

Project name

Aldi, Old Mill, Barnsley**As built****Date:** Thu Jan 28 08:37:20 2021

Administrative information

Building Details

Address: Aldi Foodstore Ltd, Old Mill Lane, BARNSELEY, S71 1LS

Certification tool

Calculation engine: SBEM**Calculation engine version:** v5.6.a.2**Interface to calculation engine:** Design Database**Interface to calculation engine version:** v26.06.00.12**BRUKL compliance check version:** v5.6.a.1

Owner Details

Name: Information not provided by the user**Telephone number:** Information not provided by the user**Address:** Information not provided by the user, Information not provided by the user, Information not provided by the user

Certifier details

Name: Mark Iles**Telephone number:** 0191 4956250**Address:** Metropolitan House, Longrigg Road, Swalwell, Gateshead, NE16 3ASCriterion 1: The calculated CO₂ emission rate for the building must not exceed the target

CO ₂ emission rate from the notional building, kgCO ₂ /m ² .annum	30.8
Target CO ₂ emission rate (TER), kgCO ₂ /m ² .annum	30.8
Building CO ₂ emission rate (BER), kgCO ₂ /m ² .annum	18.3
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 -Limit	U _a -Calc	U _i -Calc	Surface where the maximum value occurs*
Wall**	0.35	0.35	0.35	MEETING Wall 1
Floor	0.25	0.25	0.25	MEETING Exposed Floor 1
Roof	0.25	0.25	0.25	MEETING Exposed Roof 1
Windows***, roof windows, and rooflights	2.2	2.2	2.2	MEETING Window 1
Personnel doors	2.2	2.2	2.2	SALES Door 1 (Personnel Door)
Vehicle access & similar large doors	1.5	-	-	"No external vehicle access doors"
High usage entrance doors	3.5	-	-	"No external high usage entrance doors"
U _a -Limit = Limiting area-weighted average U-values [W/(m ² K)] U _a -Calc = Calculated area-weighted average U-values [W/(m ² K)] U _i -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	3.83

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- MEETING ROOM

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	4.04	-	-	-	-
Standard value	2.5*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps. For types <=12 kW output, refer to EN 14825 for limiting standards.					

2- OFFICE

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	4.4	3.65	-	-	-
Standard value	2.5*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps. For types <=12 kW output, refer to EN 14825 for limiting standards.					

3- SALES

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	4.04	-	-	-	-
Standard value	2.5*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps. For types <=12 kW output, refer to EN 14825 for limiting standards.					

4- STAFFROOM

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	4.04	-	-	-	-
Standard value	2.5*	N/A	N/A	N/A	N/A
Automatic monitoring & targeting with alarms for out-of-range values for this HVAC system					NO
* Standard shown is for all types >12 kW output, except absorption and gas engine heat pumps. For types <=12 kW output, refer to EN 14825 for limiting standards.					

1- Default DHW

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	1	0.003
Standard value	1	N/A

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
DISWC	-	-	0.4	-	-	-	-	-	-	-	N/A
FEMALEWC	-	-	0.4	-	-	-	-	-	-	-	N/A
MALEWC	-	-	0.4	-	-	-	-	-	-	-	N/A
MEETING	-	-	0.4	-	-	-	-	-	-	-	N/A
OFFICE	-	-	0.4	-	-	-	-	-	-	-	N/A
SALES	-	-	-	1.3	-	-	-	-	-	0.89	0.5
STAFF	-	-	0.4	-	-	-	-	-	-	-	N/A

General lighting and display lighting		Luminous efficacy [lm/W]			General lighting [W]
Zone name		Luminaire	Lamp	Display lamp	
	Standard value	60	60	22	
CLEANER		121	-	-	23
PLANT		100	-	-	132
CORR		-	121	121	280
DISWC		-	121	-	35
FEMALEWC		-	121	-	23
MALEWC		-	121	-	22
ENT		-	167	167	192
MEETING		121	-	-	249
OFFICE		121	-	-	239
SALES		-	146	146	8057
STAFF		121	-	-	240
WARE		100	-	-	1129

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?
CORR	N/A	N/A
ENT	NO (-12%)	NO
MEETING	NO (-96.3%)	NO
OFFICE	N/A	N/A
SALES	NO (-21.7%)	NO
STAFF	NO (-91.6%)	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?	NO
Are any such measures included in the proposed design?	YES

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Area [m ²]	1810	1810
External area [m ²]	5599.1	5599.1
Weather	LEE	LEE
Infiltration [m ³ /hm ² @ 50Pa]	4	3
Average conductance [W/K]	1980.12	1505.86
Average U-value [W/m ² K]	0.35	0.27
Alpha value* [%]	10.27	9.78

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

Building Use

% Area Building Type

100	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
	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	5.54	3.45
Cooling	0.05	0.12
Auxiliary	6.64	4.03
Lighting	21.3	52.26
Hot water	1.69	1.69
Equipment*	20.3	20.3
TOTAL **	35.22	61.55

* 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 & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	203.69	219.56
Primary energy* [kWh/m ²]	108.13	181.04
Total emissions [kg/m ²]	18.3	30.8

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

HVAC Systems Performance										
System Type	Heat dem MJ/m2	Cool dem MJ/m2	Heat con kWh/m2	Cool con kWh/m2	Aux con kWh/m2	Heat SSEFF	Cool SSEER	Heat gen SEFF	Cool gen SEER	
[ST] No Heating or Cooling										
	Actual	39.6	0.9	0	0	0	0	0	0	0
	Notional	35.6	0.4	0	0	0	0	----	----	----
[ST] No Heating or Cooling										
	Actual	268.2	63.8	0	0	0	0	0	0	0
	Notional	116.6	233.9	0	0	0	0	----	----	----
[ST] No Heating or Cooling										
	Actual	608.6	1.3	0	0	5.1	0	0	0	0
	Notional	416	7.9	0	0	7	0	0	----	----
[ST] No Heating or Cooling										
	Actual	740.5	211.4	0	0	0	0	0	0	0
	Notional	252.7	317.5	0	0	0	0	0	----	----
[ST] Central heating using water: floor heating, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
	Actual	585.9	49	45.1	0	10.8	3.61	0	4.04	0
	Notional	523.7	198.7	59.9	0	12.9	2.43	0	----	----
[ST] Split or multi-split system, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
	Actual	191	79.7	12.9	4.3	4.4	4.1	5.18	4.4	7.3
	Notional	99.7	135.5	11.4	10.5	5.9	2.43	3.6	----	----
[ST] Central heating using water: floor heating, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
	Actual	79.2	99.6	6.1	0	8.6	3.61	0	4.04	0
	Notional	24.8	177	2.8	0	4.9	2.43	0	----	----
[ST] Central heating using water: floor heating, [HS] Heat pump (electric): air source, [HFT] Electricity, [CFT] Electricity										
	Actual	269.6	62.7	20.8	0	8.8	3.61	0	4.04	0
	Notional	237	115.6	27.1	0	9.7	2.43	0	----	----
[ST] No Heating or Cooling										
	Actual	185.5	23.5	0	0	0	0	0	0	0
	Notional	212.3	11	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-Typ}	U _{i-Min}	Surface where the minimum value occurs*
Wall	0.23	0.35	MEETING Wall 1
Floor	0.2	0.25	MEETING Exposed Floor 1
Roof	0.15	0.25	MEETING Exposed Roof 1
Windows, roof windows, and rooflights	1.5	2.2	MEETING Window 1
Personnel doors	1.5	2.2	SALES Door 1 (Personnel Door)
Vehicle access & similar large doors	1.5	-	"No external vehicle access doors"
High usage entrance doors	1.5	-	"No external high usage entrance doors"
U _{i-Typ} = Typical individual element U-values [W/(m²K)]		U _{i-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	3.83