- Unit 4b, Ashroyd Business Park, Ashroyds Way, Platts Common, Barnsley, S74 9SB
- Unit 5b, Ashroyd Business Park, Ashroyds Way, Platts Common, Barnsley, S74 9SB
- Unit 5c, Ashroyd Business Park, Ashroyds Way, Platts Common, Barnsley, S74 9SB
- Unit 5d, Ashroyd Business Park, Ashroyds Way, Platts Common, Barnsley, S74 9SB

CJR can confirm that, in accordance with Planning Condition No. 7, which relates to the buildings achieving a 15% reduction in CO_2 emissions, the requirements have been met through the implementation of the following practical measures:

Reducing the overall energy use of the development
The development incorporates a range of energy reduction techniques in order of priority.
Firstly, reducing energy loads by passive measures, secondly selection of energy efficient methods and technologies and the use of sustainable energy sources to supplement traditional sources.

Reducing the need for energy by use of passive measures
The design team prioritised reducing energy loads by passive measures. This included the use of the lowest economic U-values for building fabric and high-performance glazing, improved air tightness, minimised solar gains, use of natural daylight and selection of room design conditions to not exceed the needs of occupants. This included utilising spaces that are generally unheated, and making use of residual heat from persons, lighting and equipment.

Use of energy more efficiently
The annual energy demand is reduced by the passive measures employed above, resulting in some reductions in plant sizing and plant or equipment use.
Energy efficient equipment includes the use of an extract fan to enhance the natural ventilation of office spaces whilst maintaining a low energy demand, efficient luminaires and lamps, day lighting control systems, carefully sized radiators for heating of spaces and high efficiency electric heaters for domestic hot water use.

2.00 Results

Criterion 1 of the BRUKL (Building Regulations UK, Part L) report, stipulates that the calculated CO_2 emission rate for the building must not exceed the notional target. The Building Emission Rate (BER) figure determines if the 15% betterment requirement over the Target Emission Rate (TER) figure has been met.

The results below show the As Built calculation from the BRUKL calculation:

Plot 4B

BRUKL Criterion 1: Calculated CO_2 Emission Rates	
CO_2 emission rate from the notional building ($kgCO_2/m^2$. Annum)	**11.6**
Target CO_2 emission rate (TER) ($kgCO_2/m^2$. Annum)	**11.6**
Required CO_2 emission rate to meet planning condition requirements of 15% betterment	**9.86**
Actual Calculated Building CO_2 emission rate (BER) ($kgCO_2/m^2$. Annum)	**6.4**
Result	**PASS**

Energy and CO_2 Emission Summary		
	Actual	**Notional**
Heating + Cooling demand (MJ/m^2)	**25.39**	**23.79**
Primary Energy (kWh/m^2)	**36.9**	**67.73**
Total Emissions (kg/m^2)	**6.4**	**11.6**

Note: Refer to Appendices for BRUKL Reports

Plot 5B

BRUKL Criterion 1: Calculated CO_2 Emission Rates	
CO_2 emission rate from the notional building ($kgCO_2/m^2$. Annum)	**15.1**
Target CO_2 emission rate (TER) ($kgCO_2/m^2$. Annum)	**15.1**
Required CO_2 emission rate to meet planning condition requirements of 15% betterment	**12.83**
Actual Calculated Building CO_2 emission rate (BER) ($kgCO_2/m^2$. Annum)	**10.3**
Result	**PASS**

Energy and CO_2 Emission Summary		
	Actual	**Notional**
Heating + Cooling demand (MJ/m^2)	**46.51**	**42.01**
Primary Energy (kWh/m^2)	**59.65**	**88.34**
Total Emissions (kg/m^2)	**10.3**	**15.1**

Note: Refer to Appendices for BRUKL Reports

Plot 5C

BRUKL Criterion 1: Calculated CO_2 Emission Rates	
CO_2 emission rate from the notional building ($kgCO_2/m^2$. Annum)	**14.5**
Target CO_2 emission rate (TER) ($kgCO_2/m^2$. Annum)	**14.5**
Required CO_2 emission rate to meet planning condition requirements of 15% betterment	**12.32**
Actual Calculated Building CO_2 emission rate (BER) ($kgCO_2/m^2$. Annum)	**9.2**
Result	**PASS**

Energy and CO_2 Emission Summary		
	Actual	**Notional**
Heating + Cooling demand (MJ/m^2)	**39.22**	**35.6**
Primary Energy (kWh/m^2)	**53.5**	**84.86**
Total Emissions (kg/m^2)	**9.2**	**14.5**

Note: Refer to Appendices for BRUKL Reports

Plot 5D

BRUKL Criterion 1: Calculated CO_2 Emission Rates	
CO_2 emission rate from the notional building ($kgCO_2/m^2$. Annum)	**16.6**
Target CO_2 emission rate (TER) ($kgCO_2/m^2$. Annum)	**16.6**
Required CO_2 emission rate to meet planning condition requirements of 15% betterment	**14.11**
Actual Calculated Building CO_2 emission rate (BER) ($kgCO_2/m^2$. Annum)	**10.9**
Result	**PASS**

Energy and CO_2 Emission Summary		
	Actual	**Notional**
Heating + Cooling demand (MJ/m^2)	**55.27**	**51.54**
Primary Energy (kWh/m^2)	**63.39**	**96.94**
Total Emissions (kg/m^2)	**10.9**	**16.6**

Note: Refer to Appendices for BRUKL Reports

3.00 Appendices

Please find attached the As Built BRUKL Reports and Energy Performance Certificates for each building referenced within the Executive Summary.

mes buildingsolutions
Part of the FOCUS consultancy group



As Built SBEM & EPC Report

Unit 4b, Ashroyd Business Park
Ashroyd Way, Barnsley S74 9SB

17 June 2020

Newark (Head) Office:
Newark Beacon, Beacon Hill Office Park,
Cafferata Way, Newark, Notts, NG24 2TN.
Tel: 01636 653 055

London Office:
344-354 Gray's Inn Road, King's Cross,
London WC1X 8BP.
Tel: 0207 033 3757

Birmingham Office:
2nd Floor Quayside Tower, 252-260 Broad St,
Birmingham B1 2HF.
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MES Building Solutions is part of Midland Energy Services Limited. Registered in England, Company no: 5945430

BRUKL Output Document

HM Government

Compliance with England Building Regulations Part L 2013

Project name

Ashroyd Business Park Unit 4B

As built

Date: Wed Jun 17 08:51:55 2020

Administrative information

Building Details

Address: BARNSLEY, S74 9SB

Certification tool

Calculation engine: Apache

Calculation engine version: 7.0.12

Interface to calculation engine: IES Virtual Environment

Interface to calculation engine version: 7.0.12

BRUKL compliance check version: v5.6.a.1

Owner Details

Name: ---

Telephone number: ---

Address: ---, ---, ---

Certifier details

Name: Paul Shipley

Telephone number: 01363 655 055

Address: Newark Beacon, Cafferata Way, NEWARK, NG24 2TN

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

CO_2 emission rate from the notional building, $kgCO_2/m^2.annum$	11.6
Target CO_2 emission rate (TER), $kgCO_2/m^2.annum$	11.6
Building CO_2 emission rate (BER), $kgCO_2/m^2.annum$	6.4
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 fixed building services should achieve reasonable overall standards of energy efficiency

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

Building fabric

Element	$U_{a\text{-}Limit}$	$U_{a\text{-}Calc}$	$U_{i\text{-}Calc}$	Surface where the maximum value occurs*
Wall**	0.35	0.22	0.22	SC000000:Surf[2]
Floor	0.25	0.25	0.25	SC000000:Surf[3]
Roof	0.25	0.18	0.18	SC000000:Surf[0]
Windows***, roof windows, and rooflights	2.2	1.47	1.6	ST000000:Surf[1]
Personnel doors	2.2	1.41	1.41	SC000000:Surf[1]
Vehicle access & similar large doors	1.5	1.49	1.49	ND000000:Surf[70]
High usage entrance doors	3.5	-	-	No High usage entrance doors in building

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

* 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	2

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	YES
Whole building electric power factor achieved by power factor correction	<0.9

1- NG LPHW Rads Nat Vent

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.93	-	0.19	0	-
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- NG LPHW Rads Mech Vent

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.93	-	0.2	0	-
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.

"No HWS in project, or hot water is provided by HVAC system"

Local mechanical ventilation, exhaust, and terminal units

ID	System type in Non-domestic Building Services Compliance Guide
A	Local supply or extract ventilation units serving a single area
B	Zonal supply system where the fan is remote from the zone
C	Zonal extract system where the fan is remote from the zone
D	Zonal supply and extract ventilation units serving a single room or zone with heating and heat recovery
E	Local supply and extract ventilation system serving a single area with heating and heat recovery
F	Other local ventilation units
G	Fan-assisted terminal VAV unit
H	Fan coil units
I	Zonal extract system where the fan is remote from the zone with grease filter

Zone name	SFP [W/(l/s)]									HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I		
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard
4B WC's	0.1	-	-	-	-	-	-	-	-	-	N/A
4B WC's	0.1	-	-	-	-	-	-	-	-	-	N/A

General lighting and display lighting	Luminous efficacy [lm/W]			
Zone name	**Luminaire**	**Lamp**	**Display lamp**	**General lighting [W]**
Standard value	60	60	22	
4B Escape Stair	-	97	-	80
4B Stairs	-	97	-	55
4B Offices	101	-	-	1415
4B WC's	-	97	-	54

General lighting and display lighting	Luminous efficacy [lm/W]			
Zone name	**Luminaire**	**Lamp**	**Display lamp**	**General lighting [W]**
Standard value	60	60	22	
4B Reception	-	97	95	118
Unit 4B Warehouse	140	-	-	14496
4B Lobby	-	97	-	112
4B WC's	-	97	-	99

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?
4B Offices	NO (-41.6%)	NO
4B Reception	NO (-16.2%)	NO
Unit 4B Warehouse	YES (+0.5%)	NO

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?	YES
Is evidence of such assessment available as a separate submission?	YES
Are any such measures included in the proposed design?	YES

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Area [m²]	4849.3	4849.3
External area [m²]	12668.4	12668.4
Weather	LEE	LEE
Infiltration [m³/hm²@ 50Pa]	2	5
Average conductance [W/K]	4614.18	3948.01
Average U-value [W/m²K]	0.36	0.31
Alpha value* [%]	10	10

* 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
	B1 Offices and Workshop businesses
	B2 to B7 General Industrial and Special Industrial Groups
100	**B8 Storage or Distribution**
	C1 Hotels
	C2 Residential Institutions: Hospitals and Care Homes
	C2 Residential Institutions: Residential schools
	C2 Residential Institutions: Universities and colleges
	C2A Secure Residential Institutions
	Residential spaces
	D1 Non-residential Institutions: Community/Day Centre
	D1 Non-residential Institutions: Libraries, Museums, and Galleries
	D1 Non-residential Institutions: Education
	D1 Non-residential Institutions: Primary Health Care Building
	D1 Non-residential Institutions: Crown and County Courts
	D2 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	8.5	7.66
Cooling	0	0
Auxiliary	0.12	0.24
Lighting	6.64	17.39
Hot water	4.74	4.6
Equipment*	30.11	30.11
TOTAL**	**20**	**29.89**

* 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	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]	25.39	23.79
Primary energy* [kWh/m²]	36.9	67.73
Total emissions [kg/m²]	6.4	11.6

* 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] Central heating using water: radiators, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity										
	Actual	459.8	0	153.9	0	1.3	0.83	0	0.93	0
	Notional	433.6	0	139.7	0	1.2	0.86	0	----	----
[ST] Central heating using water: radiators, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity										
	Actual	375.4	0	125.7	0	12.1	0.83	0	0.93	0
	Notional	315.4	0	101.6	0	43.9	0.86	0	----	----
[ST] No Heating or Cooling										
	Actual	0	0	0	0	0	0	0	0	0
	Notional	0	0	0	0	0	0	0	----	----

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 Building Control Body is advised to give particular attention to items whose specifications 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	0.22	SC000000:Surf[2]
Floor	0.2	0.25	SC000000:Surf[3]
Roof	0.15	0.18	SC000000:Surf[0]
Windows, roof windows, and rooflights	1.5	1.46	ND000000:Surf[0]
Personnel doors	1.5	1.41	SC000000:Surf[1]
Vehicle access & similar large doors	1.5	1.49	ND000000:Surf[70]
High usage entrance doors	1.5	-	No High usage entrance doors in building

$U_{i\text{-}Typ}$ = 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	2

Energy Performance Certificate

HM Government

Non-Domestic Building

Unit 4b, Ashroyd Business Park
Ashroyd Way
Hoyland
BARNSLEY
S74 9SB

Certificate Reference Number:
0970-0530-6662-0995-2006

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



Technical Information

Main heating fuel:	Natural Gas
Building environment:	Heating and Natural Ventilation
Total useful floor area (m^2):	4849
Assessment Level:	5
Building emission rate ($kgCO_2/m^2$ per year):	6.37
Primary energy use (kWh/m^2 per year):	36.9

Benchmarks

Buildings similar to this one could have ratings as follows:

20 If newly built

52 If typical of the existing stock

Administrative Information

This is an Energy Performance Certificate as defined in the Energy Performance of Buildings Regulations 2012 as amended.

Assessment Software:	Virtual Environment v7.0.12 using calculation engine ApacheSim v7.0.12
Property Reference:	706625960000
Assessor Name:	Paul Shipley
Assessor Number:	LCEA075940
Accreditation Scheme:	CIBSE Certification Limited
Employer/Trading Name:	MES Building Solutions
Employer/Trading Address:	Newark Beacon, Cafferata Way, NEWARK NG24 2TN
Issue Date:	17 Jun 2020
Valid Until:	16 Jun 2030 (unless superseded by a later certificate)
Related Party Disclosure:	Not related to the owner.

Recommendations for improving the energy performance of the building are contained in the associated Recommendation Report - 0950-7262-0460-6990-5000.

About this document and the data in it

This document has been produced following an energy assessment undertaken by a qualified Energy Assessor, accredited by CIBSE Certification Limited. You can obtain contact details of the Accreditation Scheme at cibsecertification.com.

A copy of this certificate has been lodged on a national register as a requirement under the Energy Performance of Buildings Regulations 2012 as amended. It will be made available via the online search function at www.ndepcregister.com. The certificate (including the building address) and other data about the building collected during the energy assessment but not shown on the certificate, for instance heating system data, will be made publicly available at www.opendatacommunities.org.

This certificate and other data about the building may be shared with other bodies (including government departments and enforcement agencies) for research, statistical and enforcement purposes. Any personal data it contains will be processed in accordance with the General Data Protection Regulation and all applicable laws and regulations relating to the processing of personal data and privacy. For further information about this and how data about the property are used, please visit www.ndepcregister.com. To opt out of having information about your building made publicly available, please visit www.ndepcregister.com/optout.

There is more information in the guidance document *Energy Performance Certificates for the construction, sale and let of non-dwellings* available on the Government website at: www.gov.uk/government/collections/energy-performance-certificates. It explains the content and use of this document, advises on how to identify the authenticity of a certificate and how to make a complaint.

Opportunity to benefit from a Green Deal on this property

The Green Deal can help you cut your energy bills by making energy efficiency improvements at no upfront costs. Use the Green Deal to find trusted advisors who will come to your property, recommend measures that are right for you and help you access a range of accredited installers. Responsibility for repayments stays with the property – whoever pays the energy bills benefits so they are responsible for the payments.

To find out how you could use Green Deal finance to improve your property please call 0300 123 1234.

0950-7262-0460-6990-5000

Recommendation Report

HM Government

This report is associated with an Energy Performance Certificate.

Report Reference Number: 0950-7262-0460-6990-5000

Unit 4b, Ashroyd Business Park
Ashroyd Way
Hoyland
BARNSLEY
S74 9SB

Building Type(s): B8 Storage or Distribution

ADMINISTRATIVE INFORMATION	
Issue Date:	17 Jun 2020
Valid Until:	16 Jun 2030 (*)
Total Useful Floor Area (m²):	4849
Building Environment:	Heating and Natural Ventilation
Calculation Tool Used:	IES Ltd, Virtual Environment, v7.0.12, ApacheSim, v7.0.12
Property Reference:	706625960000
Energy Performance Certificate for the property is contained in Report Reference Number: 0970-0530-6662-0995-2006	

ENERGY ASSESSOR DETAILS	
Assessor Name:	Paul Shipley
Employer/Trading Name:	MES Building Solutions
Employer/Trading Address:	Newark Beacon, Cafferata Way, NEWARK NG24 2TN
Assessor Number:	LCEA075940
Accreditation Scheme:	CIBSE Certification Limited
Related Party Disclosure:	Not related to the owner.

(*) Unless superseded by a later recommendation report

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0950-7262-0460-6990-5000

1. Introduction

This is a Recommendation Report as defined in the Energy Performance of Buildings (England and Wales) Regulations 2012 as amended which implements the requirements of the Energy Performance of Building Directive 2010/31/EU. This Recommendation Report accompanies the relevant Non Domestic Energy Performance Certificate.

This Recommendation Report was developed based on an inspection of the building. This Recommendation Report was produced in line with the Government's approved methodology.

In accordance with Government's current guidance, the Energy Assessor is required to use plans or undertake a building inspection in order to gather information to produce this Recommendation Report.

2. Recommendations

The following sections list recommendations selected by the energy assessor for the improvement of the energy performance of the building. The recommendations are listed under four headings: short payback, medium payback, long payback, and other measures.

a) Recommendations with a short payback

This section lists recommendations with a payback of less than 3 years:

No recommendations were specified by the energy assessor.

b) Recommendations with a medium payback

This section lists recommendations with a payback of between 3 and 7 years:

Recommendation	Potential impact
Consider switching from gas to biomass.	HIGH

c) Recommendations with a long payback

This section lists recommendations with a payback of more than 7 years:

Recommendation	Potential impact
Consider installing building mounted wind turbine(s).	LOW
Add optimum start/stop to the heating system.	MEDIUM
Consider installing PV.	LOW
Add local time control to heating system.	LOW

d) Other Recommendations

This section lists other recommendations selected by the energy assessor, based on an energy performance assessment of the building. It may take into account other reliable relevant evidence that has been provided by the building owner or occupier.

No recommendations are defined by the energy assessor.

3. Next Steps

a) Your Recommendation Report

As the building occupier, it is a regulatory requirement that an Energy Performance Certificate must include a Recommendation Report unless there is no reasonable potential for energy performance improvements compared to the energy performance requirements in force.

You must be able to produce a copy of this Recommendation Report within seven days if required by an Enforcement Authority.

This Recommendation Report has also been lodged on the Government's central register. Access to the report, to the data used to compile the report, and to previous similar documents relating to the same building can be obtained through the Non-Domestic Register (www.ndepcregister.com) using the report reference number of this document.

b) Implementing recommendations

The recommendations are provided as an indication of opportunities that appear to exist to improve the building's energy efficiency.

The calculation tool has automatically generated a set of recommendations. The Energy Assessor, in the light of the energy assessment of the building, the building fabric and services, the operation of plant and equipment within the curtilage of the building, the general management of the building and its use, and other relevant reliable evidence, may remove some of the recommendations. He / She may insert additional recommendations in section 3d (Other Recommendations).

These recommendations do not include matters relating to operation and maintenance which cannot be identified from the calculation procedure.

c) Legal disclaimer

The advice provided in this Recommendation Report is intended to be for information only. Recipients of this Recommendation Report are advised to seek further detailed professional advice before reaching any decision on how to improve the energy performance of the building.

0950-7262-0460-6990-5000

d) About this document and the data in it

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a) Payback

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- Produced within the past 10 years
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- Lodged on the Register operated by or on behalf of the Secretary of State.

0950-7262-0460-6990-5000

5. Green Deal Information

The Green Deal may enable you to improve the property to make it more energy efficient and cheaper to run.

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Part of the FOCUS consultancy group



As Built SBEM & EPC Report

Unit 5b, Ashroyd Business Park
Ashroyd Way, Barnsley S74 9SB

17 June 2020

Newark (Head) Office:
Newark Beacon, Beacon Hill Office Park,
Cafferata Way, Newark, Notts, NG24 2TN.
Tel: 01636 653 055

London Office:
344-354 Gray's Inn Road, King's Cross,
London WC1X 8BP.
Tel: 0207 033 3757

Birmingham Office:
2nd Floor Quayside Tower, 252-260 Broad St,
Birmingham B1 2HF.
Tel: 0121 285 2785

info@mesbuildingsolutions.co.uk | www.mesbuildingsolutions.co.uk

MES Building Solutions is part of Midland Energy Services Limited. Registered in England, Company no: 5945430

BRUKL Output Document

HM Government

Compliance with England Building Regulations Part L 2013

Project name

Ashroyd Business Park Unit 5B

As built

Date: Wed Jun 17 08:59:58 2020

Administrative information

Building Details

Address: BARNSLEY, S74 9SB

Certification tool

Calculation engine: Apache

Calculation engine version: 7.0.12

Interface to calculation engine: IES Virtual Environment

Interface to calculation engine version: 7.0.12

BRUKL compliance check version: v5.6.a.1

Owner Details

Name: ---

Telephone number: ---

Address: ---, ---, ---

Certifier details

Name: Paul Shipley

Telephone number: 01363 655 055

Address: Newark Beacon, Cafferata Way, NEWARK, NG24 2TN

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

CO_2 emission rate from the notional building, $kgCO_2/m^2.annum$	15.1
Target CO_2 emission rate (TER), $kgCO_2/m^2.annum$	15.1
Building CO_2 emission rate (BER), $kgCO_2/m^2.annum$	10.3
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 fixed building services should achieve reasonable overall standards of energy efficiency

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

Building fabric

Element	$U_{a\text{-}Limit}$	$U_{a\text{-}Calc}$	$U_{i\text{-}Calc}$	Surface where the maximum value occurs*
Wall**	0.35	0.22	0.22	RM000005:Surf[6]
Floor	0.25	0.25	0.25	RM000011:Surf[0]
Roof	0.25	0.18	0.18	RM000016:Surf[6]
Windows***, roof windows, and rooflights	2.2	1.51	1.6	RM000005:Surf[0]
Personnel doors	2.2	1.41	1.41	RM000016:Surf[7]
Vehicle access & similar large doors	1.5	1.49	1.49	RM000016:Surf[31]
High usage entrance doors	3.5	-	-	No High usage entrance doors in building

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

* 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	3

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	YES
Whole building electric power factor achieved by power factor correction	<0.9

1- NG LPHW Rads Mech Vent

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.93	-	0.2	0	-
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- NG LPHW Rads Nat Vent

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.93	-	0.2	0	-
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.					

3- NG LPHW Rads Office Ext Vent

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.93	-	0.2	0	-
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.					

1- NG LPHW Rads Nat Vent

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	0.93	-
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.		

Local mechanical ventilation, exhaust, and terminal units

ID	System type in Non-domestic Building Services Compliance Guide
A	Local supply or extract ventilation units serving a single area
B	Zonal supply system where the fan is remote from the zone
C	Zonal extract system where the fan is remote from the zone
D	Zonal supply and extract ventilation units serving a single room or zone with heating and heat recovery
E	Local supply and extract ventilation system serving a single area with heating and heat recovery
F	Other local ventilation units
G	Fan-assisted terminal VAV unit
H	Fan coil units
I	Zonal extract system where the fan is remote from the zone with grease filter

Zone name	SFP [W/(l/s)]									HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I		
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard
5B Dis WC	0.5	-	-	-	-	-	-	-	-	-	N/A

Zone name	SFP [W/(l/s)]									HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I		
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard
5B WC	0.5	-	-	-	-	-	-	-	-	-	N/A
5B WC	0.5	-	-	-	-	-	-	-	-	-	N/A
5B Offices	-	-	0.5	-	-	-	-	-	-	-	N/A

General lighting and display lighting	Luminous efficacy [lm/W]			
Zone name	Luminaire	Lamp	Display lamp	General lighting [W]
Standard value	60	60	22	
5B Dis WC	-	97	-	35
5B Circulation	-	97	-	25
5B Reception	-	97	95	119
5B WC	-	97	-	30
5B Cleaners Store	97	-	-	3
Unit 5B Warehouse	140	-	-	3556
5B WC	-	97	-	22
5B Offices	101	-	-	580
5B Circulation	-	97	-	63

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?
5B Reception	NO (-22.4%)	NO
Unit 5B Warehouse	NO (-52.9%)	NO
5B Offices	NO (-33.8%)	NO

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?	YES
Is evidence of such assessment available as a separate submission?	YES
Are any such measures included in the proposed design?	YES

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Area [m²]	1220	1220
External area [m²]	3586.1	3586.1
Weather	LEE	LEE
Infiltration [m³/hm²@ 50Pa]	3	7
Average conductance [W/K]	1086.82	1142.33
Average U-value [W/m²K]	0.3	0.32
Alpha value* [%]	10	10

* 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
	B1 Offices and Workshop businesses
	B2 to B7 General Industrial and Special Industrial Groups
100	**B8 Storage or Distribution**
	C1 Hotels
	C2 Residential Institutions: Hospitals and Care Homes
	C2 Residential Institutions: Residential schools
	C2 Residential Institutions: Universities and colleges
	C2A Secure Residential Institutions
	Residential spaces
	D1 Non-residential Institutions: Community/Day Centre
	D1 Non-residential Institutions: Libraries, Museums, and Galleries
	D1 Non-residential Institutions: Education
	D1 Non-residential Institutions: Primary Health Care Building
	D1 Non-residential Institutions: Crown and County Courts
	D2 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	15.57	13.54
Cooling	0	0
Auxiliary	2.48	2.8
Lighting	8.9	19.35
Hot water	4.68	4.54
Equipment*	30.08	30.08
TOTAL**	**31.63**	**40.22**

* 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	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]	46.51	42.01
Primary energy* [kWh/m²]	59.65	88.34
Total emissions [kg/m²]	10.3	15.1

* 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] Central heating using water: radiators, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity										
	Actual	387.5	0	129.7	0	1.3	0.83	0	0.93	0
	Notional	339.6	0	109.4	0	1.2	0.86	0	----	----
[ST] Central heating using water: radiators, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity										
	Actual	555.8	0	186	0	27.7	0.83	0	0.93	0
	Notional	468.5	0	151	0	30.9	0.86	0	----	----
[ST] Central heating using water: radiators, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity										
	Actual	456.8	0	152.9	0	37.4	0.83	0	0.93	0
	Notional	424.1	0	136.6	0	42.4	0.86	0	----	----
[ST] No Heating or Cooling										
	Actual	0	0	0	0	0	0	0	0	0
	Notional	0	0	0	0	0	0	0	----	----

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 Building Control Body is advised to give particular attention to items whose specifications 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	0.22	RM000005:Surf[6]
Floor	0.2	0.25	RM000011:Surf[0]
Roof	0.15	0.18	RM000016:Surf[6]
Windows, roof windows, and rooflights	1.5	1.46	RM000016:Surf[0]
Personnel doors	1.5	1.41	RM000016:Surf[7]
Vehicle access & similar large doors	1.5	1.49	RM000016:Surf[31]
High usage entrance doors	1.5	-	No High usage entrance doors in building

$U_{i\text{-}Typ}$ = 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	3

Energy Performance Certificate

HM Government

Non-Domestic Building

Unit 5b, Ashroyd Business Park
Ashroyd Way
Hoyland
BARNSLEY
S74 9SB

Certificate Reference Number:
0950-8250-0380-5920-2024

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



Technical Information

Main heating fuel:	Natural Gas
Building environment:	Heating and Mechanical Ventilation
Total useful floor area (m^2):	1220
Assessment Level:	5
Building emission rate ($kgCO_2/m^2$ per year):	10.28
Primary energy use (kWh/m^2 per year):	59.65

Benchmarks

Buildings similar to this one could have ratings as follows:

24 If newly built

63 If typical of the existing stock

Administrative Information

This is an Energy Performance Certificate as defined in the Energy Performance of Buildings Regulations 2012 as amended.

Assessment Software:	Virtual Environment v7.0.12 using calculation engine ApacheSim v7.0.12
Property Reference:	828502250000
Assessor Name:	Paul Shipley
Assessor Number:	LCEA075940
Accreditation Scheme:	CIBSE Certification Limited
Employer/Trading Name:	MES Building Solutions
Employer/Trading Address:	Newark Beacon, Cafferata Way, NEWARK NG24 2TN
Issue Date:	17 Jun 2020
Valid Until:	16 Jun 2030 (unless superseded by a later certificate)
Related Party Disclosure:	Not related to the owner.

Recommendations for improving the energy performance of the building are contained in the associated Recommendation Report - 2852-4025-0508-0200-9095.

About this document and the data in it

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Opportunity to benefit from a Green Deal on this property

The Green Deal can help you cut your energy bills by making energy efficiency improvements at no upfront costs. Use the Green Deal to find trusted advisors who will come to your property, recommend measures that are right for you and help you access a range of accredited installers. Responsibility for repayments stays with the property – whoever pays the energy bills benefits so they are responsible for the payments.

To find out how you could use Green Deal finance to improve your property please call 0300 123 1234.

2852-4025-0508-0200-9095

Recommendation Report

HM Government

This report is associated with an Energy Performance Certificate.

Report Reference Number: 2852-4025-0508-0200-9095

Unit 5b, Ashroyd Business Park
Ashroyd Way
Hoyland
BARNSLEY
S74 9SB

Building Type(s): B8 Storage or Distribution

ADMINISTRATIVE INFORMATION	
Issue Date:	17 Jun 2020
Valid Until:	16 Jun 2030 (*)
Total Useful Floor Area (m²):	1220
Building Environment:	Heating and Mechanical Ventilation
Calculation Tool Used:	IES Ltd, Virtual Environment, v7.0.12, ApacheSim, v7.0.12
Property Reference:	828502250000
Energy Performance Certificate for the property is contained in Report Reference Number: 0950-8250-0380-5920-2024	

ENERGY ASSESSOR DETAILS	
Assessor Name:	Paul Shipley
Employer/Trading Name:	MES Building Solutions
Employer/Trading Address:	Newark Beacon, Cafferata Way, NEWARK NG24 2TN
Assessor Number:	LCEA075940
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2852-4025-0508-0200-9095

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3. Next Steps..... 5
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1. Introduction

This is a Recommendation Report as defined in the Energy Performance of Buildings (England and Wales) Regulations 2012 as amended which implements the requirements of the Energy Performance of Building Directive 2010/31/EU. This Recommendation Report accompanies the relevant Non Domestic Energy Performance Certificate.

This Recommendation Report was developed based on an inspection of the building. This Recommendation Report was produced in line with the Government's approved methodology.

In accordance with Government's current guidance, the Energy Assessor is required to use plans or undertake a building inspection in order to gather information to produce this Recommendation Report.

2. Recommendations

The following sections list recommendations selected by the energy assessor for the improvement of the energy performance of the building. The recommendations are listed under four headings: short payback, medium payback, long payback, and other measures.

a) Recommendations with a short payback

This section lists recommendations with a payback of less than 3 years:

No recommendations were specified by the energy assessor.

b) Recommendations with a medium payback

This section lists recommendations with a payback of between 3 and 7 years:

Recommendation	Potential impact
Consider switching from gas to biomass.	HIGH

c) Recommendations with a long payback

This section lists recommendations with a payback of more than 7 years:

Recommendation	Potential impact
Consider installing building mounted wind turbine(s).	LOW
Add optimum start/stop to the heating system.	MEDIUM
Consider installing PV.	LOW
Add local time control to heating system.	LOW

d) Other Recommendations

This section lists other recommendations selected by the energy assessor, based on an energy performance assessment of the building. It may take into account other reliable relevant evidence that has been provided by the building owner or occupier.

No recommendations are defined by the energy assessor.

3. Next Steps

a) Your Recommendation Report

As the building occupier, it is a regulatory requirement that an Energy Performance Certificate must include a Recommendation Report unless there is no reasonable potential for energy performance improvements compared to the energy performance requirements in force.

You must be able to produce a copy of this Recommendation Report within seven days if required by an Enforcement Authority.

This Recommendation Report has also been lodged on the Government's central register. Access to the report, to the data used to compile the report, and to previous similar documents relating to the same building can be obtained through the Non-Domestic Register (www.ndepcregister.com) using the report reference number of this document.

b) Implementing recommendations

The recommendations are provided as an indication of opportunities that appear to exist to improve the building's energy efficiency.

The calculation tool has automatically generated a set of recommendations. The Energy Assessor, in the light of the energy assessment of the building, the building fabric and services, the operation of plant and equipment within the curtilage of the building, the general management of the building and its use, and other relevant reliable evidence, may remove some of the recommendations. He / She may insert additional recommendations in section 3d (Other Recommendations).

These recommendations do not include matters relating to operation and maintenance which cannot be identified from the calculation procedure.

c) Legal disclaimer

The advice provided in this Recommendation Report is intended to be for information only. Recipients of this Recommendation Report are advised to seek further detailed professional advice before reaching any decision on how to improve the energy performance of the building.

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2852-4025-0508-0200-9095

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mes buildingsolutions
Part of the FOCUS consultancy group



As Built SBEM & EPC Report

Unit 5c, Ashroyd Business Park
Ashroyd Way, Barnsley S74 9SB

17 June 2020

Newark (Head) Office:
Newark Beacon, Beacon Hill Office Park,
Cafferata Way, Newark, Notts, NG24 2TN.
Tel: 01636 653 055

London Office:
344-354 Gray's Inn Road, King's Cross,
London WC1X 8BP.
Tel: 0207 033 3757

Birmingham Office:
2nd Floor Quayside Tower, 252-260 Broad St,
Birmingham B1 2HF.
Tel: 0121 285 2785

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MES Building Solutions is part of Midland Energy Services Limited. Registered in England, Company no: 5945430

BRUKL Output Document

HM Government

Compliance with England Building Regulations Part L 2013

Project name

Ashroyd Business Park Unit 5C

As built

Date: Wed Jun 17 09:06:02 2020

Administrative information

Building Details

Address: BARNSLEY, S74 9SB

Certification tool

Calculation engine: Apache

Calculation engine version: 7.0.12

Interface to calculation engine: IES Virtual Environment

Interface to calculation engine version: 7.0.12

BRUKL compliance check version: v5.6.a.1

Owner Details

Name: ---

Telephone number: ---

Address: ---, ---, ---

Certifier details

Name: Paul Shipley

Telephone number: 01363 655 055

Address: Newark Beacon, Cafferata Way, NEWARK, NG24 2TN

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

CO_2 emission rate from the notional building, $kgCO_2/m^2.annum$	14.5
Target CO_2 emission rate (TER), $kgCO_2/m^2.annum$	14.5
Building CO_2 emission rate (BER), $kgCO_2/m^2.annum$	9.2
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 fixed building services should achieve reasonable overall standards of energy efficiency

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

Building fabric

Element	$U_{a\text{-}Limit}$	$U_{a\text{-}Calc}$	$U_{i\text{-}Calc}$	Surface where the maximum value occurs*
Wall**	0.35	0.22	0.22	RM00001B:Surf[12]
Floor	0.25	0.25	0.25	RM00001B:Surf[49]
Roof	0.25	0.18	0.18	RM00001B:Surf[10]
Windows***, roof windows, and rooflights	2.2	1.51	1.6	RM00001B:Surf[31]
Personnel doors	2.2	1.41	1.41	RM00001B:Surf[11]
Vehicle access & similar large doors	1.5	1.49	1.49	RM00001B:Surf[46]
High usage entrance doors	3.5	-	-	No High usage entrance doors in building

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

* 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	3

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	YES
Whole building electric power factor achieved by power factor correction	<0.9

1- NG LPHW Rads Mech Vent

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.93	-	0.2	0	-
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- NG LPHW Rads Nat Vent

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.93	-	0.2	0	-
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.					

3- NG LPHW Rads Office Ext Vent

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.93	-	0.2	0	-
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.					

1- NG LPHW Rads Nat Vent

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	0.93	-
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.		

Local mechanical ventilation, exhaust, and terminal units

ID	System type in Non-domestic Building Services Compliance Guide
A	Local supply or extract ventilation units serving a single area
B	Zonal supply system where the fan is remote from the zone
C	Zonal extract system where the fan is remote from the zone
D	Zonal supply and extract ventilation units serving a single room or zone with heating and heat recovery
E	Local supply and extract ventilation system serving a single area with heating and heat recovery
F	Other local ventilation units
G	Fan-assisted terminal VAV unit
H	Fan coil units
I	Zonal extract system where the fan is remote from the zone with grease filter

Zone name	SFP [W/(l/s)]									HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I		
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard
5C Dis WC	0.5	-	-	-	-	-	-	-	-	-	N/A

Zone name	SFP [W/(l/s)]									HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I		
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard
5C WC	0.5	-	-	-	-	-	-	-	-	-	N/A
5C Offices	-	-	0.3	-	-	-	-	-	-	-	N/A
5C WC	0.6	-	-	-	-	-	-	-	-	-	N/A

General lighting and display lighting	Luminous efficacy [lm/W]			
Zone name	Luminaire	Lamp	Display lamp	General lighting [W]
Standard value	60	60	22	
Unit 5C Warehouse	140	-	-	5929
5C Dis WC	-	97	-	35
5C WC	-	97	-	29
5C Cleaners Store	97	-	-	4
5C Circulation	-	97	-	26
5C Reception	-	97	95	150
5C Offices	101	-	-	1027
5C WC	-	97	-	47
5C Circulation	-	97	-	59

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?
Unit 5C Warehouse	NO (-53.2%)	NO
5C Reception	NO (-21.1%)	NO
5C Offices	NO (-24.2%)	NO

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?	YES
Is evidence of such assessment available as a separate submission?	YES
Are any such measures included in the proposed design?	YES

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Area [m²]	2071.1	2071.1
External area [m²]	5567.2	5567.2
Weather	LEE	LEE
Infiltration [m³/hm²@ 50Pa]	3	7
Average conductance [W/K]	1703.15	1772.41
Average U-value [W/m²K]	0.31	0.32
Alpha value* [%]	10	10

* 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
	B1 Offices and Workshop businesses
	B2 to B7 General Industrial and Special Industrial Groups
100	**B8 Storage or Distribution**
	C1 Hotels
	C2 Residential Institutions: Hospitals and Care Homes
	C2 Residential Institutions: Residential schools
	C2 Residential Institutions: Universities and colleges
	C2A Secure Residential Institutions
	Residential spaces
	D1 Non-residential Institutions: Community/Day Centre
	D1 Non-residential Institutions: Libraries, Museums, and Galleries
	D1 Non-residential Institutions: Education
	D1 Non-residential Institutions: Primary Health Care Building
	D1 Non-residential Institutions: Crown and County Courts
	D2 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	13.13	11.47
Cooling	0	0
Auxiliary	2.16	3.35
Lighting	8.17	18.45
Hot water	4.73	4.59
Equipment*	30.53	30.53
TOTAL**	**28.19**	**37.87**

* 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	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]	39.22	35.6
Primary energy* [kWh/m²]	53.5	84.86
Total emissions [kg/m²]	9.2	14.5

* 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] Central heating using water: radiators, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity										
	Actual	339.7	0	113.7	0	1.3	0.83	0	0.93	0
	Notional	293.4	0	94.5	0	1.2	0.86	0	----	----
[ST] Central heating using water: radiators, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity										
	Actual	474.7	0	158.9	0	31.8	0.83	0	0.93	0
	Notional	402.1	0	129.6	0	34.3	0.86	0	----	----
[ST] Central heating using water: radiators, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity										
	Actual	375.2	0	125.6	0	27	0.83	0	0.93	0
	Notional	348.9	0	112.4	0	43.6	0.86	0	----	----
[ST] No Heating or Cooling										
	Actual	0	0	0	0	0	0	0	0	0
	Notional	0	0	0	0	0	0	0	----	----

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 Building Control Body is advised to give particular attention to items whose specifications 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	0.22	RM00001B:Surf[12]
Floor	0.2	0.25	RM00001B:Surf[49]
Roof	0.15	0.18	RM00001B:Surf[10]
Windows, roof windows, and rooflights	1.5	1.46	RM00001B:Surf[0]
Personnel doors	1.5	1.41	RM00001B:Surf[11]
Vehicle access & similar large doors	1.5	1.49	RM00001B:Surf[46]
High usage entrance doors	1.5	-	No High usage entrance doors in building

$U_{i\text{-}Typ}$ = 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	3

Energy Performance Certificate

HM Government

Non-Domestic Building

Unit 5c, Ashroyd Business Park
Ashroyd Way
Hoyland
BARNSLEY
S74 9SB

Certificate Reference Number:
0950-6214-0380-5950-2040

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



Technical Information

Main heating fuel:	Natural Gas
Building environment:	Heating and Mechanical Ventilation
Total useful floor area (m^2):	2071
Assessment Level:	5
Building emission rate ($kgCO_2/m^2$ per year):	9.22
Primary energy use (kWh/m^2 per year):	53.5

Benchmarks

Buildings similar to this one could have ratings as follows:

23 If newly built

61 If typical of the existing stock

Administrative Information

This is an Energy Performance Certificate as defined in the Energy Performance of Buildings Regulations 2012 as amended.

Assessment Software:	Virtual Environment v7.0.12 using calculation engine ApacheSim v7.0.12
Property Reference:	648142550000
Assessor Name:	Paul Shipley
Assessor Number:	LCEA075940
Accreditation Scheme:	CIBSE Certification Limited
Employer/Trading Name:	MES Building Solutions
Employer/Trading Address:	Newark Beacon, Cafferata Way, NEWARK NG24 2TN
Issue Date:	17 Jun 2020
Valid Until:	16 Jun 2030 (unless superseded by a later certificate)
Related Party Disclosure:	Not related to the owner.

Recommendations for improving the energy performance of the building are contained in the associated Recommendation Report - 2654-4055-0108-0200-9491.

About this document and the data in it

This document has been produced following an energy assessment undertaken by a qualified Energy Assessor, accredited by CIBSE Certification Limited. You can obtain contact details of the Accreditation Scheme at cibsecertification.com.

A copy of this certificate has been lodged on a national register as a requirement under the Energy Performance of Buildings Regulations 2012 as amended. It will be made available via the online search function at www.ndepcregister.com. The certificate (including the building address) and other data about the building collected during the energy assessment but not shown on the certificate, for instance heating system data, will be made publicly available at www.opendatacommunities.org.

This certificate and other data about the building may be shared with other bodies (including government departments and enforcement agencies) for research, statistical and enforcement purposes. Any personal data it contains will be processed in accordance with the General Data Protection Regulation and all applicable laws and regulations relating to the processing of personal data and privacy. For further information about this and how data about the property are used, please visit www.ndepcregister.com. To opt out of having information about your building made publicly available, please visit www.ndepcregister.com/optout.

There is more information in the guidance document *Energy Performance Certificates for the construction, sale and let of non-dwellings* available on the Government website at: www.gov.uk/government/collections/energy-performance-certificates. It explains the content and use of this document, advises on how to identify the authenticity of a certificate and how to make a complaint.

Opportunity to benefit from a Green Deal on this property

The Green Deal can help you cut your energy bills by making energy efficiency improvements at no upfront costs. Use the Green Deal to find trusted advisors who will come to your property, recommend measures that are right for you and help you access a range of accredited installers. Responsibility for repayments stays with the property – whoever pays the energy bills benefits so they are responsible for the payments.

To find out how you could use Green Deal finance to improve your property please call 0300 123 1234.

2654-4055-0108-0200-9491

Recommendation Report

HM Government

This report is associated with an Energy Performance Certificate.

Report Reference Number: 2654-4055-0108-0200-9491

Unit 5c, Ashroyd Business Park
Ashroyd Way
Hoyland
BARNSLEY
S74 9SB

Building Type(s): B8 Storage or Distribution

ADMINISTRATIVE INFORMATION	
Issue Date:	17 Jun 2020
Valid Until:	16 Jun 2030 (*)
Total Useful Floor Area (m²):	2071
Building Environment:	Heating and Mechanical Ventilation
Calculation Tool Used:	IES Ltd, Virtual Environment, v7.0.12, ApacheSim, v7.0.12
Property Reference:	648142550000
Energy Performance Certificate for the property is contained in Report Reference Number: 0950-6214-0380-5950-2040	

ENERGY ASSESSOR DETAILS	
Assessor Name:	Paul Shipley
Employer/Trading Name:	MES Building Solutions
Employer/Trading Address:	Newark Beacon, Cafferata Way, NEWARK NG24 2TN
Assessor Number:	LCEA075940
Accreditation Scheme:	CIBSE Certification Limited
Related Party Disclosure:	Not related to the owner.

(*) Unless superseded by a later recommendation report

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2654-4055-0108-0200-9491

1. Introduction

This is a Recommendation Report as defined in the Energy Performance of Buildings (England and Wales) Regulations 2012 as amended which implements the requirements of the Energy Performance of Building Directive 2010/31/EU. This Recommendation Report accompanies the relevant Non Domestic Energy Performance Certificate.

This Recommendation Report was developed based on an inspection of the building. This Recommendation Report was produced in line with the Government's approved methodology.

In accordance with Government's current guidance, the Energy Assessor is required to use plans or undertake a building inspection in order to gather information to produce this Recommendation Report.

2. Recommendations

The following sections list recommendations selected by the energy assessor for the improvement of the energy performance of the building. The recommendations are listed under four headings: short payback, medium payback, long payback, and other measures.

a) Recommendations with a short payback

This section lists recommendations with a payback of less than 3 years:

No recommendations were specified by the energy assessor.

b) Recommendations with a medium payback

This section lists recommendations with a payback of between 3 and 7 years:

Recommendation	Potential impact
Consider switching from gas to biomass.	HIGH

c) Recommendations with a long payback

This section lists recommendations with a payback of more than 7 years:

Recommendation	Potential impact
Consider installing building mounted wind turbine(s).	LOW
Add optimum start/stop to the heating system.	MEDIUM
Consider installing PV.	LOW
Add local time control to heating system.	LOW

d) Other Recommendations

This section lists other recommendations selected by the energy assessor, based on an energy performance assessment of the building. It may take into account other reliable relevant evidence that has been provided by the building owner or occupier.

No recommendations are defined by the energy assessor.

3. Next Steps

a) Your Recommendation Report

As the building occupier, it is a regulatory requirement that an Energy Performance Certificate must include a Recommendation Report unless there is no reasonable potential for energy performance improvements compared to the energy performance requirements in force.

You must be able to produce a copy of this Recommendation Report within seven days if required by an Enforcement Authority.

This Recommendation Report has also been lodged on the Government's central register. Access to the report, to the data used to compile the report, and to previous similar documents relating to the same building can be obtained through the Non-Domestic Register (www.ndepcregister.com) using the report reference number of this document.

b) Implementing recommendations

The recommendations are provided as an indication of opportunities that appear to exist to improve the building's energy efficiency.

The calculation tool has automatically generated a set of recommendations. The Energy Assessor, in the light of the energy assessment of the building, the building fabric and services, the operation of plant and equipment within the curtilage of the building, the general management of the building and its use, and other relevant reliable evidence, may remove some of the recommendations. He / She may insert additional recommendations in section 3d (Other Recommendations).

These recommendations do not include matters relating to operation and maintenance which cannot be identified from the calculation procedure.

c) Legal disclaimer

The advice provided in this Recommendation Report is intended to be for information only. Recipients of this Recommendation Report are advised to seek further detailed professional advice before reaching any decision on how to improve the energy performance of the building.

2654-4055-0108-0200-9491

d) About this document and the data in it

This document has been produced following an energy assessment undertaken by a qualified Energy Assessor, accredited by CIBSE Certification Limited. You can obtain contact details of the Accreditation Scheme at cibsecertification.com.

A copy of this report has been lodged on a national register as a requirement under the Energy Performance of Buildings Regulations 2012 as amended. It will be made available via the online search function at www.ndepcregister.com. The report (including the building address) and other data about the building collected during the energy assessment but not shown on the report, for instance heating system data, will be made publicly available at www.opendatacommunities.org.

This report and other data about the building may be shared with other bodies (including government departments and enforcement agencies) for research, statistical and enforcement purposes. Any personal data it contains will be processed in accordance with the General Data Protection Regulation and all applicable laws and regulations relating to the processing of personal data and privacy. For further information about this and how data about the property are used, please visit www.ndepcregister.com. To opt out of having information about your building made publicly available, please visit www.ndepcregister.com/optout.

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www.gov.uk/government/collections/energy-performance-certificates. It explains the content and use of this document, advises on how to identify the authenticity of a report and how to make a complaint.

4. Glossary

a) Payback

The payback periods are based on data collated through Carbon Trust energy survey reports. They provide a range of typical payback periods for different types of measures. They are likely payback periods, and may differ from the actual payback period for the building being assessed. Therefore, it is recommended that each suggested measure be further investigated before reaching any decision on how to improve the energy efficiency of the building.

b) Carbon impact

The High / Medium / Low carbon impact indicators against each recommendation are provided to distinguish, between the suggested recommendations, those that would most effectively reduce carbon emissions from the building. For automatically generated recommendations, the carbon impact indicators are determined by software, but may have been adjusted by the Energy Assessor based on the energy assessment of the building.

c) Valid report

A valid report is a report that has been:

- Produced within the past 10 years
- Produced by an Energy Assessor who is accredited to produce Recommendation Reports through a Government Approved Accreditation Scheme.
- Lodged on the Register operated by or on behalf of the Secretary of State.

5. Green Deal Information

The Green Deal may enable you to improve the property to make it more energy efficient and cheaper to run.

mes buildingsolutions
Part of the FOCUS consultancy group



As Built SBEM & EPC Report

Unit 5d, Ashroyd Business Park
Ashroyd Way, Barnsley S74 9SB

17 June 2020

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London WC1X 8BP.
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MES Building Solutions is part of Midland Energy Services Limited. Registered in England, Company no: 5945430

BRUKL Output Document

HM Government

Compliance with England Building Regulations Part L 2013

Project name

Ashroyd Business Park Unit 5D

As built

Date: Wed Jun 17 09:12:43 2020

Administrative information

Building Details

Address: BARNSLEY, S74 9SB

Certification tool

Calculation engine: Apache

Calculation engine version: 7.0.12

Interface to calculation engine: IES Virtual Environment

Interface to calculation engine version: 7.0.12

BRUKL compliance check version: v5.6.a.1

Owner Details

Name: ---

Telephone number: ---

Address: ---, ---, ---

Certifier details

Name: Paul Shipley

Telephone number: 01363 655 055

Address: Newark Beacon, Cafferata Way, NEWARK, NG24 2TN

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

CO_2 emission rate from the notional building, $kgCO_2/m^2.annum$	16.6
Target CO_2 emission rate (TER), $kgCO_2/m^2.annum$	16.6
Building CO_2 emission rate (BER), $kgCO_2/m^2.annum$	10.9
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 fixed building services should achieve reasonable overall standards of energy efficiency

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

Building fabric

Element	$U_{a\text{-}Limit}$	$U_{a\text{-}Calc}$	$U_{i\text{-}Calc}$	Surface where the maximum value occurs*
Wall**	0.35	0.22	0.22	RM000026:Surf[13]
Floor	0.25	0.25	0.25	RM000022:Surf[0]
Roof	0.25	0.18	0.18	NT000000:Surf[6]
Windows***, roof windows, and rooflights	2.2	1.52	1.6	RM000026:Surf[0]
Personnel doors	2.2	1.41	1.41	NT000000:Surf[7]
Vehicle access & similar large doors	1.5	1.49	1.49	NT000000:Surf[31]
High usage entrance doors	3.5	-	-	No High usage entrance doors in building

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

* 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	2

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	YES
Whole building electric power factor achieved by power factor correction	<0.9

1- NG LPHW Rads Mech Vent

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.93	-	0.2	0	-
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- NG LPHW Rads Nat Vent

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.93	-	0.2	0	-
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.					

3- NG LPHW Rads Office Ext Vent

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.93	-	0.2	0	-
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.					

1- NG LPHW Rads Nat Vent

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	0.93	-
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.		

Local mechanical ventilation, exhaust, and terminal units

ID	System type in Non-domestic Building Services Compliance Guide
A	Local supply or extract ventilation units serving a single area
B	Zonal supply system where the fan is remote from the zone
C	Zonal extract system where the fan is remote from the zone
D	Zonal supply and extract ventilation units serving a single room or zone with heating and heat recovery
E	Local supply and extract ventilation system serving a single area with heating and heat recovery
F	Other local ventilation units
G	Fan-assisted terminal VAV unit
H	Fan coil units
I	Zonal extract system where the fan is remote from the zone with grease filter

Zone name	SFP [W/(l/s)]									HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I		
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard
5D Dis WC	0.5	-	-	-	-	-	-	-	-	-	N/A

Zone name	SFP [W/(l/s)]									HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I		
Standard value	0.3	1.1	0.5	1.9	1.6	0.5	1.1	0.5	1	Zone	Standard
5D WC	0.5	-	-	-	-	-	-	-	-	-	N/A
5D Offices	-	-	0.3	-	-	-	-	-	-	-	N/A
5D WC	0.5	-	-	-	-	-	-	-	-	-	N/A

General lighting and display lighting	Luminous efficacy [lm/W]			
Zone name	Luminaire	Lamp	Display lamp	General lighting [W]
Standard value	60	60	22	
5D Dis WC	-	97	-	34
5D Reception	-	97	95	131
5D Cleaners Store	97	-	-	4
5D WC	-	97	-	31
5D Circulation	-	97	-	26
Unit 5D Warehouse	140	-	-	3011
5D Offices	101	-	-	628
5D WC	-	97	-	23
5D Circulation	-	97	-	64

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?
5D Reception	NO (-21.5%)	NO
Unit 5D Warehouse	NO (-51.5%)	NO
5D Offices	NO (-30.2%)	NO

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?	YES
Is evidence of such assessment available as a separate submission?	YES
Are any such measures included in the proposed design?	YES

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Area [m²]	1058.1	1058.1
External area [m²]	3148.7	3148.7
Weather	LEE	LEE
Infiltration [m³/hm²@ 50Pa]	2	7
Average conductance [W/K]	970.18	1009.85
Average U-value [W/m²K]	0.31	0.32
Alpha value* [%]	10.01	10

* 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
	B1 Offices and Workshop businesses
	B2 to B7 General Industrial and Special Industrial Groups
100	**B8 Storage or Distribution**
	C1 Hotels
	C2 Residential Institutions: Hospitals and Care Homes
	C2 Residential Institutions: Residential schools
	C2 Residential Institutions: Universities and colleges
	C2A Secure Residential Institutions
	Residential spaces
	D1 Non-residential Institutions: Community/Day Centre
	D1 Non-residential Institutions: Libraries, Museums, and Galleries
	D1 Non-residential Institutions: Education
	D1 Non-residential Institutions: Primary Health Care Building
	D1 Non-residential Institutions: Crown and County Courts
	D2 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	18.5	16.61
Cooling	0	0
Auxiliary	2.34	3.66
Lighting	9.1	20.11
Hot water	4.65	4.52
Equipment*	30.17	30.17
TOTAL**	**34.6**	**44.9**

* 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	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]	55.27	51.54
Primary energy* [kWh/m²]	63.39	96.94
Total emissions [kg/m²]	10.9	16.6

* 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] Central heating using water: radiators, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity										
	Actual	355.6	0	119	0	1.3	0.83	0	0.93	0
	Notional	319.4	0	102.9	0	1.2	0.86	0	----	----
[ST] Central heating using water: radiators, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity										
	Actual	531.9	0	178.1	0	28	0.83	0	0.93	0
	Notional	462.5	0	149	0	31.2	0.86	0	----	----
[ST] Central heating using water: radiators, [HS] LTHW boiler, [HFT] Natural Gas, [CFT] Electricity										
	Actual	424	0	141.9	0	26.2	0.83	0	0.93	0
	Notional	407.3	0	131.3	0	43.1	0.86	0	----	----
[ST] No Heating or Cooling										
	Actual	0	0	0	0	0	0	0	0	0
	Notional	0	0	0	0	0	0	0	----	----

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 Building Control Body is advised to give particular attention to items whose specifications 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	0.22	RM000026:Surf[13]
Floor	0.2	0.25	RM000022:Surf[0]
Roof	0.15	0.18	NT000000:Surf[6]
Windows, roof windows, and rooflights	1.5	1.46	NT000000:Surf[0]
Personnel doors	1.5	1.41	NT000000:Surf[7]
Vehicle access & similar large doors	1.5	1.49	NT000000:Surf[31]
High usage entrance doors	1.5	-	No High usage entrance doors in building

$U_{i\text{-}Typ}$ = 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	2

Energy Performance Certificate

HM Government

Non-Domestic Building

Unit 5d, Ashroyd Business Park
Ashroyd Way
Hoyland
BARNSLEY
S74 9SB

Certificate Reference Number:
0424-9756-6230-9700-9003

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



Technical Information

Main heating fuel:	Natural Gas
Building environment:	Heating and Mechanical Ventilation
Total useful floor area (m^2):	1058
Assessment Level:	5
Building emission rate ($kgCO_2/m^2$ per year):	10.94
Primary energy use (kWh/m^2 per year):	63.39

Benchmarks

Buildings similar to this one could have ratings as follows:

25 If newly built

67 If typical of the existing stock

Administrative Information

This is an Energy Performance Certificate as defined in the Energy Performance of Buildings Regulations 2012 as amended.

Assessment Software:	Virtual Environment v7.0.12 using calculation engine ApacheSim v7.0.12
Property Reference:	946747260000
Assessor Name:	Paul Shipley
Assessor Number:	LCEA075940
Accreditation Scheme:	CIBSE Certification Limited
Employer/Trading Name:	MES Building Solutions
Employer/Trading Address:	Newark Beacon, Cafferata Way, NEWARK NG24 2TN
Issue Date:	17 Jun 2020
Valid Until:	16 Jun 2030 (unless superseded by a later certificate)
Related Party Disclosure:	Not related to the owner.

Recommendations for improving the energy performance of the building are contained in the associated Recommendation Report - 0950-9274-0460-6920-7044.

About this document and the data in it

This document has been produced following an energy assessment undertaken by a qualified Energy Assessor, accredited by CIBSE Certification Limited. You can obtain contact details of the Accreditation Scheme at cibsecertification.com.

A copy of this certificate has been lodged on a national register as a requirement under the Energy Performance of Buildings Regulations 2012 as amended. It will be made available via the online search function at www.ndepcregister.com. The certificate (including the building address) and other data about the building collected during the energy assessment but not shown on the certificate, for instance heating system data, will be made publicly available at www.opendatacommunities.org.

This certificate and other data about the building may be shared with other bodies (including government departments and enforcement agencies) for research, statistical and enforcement purposes. Any personal data it contains will be processed in accordance with the General Data Protection Regulation and all applicable laws and regulations relating to the processing of personal data and privacy. For further information about this and how data about the property are used, please visit www.ndepcregister.com. To opt out of having information about your building made publicly available, please visit www.ndepcregister.com/optout.

There is more information in the guidance document *Energy Performance Certificates for the construction, sale and let of non-dwellings* available on the Government website at: www.gov.uk/government/collections/energy-performance-certificates. It explains the content and use of this document, advises on how to identify the authenticity of a certificate and how to make a complaint.

Opportunity to benefit from a Green Deal on this property

The Green Deal can help you cut your energy bills by making energy efficiency improvements at no upfront costs. Use the Green Deal to find trusted advisors who will come to your property, recommend measures that are right for you and help you access a range of accredited installers. Responsibility for repayments stays with the property – whoever pays the energy bills benefits so they are responsible for the payments.

To find out how you could use Green Deal finance to improve your property please call 0300 123 1234.

0950-9274-0460-6920-7044

Recommendation Report

HM Government

This report is associated with an Energy Performance Certificate.

Report Reference Number: 0950-9274-0460-6920-7044

Unit 5d, Ashroyd Business Park
Ashroyd Way
Hoyland
BARNSLEY
S74 9SB

Building Type(s): B8 Storage or Distribution

ADMINISTRATIVE INFORMATION	
Issue Date:	17 Jun 2020
Valid Until:	16 Jun 2030 (*)
Total Useful Floor Area (m²):	1058
Building Environment:	Heating and Mechanical Ventilation
Calculation Tool Used:	IES Ltd, Virtual Environment, v7.0.12, ApacheSim, v7.0.12
Property Reference:	946747260000
Energy Performance Certificate for the property is contained in Report Reference Number: 0424-9756-6230-9700-9003	

ENERGY ASSESSOR DETAILS	
Assessor Name:	Paul Shipley
Employer/Trading Name:	MES Building Solutions
Employer/Trading Address:	Newark Beacon, Cafferata Way, NEWARK NG24 2TN
Assessor Number:	LCEA075940
Accreditation Scheme:	CIBSE Certification Limited
Related Party Disclosure:	Not related to the owner.

(*) Unless superseded by a later recommendation report

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0950-9274-0460-6920-7044

1. Introduction

This is a Recommendation Report as defined in the Energy Performance of Buildings (England and Wales) Regulations 2012 as amended which implements the requirements of the Energy Performance of Building Directive 2010/31/EU. This Recommendation Report accompanies the relevant Non Domestic Energy Performance Certificate.

This Recommendation Report was developed based on an inspection of the building. This Recommendation Report was produced in line with the Government's approved methodology.

In accordance with Government's current guidance, the Energy Assessor is required to use plans or undertake a building inspection in order to gather information to produce this Recommendation Report.

2. Recommendations

The following sections list recommendations selected by the energy assessor for the improvement of the energy performance of the building. The recommendations are listed under four headings: short payback, medium payback, long payback, and other measures.

a) Recommendations with a short payback

This section lists recommendations with a payback of less than 3 years:

No recommendations were specified by the energy assessor.

b) Recommendations with a medium payback

This section lists recommendations with a payback of between 3 and 7 years:

Recommendation	Potential impact
Consider switching from gas to biomass.	HIGH

c) Recommendations with a long payback

This section lists recommendations with a payback of more than 7 years:

Recommendation	Potential impact
Consider installing building mounted wind turbine(s).	LOW
Add optimum start/stop to the heating system.	MEDIUM
Add local time control to heating system.	LOW
Consider installing PV.	LOW

d) Other Recommendations

This section lists other recommendations selected by the energy assessor, based on an energy performance assessment of the building. It may take into account other reliable relevant evidence that has been provided by the building owner or occupier.

No recommendations are defined by the energy assessor.

3. Next Steps

a) Your Recommendation Report

As the building occupier, it is a regulatory requirement that an Energy Performance Certificate must include a Recommendation Report unless there is no reasonable potential for energy performance improvements compared to the energy performance requirements in force.

You must be able to produce a copy of this Recommendation Report within seven days if required by an Enforcement Authority.

This Recommendation Report has also been lodged on the Government's central register. Access to the report, to the data used to compile the report, and to previous similar documents relating to the same building can be obtained through the Non-Domestic Register (www.ndepcregister.com) using the report reference number of this document.

b) Implementing recommendations

The recommendations are provided as an indication of opportunities that appear to exist to improve the building's energy efficiency.

The calculation tool has automatically generated a set of recommendations. The Energy Assessor, in the light of the energy assessment of the building, the building fabric and services, the operation of plant and equipment within the curtilage of the building, the general management of the building and its use, and other relevant reliable evidence, may remove some of the recommendations. He / She may insert additional recommendations in section 3d (Other Recommendations).

These recommendations do not include matters relating to operation and maintenance which cannot be identified from the calculation procedure.

c) Legal disclaimer

The advice provided in this Recommendation Report is intended to be for information only. Recipients of this Recommendation Report are advised to seek further detailed professional advice before reaching any decision on how to improve the energy performance of the building.

0950-9274-0460-6920-7044

d) About this document and the data in it

This document has been produced following an energy assessment undertaken by a qualified Energy Assessor, accredited by CIBSE Certification Limited. You can obtain contact details of the Accreditation Scheme at cibsecertification.com.

A copy of this report has been lodged on a national register as a requirement under the Energy Performance of Buildings Regulations 2012 as amended. It will be made available via the online search function at www.ndepcregister.com. The report (including the building address) and other data about the building collected during the energy assessment but not shown on the report, for instance heating system data, will be made publicly available at www.opendatacommunities.org.

This report and other data about the building may be shared with other bodies (including government departments and enforcement agencies) for research, statistical and enforcement purposes. Any personal data it contains will be processed in accordance with the General Data Protection Regulation and all applicable laws and regulations relating to the processing of personal data and privacy. For further information about this and how data about the property are used, please visit www.ndepcregister.com. To opt out of having information about your building made publicly available, please visit www.ndepcregister.com/optout.

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www.gov.uk/government/collections/energy-performance-certificates. It explains the content and use of this document, advises on how to identify the authenticity of a report and how to make a complaint.

4. Glossary

a) Payback

The payback periods are based on data collated through Carbon Trust energy survey reports. They provide a range of typical payback periods for different types of measures. They are likely payback periods, and may differ from the actual payback period for the building being assessed. Therefore, it is recommended that each suggested measure be further investigated before reaching any decision on how to improve the energy efficiency of the building.

b) Carbon impact

The High / Medium / Low carbon impact indicators against each recommendation are provided to distinguish, between the suggested recommendations, those that would most effectively reduce carbon emissions from the building. For automatically generated recommendations, the carbon impact indicators are determined by software, but may have been adjusted by the Energy Assessor based on the energy assessment of the building.

c) Valid report

A valid report is a report that has been:

- Produced within the past 10 years
- Produced by an Energy Assessor who is accredited to produce Recommendation Reports through a Government Approved Accreditation Scheme.
- Lodged on the Register operated by or on behalf of the Secretary of State.

0950-9274-0460-6920-7044

5. Green Deal Information

The Green Deal may enable you to improve the property to make it more energy efficient and cheaper to run.