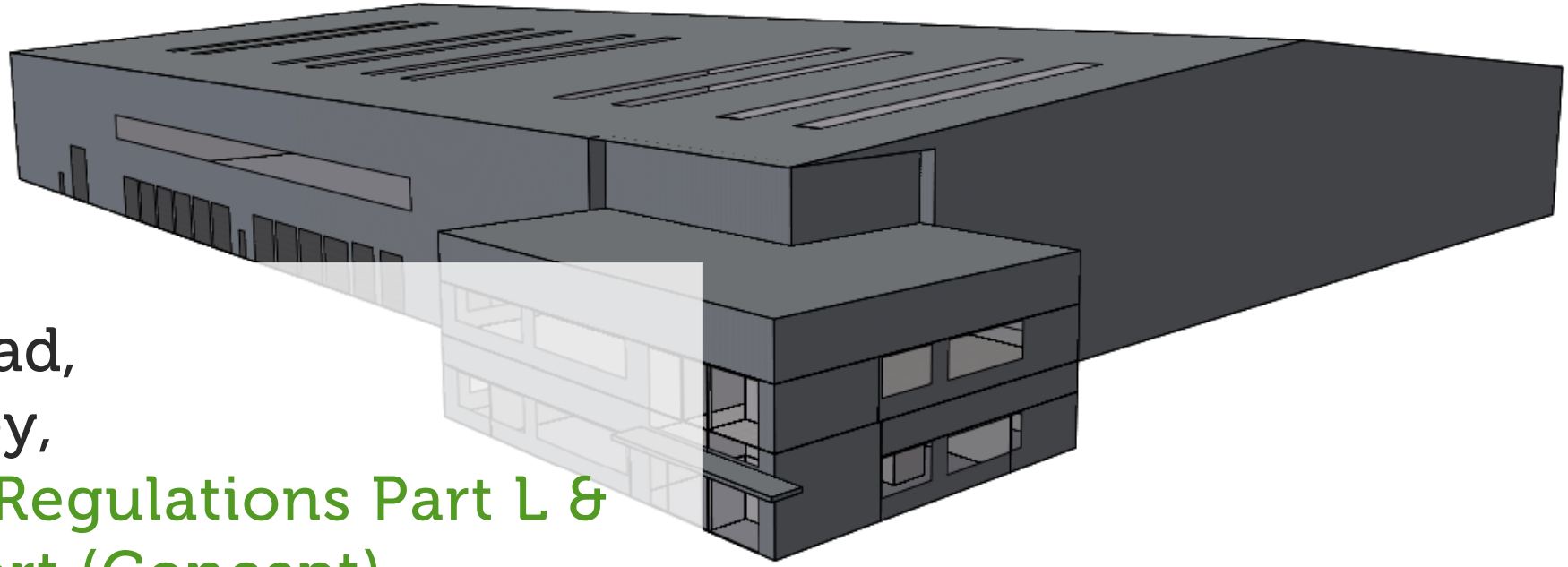
Anderson Green
building services consultants



Maple Road, Tankersley,
Building Regulations Part L & EPC Report (Concept)

Anderson Green Building Services Consultants in association with:

RULA DEVELOPMENTS

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RIBA STAGE	0	1	2	3	4	5	6	7

Maple Road, Tankersley

Building Regulations Part L & EPC Report (Concept)

SECTION			CHECKED		
REV	TITLE	BY	BY	DATE	SIGNED
P01	Part L & EPC	TB	NW	27.03.19	

REV	STAGE	DATE
P01	CONCEPT	27.03.19

1.0 Executive Summary

This report has been prepared on behalf of Rula Developments Ltd to demonstrate compliance with Part L2A 2013 for the new offices only at Maple Road, Tankersley, Yorkshire.

In order to demonstrate compliance with Part L2A 2013 of the building regulations, the Building Emission Rate (BER) is required to be less than or equivalent to the carbon emissions of the notional building set by the Target Emissions Rating (TER).

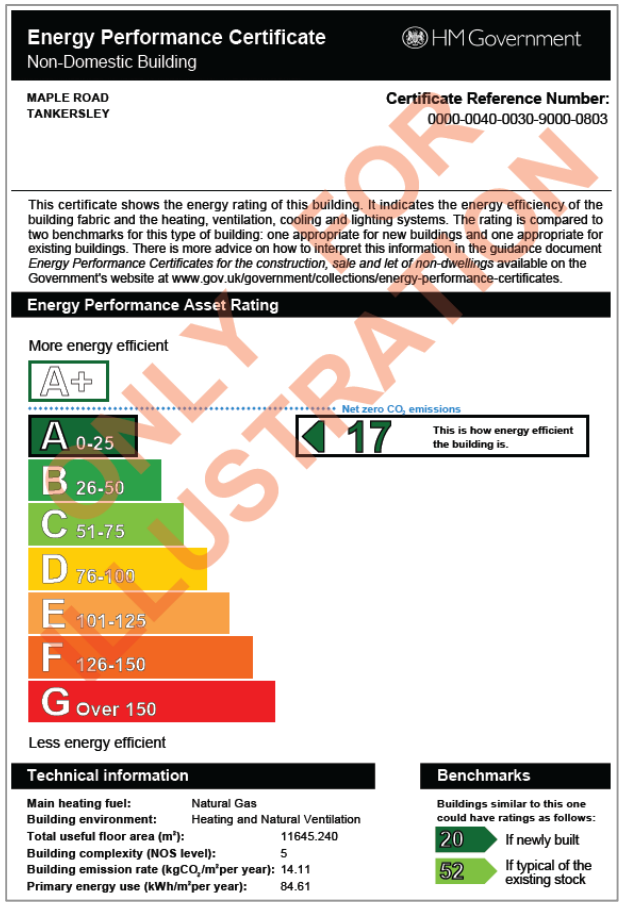
1.1 Building Regulations Part L2A 2013

This building is currently complying with Part L2A 2013 with an actual building emissions rate (BER) demonstrating a 15% reduction in carbon emissions in comparison with the notional building target emissions rate (TER).

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), $kgCO_2/m^2.annum$	14.1
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

The proposed design requires approximately PV 80m² (12kWP) generating 10,400kWh/pa.



1.2 Planning & BREEAM 2018

It is understood the scheme is required to achieve 15% carbon reduction and an 'A' rated EPC and BREEAM 2018 'Very Good' the current design achieves the following:

- ENE01 credits – 0.

2.0 Introduction

This report is based on the concept information produced by Anderson Green and aims to show compliance with criterions 1-3 of the Building Regulations L2A 2013.

This project comprises of a new two storey office adjacent to a workshop. The building includes canteen, driver's reception, open plan offices, showers lockers and welfare facilities.

This iteration includes the offices with an assumed fit-out to the workshop.

2.1 Software

This study has been undertaken using IES Virtual Environment v2018.1.1.0 and BRUKL compliance check v5.4.b.0 to create and assess the response of the building engineering services strategy.

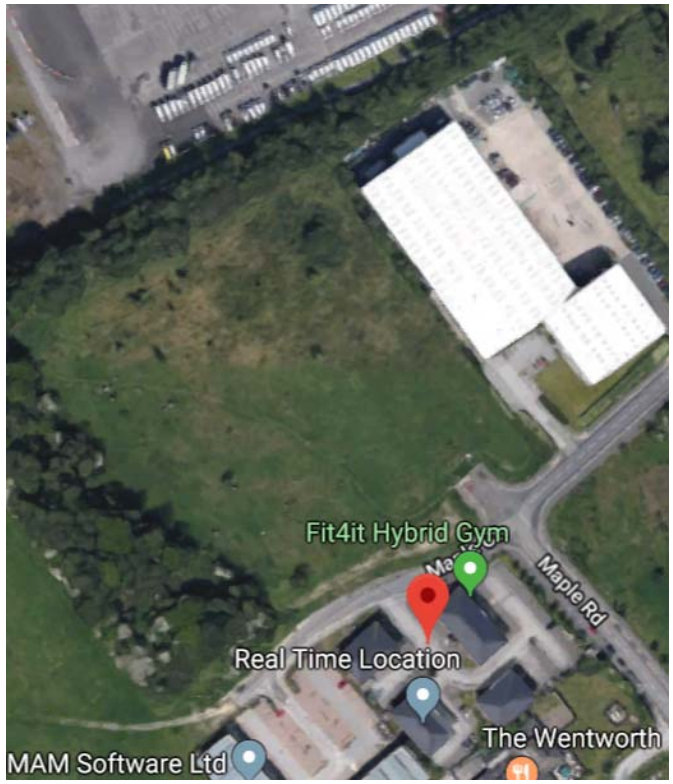
2.2 Building Type

The simulation uses an NCM activity database and covers the whole year for activities associated with a B1 Office building type.

2.3 Location

The weather file selected for the project is LEEDS in accordance with the SBEM weather locations application. The project building is deemed partially exposed.

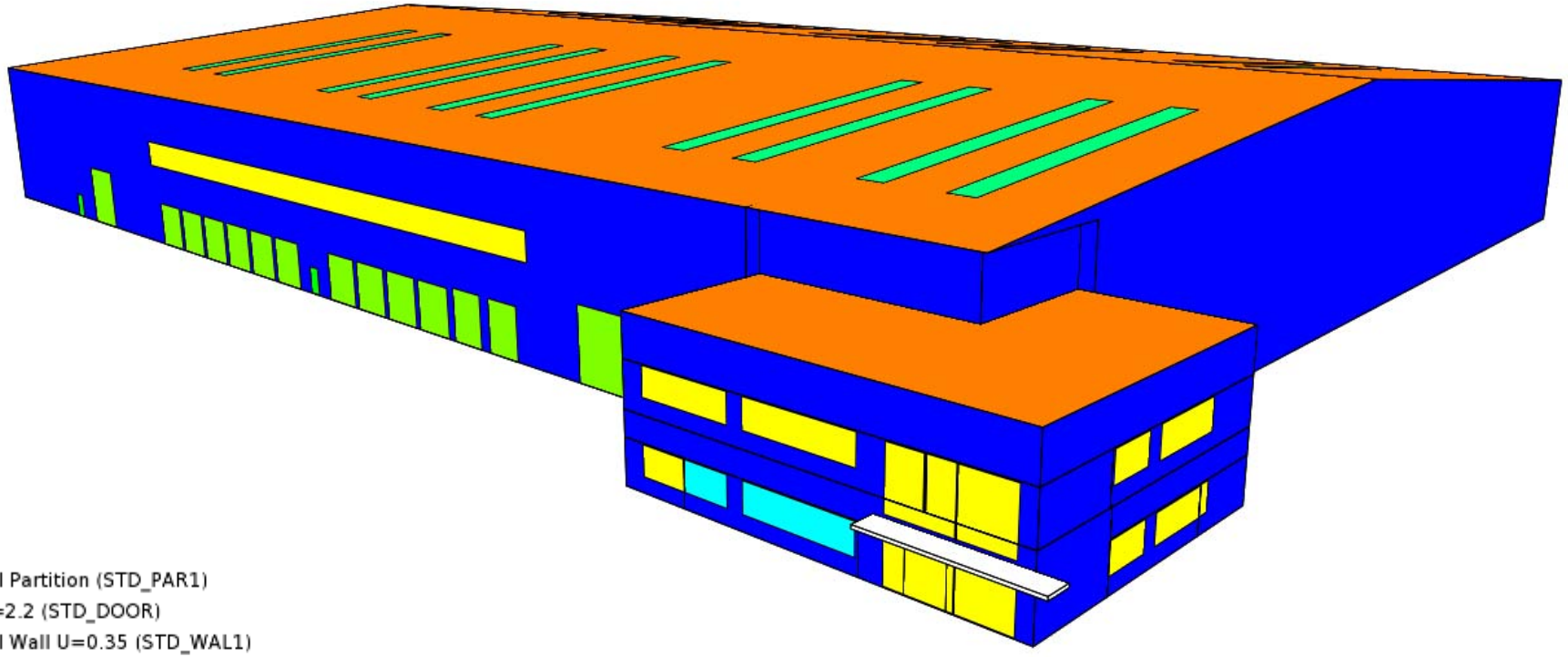
The building will be situated on the Maple Road.



2.4 Key Features

CONSTRUCTIONS	U-VALUES	HEATING		VENTILATION (SFP, HR, DCV)	
External wall cladding	0.35	VRF	400%	HRU	1.9,73%
External wall	0.35	ELEC PANEL HEATERS	100.0%	Zonal Extract	0.5
Internal walls	varies	WAREHOUSE	91% radiant	Local Extract	0.3
Ground floor	0.25	CONTROLS	Time Clock	CONTROLS	Timeclock
Roof	0.23	DHW		COOLING	
Roof lights	1.8 G=0.55, LT=0.6	Gas fired water heater	98%	VRF	3.5
Windows	2.2 G=0.5 LT=0.61	Storage (L)	368	ICT	N/A
Doors	2.2	Storage loss (kW/l/d)	0.013	MANAGEMENT FEATURES	
Curtain walling	2.2 G=0.5 LT=0.61	Circulation loss (W/m)	7	Power factor correction (PFC)	<0.9
Shading	Blinds	Pump power (kW)	0.05	Metering (HVAC & Lighting)	Yes
Air Permeability	2.5	DHW pipework (m)	150	BMS (out of range warnings)	No

3.0 Construction



Construction
- AG Internal Partition (STD_PAR1)
- AG Door U=2.2 (STD_DOOR)
- AG External Wall U=0.35 (STD_WAL1)
- AG External Window U=2.2; G=0.5; LT=0.61 (STD_EXTW)
- AG External Window U=2.2; G=0.5; LT=0.61 BLINDS (STD_EXT1)
- AG Ground Floor U=0.25 (NCM_CN09)
- AG Roof U=0.23 (STD_ROOF)
- AG Rooflight U=1.8 G=0.55 LT=0.6 (STD_RFLT)
- AG Seperating Internal Partition (STD_PART)
- AG Vehicle Access Door U=1.5 (NCM_CN20)
- AG ceiling (STD_CEI1)

All construction u-values and g-values are to be confirmed at design stage

4.0 Building Services

4.1 Management Features

This building has **no power factor correction** and it is assumed to be <0.90.

The building is has provisions for separate metering to Lighting & HVAC services **with no warnings for out of range values** at the central BMS.

4.2 Domestic Hot Water

Hot water is provided by the gas fired water heater:

- Assumed efficiency **98%**
- Storage **368L**.
- Storage losses of **0.0131kWh/L/24h**.
- Secondary hot water circulation **7W/m.**
- **150m**.
- Pump power of **0.05kW.**

4.3 Heating & Cooling

Heating to the building is provided via high efficiency VRF system and electric panel heaters.

- VRF assumed efficiency **4.0 SCOP/ 3.5 SEER.**
- Electric Panel heater **100%.**
- Gas fired radiant **91%** assumed.

4.3.1 HVAC Distribution

Heating and cooling is be delivered to the spaces as follows:

- VRF offices, canteen.
- Electric panel heaters all other spaces.
- Gas fired radiant multi-burner workshop.

4.4 Ventilation

4.4.1 General Supply and Extract

Mechanical ventilation is provided to the main occupied rooms via ceiling mounted heat recovery units

4.4.2 Extract only

Zonal extract is provided to WCs and showers.

4.4.3 General

Mechanical ventilation equipment air leakage is assumed to be a minimum of class L2. All ductwork is Class A and assumed to be untested.

SUPPLY & EXTRACT	SERVING	SFP (W/l/s)	HR %
AHU01	Canteen	1.9	73
AHU02	Lockers	1.9	73
AHU03	Open plan office	1.9	73
EXTRACT	**SERVING**	**SFP (W/l/s)**	**COMMENTS**
EX01	Various	0.5	

4.5 Lighting

4.5.1 Lighting Schedule

At this stage lighting is assumed to be LED with the minimum lighting luminaire efficacy of 100lm/cW.

4.5.2 Lighting Control Presence

- Absence detection to the offices and canteen.
- PIR presence detection on/off to workshop, stores, server, circulation areas and toilets.
- Manual control to the remaining rooms.

4.5.3 Lighting Control Daylight

- Daylight dimming is incorporated for 100% of each meeting room, office, workshop and stairs adjacent to external glazing.

4.6 Photo-Voltaic

At this stage the following PV system has been included to achieve the targets required for planning:

- PV array 12kWp.
- 80m².
- 16% PV efficiency.
- 98% inverter efficiency.
- 180° orientation.

5.0 Results

5.1 Criterion 1- TER/BER

This building PASSES the Part L2A 2013 compliance assessment confirming that the Building Emission Rate (BER) is less than or equivalent to the carbon emissions of the notional building set by the Target Emissions Rating (TER).

5.2 Criterion 2 – Design Limits Check

To achieve compliance with Criterion 2 of Part L2A, the performance of the building fabric u-values, air permeability and building services should be no worse than design limits.

This building PASSES the design limit check as detailed in the BRUKL certificate the building fabric and fixed building services achieve compliance with Part L as they are no worse than the design limits.

5.3 Criterion 3 – Solar Gain Check

To achieve compliance with Criterion 3 of Part L2A, the occupied spaces in the building should have appropriate passive control measures to limit the solar gains.

This building generally PASSES the solar gain check as detailed in the attached BRUKL certificate. The reception demonstrates further mitigation may be required. This assessment does not confirm whether the occupied spaces may overheat during peak summer time temperatures.

5.4 Part L Certificate (BRUKL)

BRUKL Output Document

HM Government

Compliance with England Building Regulations Part L 2013

Project name

MAPLE ROAD WHOLE BUILDING

As designed

Date: Wed Mar 27 11:59:51 2019

Administrative information

Building Details

Address: MAPLE ROAD, ,

Certification tool

Calculation engine: Apache

Calculation engine version: 7.0.10

Interface to calculation engine: IES Virtual Environment

Interface to calculation engine version: 7.0.10

BRUKL compliance check version: v5.4.b.0

Owner Details

Name:

Telephone number:

Address: , ,

Certifier details

Name: Toby Jonathon Eyres Britton

Telephone number: 01115 9754141

Address: Anderson Green Ltd, Unit C4 Park Lane Business Centre, Basford, Nottingham, NG6 0DW

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	14.1
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	0.35	0.35	00000012:Surf[2]
Floor	0.25	0.22	0.25	00000012:Surf[3]
Roof	0.25	0.23	0.23	ZZ000000:Surf[4]
Windows***, roof windows, and rooflights	2.2	2.04	2.2	00000012:Surf[0]
Personnel doors	2.2	2.2	2.2	WR000002:Surf[24]
Vehicle access & similar large doors	1.5	1.49	1.49	WR000002:Surf[25]
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^{2}K)]
$U_{a\text{-}Calc}$ = Calculated area-weighted average U-values [W/(m^{2}K)]
$U_{i\text{-}Calc}$ = Calculated maximum individual element U-values [W/(m^{2}K)]

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

Air Permeability	Worst acceptable standard	This building
m^3/(h.m^2) at 50 Pa	10	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	NO
Whole building electric power factor achieved by power factor correction	<0.9

1- 01 VRF

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	4	3.5	0	0	0.73
Standard value	2.5*	3.2	N/A	N/A	0.5
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO

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

2- 02 Panel Heater - Nat

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	1	-	0.2	0	-
Standard value	N/A	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO

3- 03 Panel Heater - E

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	1	-	0.2	0	-
Standard value	N/A	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO

4- 04 Panel Heater - SEHR

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	1	-	0.2	0	0.73
Standard value	N/A	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO

5- 05 Gas Fired Radiant

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	0.91	-	0.9	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

1- 00 DHW

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	0.98	0.013
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
canteen	-	1.9	0	-	-	-	-	-	-	-	N/A
cleaner	-	-	0.5	-	-	-	-	-	-	-	N/A
dwc	-	-	0.5	-	-	-	-	-	-	-	N/A
dwc	-	-	0.5	-	-	-	-	-	-	-	N/A
fwc	-	-	0.5	-	-	-	-	-	-	-	N/A
kitchenette	-	1.9	0	-	-	-	-	-	-	-	N/A
kitchenette	-	1.9	0	-	-	-	-	-	-	-	N/A
lockers	-	1.9	0	-	-	-	-	-	-	-	N/A
mwc	-	-	0.5	-	-	-	-	-	-	-	N/A
open plan office	-	1.9	0	-	-	-	-	-	-	-	N/A
wc	-	-	0.5	-	-	-	-	-	-	-	N/A
mwc	-	1.9	0	-	-	-	-	-	-	-	N/A
mwc showers	-	1.9	0	-	-	-	-	-	-	-	N/A
fwc showers	-	-	0.5	-	-	-	-	-	-	-	N/A
fwc	-	-	0.5	-	-	-	-	-	-	-	N/A

General lighting and display lighting

Zone name	Luminous efficacy [lm/W]			
	Luminaire	Lamp	Display lamp	General lighting [W]
Standard value	60	60	22	
canteen	-	100	-	173
circulation	-	100	-	73
cleaner	100	-	-	5
driver's office	100	-	-	157
driver's reception	100	-	-	111
dwc	-	100	-	23
dwc	-	100	-	23
fwc	-	100	-	54
kitchenette	100	-	-	59
kitchenette	100	-	-	43
lockers	100	-	-	216

General lighting and display lighting

Zone name	Luminous efficacy [lm/W]			
	Luminaire	Lamp	Display lamp	General lighting [W]
Standard value	60	60	22	
mwc	-	100	-	57
open plan office	100	-	-	1468
reception	-	100	100	94
stair	-	100	-	31
stair lobby	-	100	-	21
wc	-	100	-	25
wc lobby	-	100	-	14
stairs	-	100	-	39
mwc	-	100	-	168
mwc showers	-	100	-	21
fwc showers	-	100	-	10
fwc	-	100	-	52
warehouse	100	-	-	48326

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?
canteen	NO (-17.1%)	YES
driver's office	NO (-27.8%)	NO
driver's reception	NO (-55.3%)	NO
kitchenette	NO (-38%)	NO
kitchenette	NO (-56.6%)	NO
lockers	NO (-69.1%)	NO
open plan office	NO (-27.4%)	NO
reception	YES (+3.1%)	NO
warehouse	NO (-40.5%)	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?	NO
Is evidence of such assessment available as a separate submission?	NO
Are any such measures included in the proposed design?	NO

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Area [m²]	11645.2	11645.2
External area [m²]	29279.4	29279.4
Weather	LEE	LEE
Infiltration [m³/hm²@ 50Pa]	3	3
Average conductance [W/K]	10227.5	9281.35
Average U-value [W/m²K]	0.35	0.32
Alpha value* [%]	10.02	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	31.95	27.4
Cooling	0.24	0.14
Auxiliary	0.49	0.25
Lighting	8.82	15.83
Hot water	10.55	10.62
Equipment*	30.32	30.32
TOTAL**	**52.05**	**54.24**

* 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	0.88	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]	109.66	88.04
Primary energy* [kWh/m²]	84.61	95.71
Total emissions [kg/m²]	14.1	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] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
	Actual	115.4	69	8.6	7.7	8.9	3.73	2.49	4	3.5
	Notional	0	0	0	0	0	0	0	----	----
[ST] Other local room heater - unfanned, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity										
	Actual	174.5	0	48.5	0	0	1	0	1	0
	Notional	55.5	60.3	6	4.4	3.5	2.56	3.79	----	----
[ST] Other local room heater - unfanned, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity										
	Actual	157	0	54.5	0	16.6	0.8	0	1	0
	Notional	112.6	0	36.3	0	0	0.86	0	----	----
[ST] Other local room heater - unfanned, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity										
	Actual	144	0	40	0	12.6	1	0	1	0
	Notional	114.2	0	36.8	0	19	0.86	0	----	----
[ST] Multiburner radiant heaters, [HS] Radiant heater, [HFT] Natural Gas, [CFT] Electricity										
	Actual	105.9	0	32.3	0	0	0.91	0	0.91	0
	Notional	67.7	0	21.8	0	4.9	0.86	0	----	----
[ST] No Heating or Cooling										
	Actual	0	0	0	0	0	0	0	0	0
	Notional	86.9	0	28	0	0	0.86	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	0.35	00000012:Surf[2]
Floor	0.2	0.22	WR000002:Surf[22]
Roof	0.15	0.23	ZZ000000:Surf[4]
Windows, roof windows, and rooflights	1.5	2	WR000002:Surf[0]
Personnel doors	1.5	2.2	WR000002:Surf[24]
Vehicle access & similar large doors	1.5	1.49	WR000002:Surf[25]
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
$m^3/(h.m^2)$ at 50 Pa	5	3

5.5 Energy Performance Certificate (EPC)

Energy Performance Certificate

HM Government

Non-Domestic Building

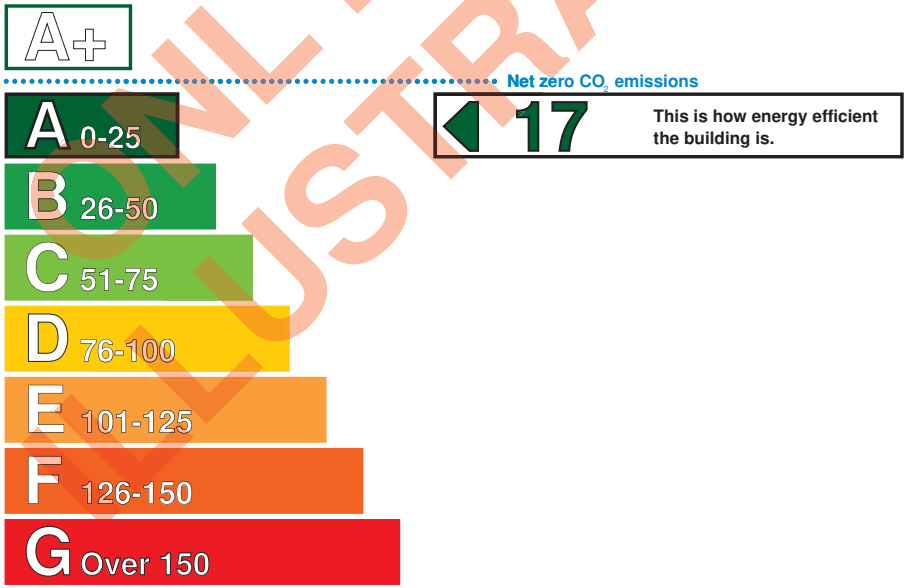
MAPLE ROAD
TANKERSLEY

Certificate Reference Number:
0000-0040-0030-9000-0803

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

Energy Performance Asset Rating

More energy efficient



Less energy efficient

Technical information

Main heating fuel:	Natural Gas
Building environment:	Heating and Natural Ventilation
Total useful floor area (m^2):	11645.240
Building complexity (NOS level):	5
Building emission rate ($kgCO_2/m^2$ per year):	14.11
Primary energy use (kWh/m^2 per year):	84.61

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 v7.0.10 using calculation engine ApacheSim v7.0.10
Property Reference:	000000000000
Assessor Name:	Toby Jonathon Eyres Britton
Assessor Number:	LCEA089923
Accreditation Scheme:	CIBSE Certification Limited
Employer/Trading Name:	Anderson Green Ltd
Employer/Trading Address:	Unit C4 Park Lane Business Centre, Basford, Nottingham NG6 0DW
Issue Date:	27 Mar 2019
Valid Until:	26 Mar 2029 (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: 0040-0000-0408-0900-0004

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 www.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. For further information about 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 and 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.

5.6 BREEAM Energy Compliance Checker

Country of the UK where the building is located	England	
Actual building energy demand	109.660	MJ/m^2 yr
Notional building energy demand	88.040	MJ/m^2 yr
Actual building primary energy consumption	84.610	kWh/m^2yr
Notional building primary energy consumption	95.710	kWh/m^2yr
Actual building CO_2-eq emissions (BER)	14.100	$KgCO_2$-eq $/m^2$ yr
Notional building CO_2-eq emissions (TER)	16.600	$KgCO_2$-eq $/m^2$ yr
Does this building contain areas that require a SAP assessment?		
What % of the building's total floor area (GIA) does it apply to?		
SAP Actual building energy demand		MJ/m^2 yr
SAP Notional building energy demand		MJ/m^2 yr
SAP Actual building primary energy consumption		kWh/m^2yr
SAP Notional building primary energy consumption		kWh/m^2yr
SAP Actual building CO_2-eq emissions (BER)		$KgCO_2$-eq $/m^2$ yr
SAP Notional building CO_2-eq emissions (TER)		$KgCO_2$-eq $/m^2$ yr

Building Score

Total BREEAM credits achieved	0
Heating and cooling demand energy performance ratio (EPRdem)	-0.266
Primary consumption energy performance ratio (EPRpc)	0.128
CO_2-eq energy performance ratio (EPRCO_2-eq)	0.111
Overall building energy performance ratio (EPRnc)	-0.027
% improvement over building regulations (CO2-eq)	15.06%

6.0 Appendices

A. Drawings

6157 - 074 Site Layout Plan	07/02/2019 07:49
6157 - 075 Proposed Building Plan	07/02/2019 07:49
6157 - 076 Proposed Office Plans	07/02/2019 07:49
6157 - 077 Proposed Office Plans CAT A	07/02/2019 07:49
6157 - 078 Proposed Elevations & Section	07/02/2019 07:49
6157 - 079 Proposed Elevations 2	07/02/2019 07:49

B. NCM Activity Images

NCM Activity

- NCM Ware: Changing facilities
- NCM Ware: Circulation area
- NCM Ware: Cupboard
- NCM Ware: Eating/drinking area
- NCM Ware: Office (Warehouse: Open)
- NCM Ware: Office (Warehouse: Tea)
- NCM Ware: Reception
- NCM Ware: Toilet

C. Model Images