Energy Performance Certificate

Non-Domestic Building

HM Government

South Tyneside and Sunderland NHS Foundation Trust – Integrated Diagnostic Centre
South Shields
NE34 0PL

Certificate Reference Number:
4240-7522-9583-7063-7296

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

A+

Net zero CO_2 emissions

A 0-25

B 26-50

C 51-75

D 76-100

E 101-125

F 126-150

G Over 150

32 This is how energy efficient the building is.

Less energy efficient

Technical information

Main heating fuel:	Grid Supplied Electricity
Building environment:	Air Conditioning
Total useful floor area (m^2):	937.1
Building complexity:	Level 4
Building emission rate ($kgCO_2/m^2$ per year):	66.13
Primary energy use (kWh/m^2 per year):	391.17

Benchmarks

Buildings similar to this one could have ratings as follows:

33 If newly built

95 If typical of the existing stock

ONLY FOR ILLUSTRATION

Administrative information

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

Assessment Software:	Virtual Environment v7.0.13 using calculation engine SBEM v5.6.b.0
Property Reference:	UPRN-000000000000
Assessor Name:	Darren Baker
Assessor Number:	LCEA125299
Accreditation Scheme:	CIBSE Certification Limited
Assessor Qualifications:	NOS5
Employer/Trading Name:	Trading Name
Employer/Trading Address:	Trading Address
Issue Date:	15 Jul 2021
Valid Until:	14 Jul 2031 (unless superseded by a later certificate)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: 3550-0136-5373-5716-2206

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.

FOR ILLUSTRATION ONLY

BRUKL Output Document

HM Government

Compliance with England Building Regulations Part L 2013

Project name

South Tyneside and Sunderland NHS Foundation Trust – Integrated Diagnostic

As designed

Date: Thu Jul 15 10:53:48 2021

Administrative information

Building Details

Address: South Tyneside and Sunderland NHS Foundation Trust – Integrated Diagnostic Centre, South Shields, NE34 0PL

Certification tool

Calculation engine: SBEM

Calculation engine version: v5.6.b.0

Interface to calculation engine: Virtual Environment

Interface to calculation engine version: v7.0.13

BRUKL compliance check version: v5.6.b.0

Certifier details

Name: Darren Baker

Telephone number: 0845 094 1593

Address: Melin Consultants, The Beacon, Llanelli, SA14 8LQ

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

CO_2 emission rate from the notional building, $kgCO_2/m^2.annum$	66.4
Target CO_2 emission rate (TER), $kgCO_2/m^2.annum$	66.4
Building CO_2 emission rate (BER), $kgCO_2/m^2.annum$	66.1
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	0.25	0.25	"RM000001_W2"
Floor	0.25	0.14	0.14	"RM000001_F"
Roof	0.25	0.09	0.09	"RM000001_C"
Windows***, roof windows, and rooflights	2.2	1.5	1.5	"RM00001F_W2_O0"
Personnel doors	2.2	1.8	1.8	"RM00000C_W3_O0"
Vehicle access & similar large doors	1.5	-	-	"No external vehicle access doors"
High usage entrance doors	3.5	-	-	"No external high usage entrance doors"

$U_{a\text{-}Limit}$ = Limiting area-weighted average U-values [W/(m²K)]

$U_{a\text{-}Calc}$ = Calculated area-weighted average U-values [W/(m²K)]

$U_{i\text{-}Calc}$ = Calculated maximum individual element U-values [W/(m²K)]

* 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	5

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- Air Conditioning

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	4	4	-	-	-
Standard value	2.5*	2.6	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- SYST0000-DHW

	Water heating efficiency	Storage loss factor [kWh/litre per day]
This building	1	0.01
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
Cleaners	-	-	-	1	-	-	-	-	-	0.7	0.5
Sub Wait	-	-	-	1	-	-	-	-	-	0.7	0.5
Clean Utility	-	-	-	1	-	-	-	-	-	0.7	0.5
Trolley Wait	-	-	-	1	-	-	-	-	-	0.7	0.5
Changing Room	-	-	-	1	-	-	-	-	-	0.7	0.5
Changing Room	-	-	-	1	-	-	-	-	-	0.7	0.5
Changing Room	-	-	-	1	-	-	-	-	-	0.7	0.5
Changing Room	-	-	-	1	-	-	-	-	-	0.7	0.5
Prep Room	-	-	-	1	-	-	-	-	-	0.7	0.5
Prep Room	-	-	-	1	-	-	-	-	-	0.7	0.5
Corridor	-	-	-	1	-	-	-	-	-	0.7	0.5
Linen	-	-	-	1	-	-	-	-	-	0.7	0.5
WC	-	-	-	1	-	-	-	-	-	0.7	0.5
WC	-	-	-	1	-	-	-	-	-	0.7	0.5
CT Scanning Room	-	-	-	1	-	-	-	-	-	0.7	0.5

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
CT Scanning Room	-	-	-	1	-	-	-	-	-	0.7	0.5
Control Room	-	-	-	1	-	-	-	-	-	0.7	0.5
Interview Room	-	-	-	1	-	-	-	-	-	0.7	0.5
WC	-	-	-	1	-	-	-	-	-	0.7	0.5
Uptake 1	-	-	-	1	-	-	-	-	-	0.7	0.5
Uptake 2	-	-	-	1	-	-	-	-	-	0.7	0.5
Uptake 3	-	-	-	1	-	-	-	-	-	0.7	0.5
Lab	-	-	-	1	-	-	-	-	-	0.7	0.5
Store	-	-	-	1	-	-	-	-	-	0.7	0.5
Corridor	-	-	-	1	-	-	-	-	-	0.7	0.5
CT Scanning Room	-	-	-	1	-	-	-	-	-	0.7	0.5
Control Room	-	-	-	1	-	-	-	-	-	0.7	0.5
Waiting Room	-	-	-	1	-	-	-	-	-	0.7	0.5
Interview Room	-	-	-	1	-	-	-	-	-	0.7	0.5
Managers Office	-	-	-	1	-	-	-	-	-	0.7	0.5
Corridor	-	-	-	1	-	-	-	-	-	0.7	0.5
Meeting Room	-	-	-	1	-	-	-	-	-	0.7	0.5
Technical Room	-	-	-	1	-	-	-	-	-	0.7	0.5
Store	-	-	-	1	-	-	-	-	-	0.7	0.5
Clean Utility	-	-	-	1	-	-	-	-	-	0.7	0.5
Prep Room	-	-	-	1	-	-	-	-	-	0.7	0.5
WC	-	-	-	1	-	-	-	-	-	0.7	0.5
Technical Room	-	-	-	1	-	-	-	-	-	0.7	0.5
Staff Room	-	-	-	1	-	-	-	-	-	0.7	0.5
Locker Room	-	-	-	1	-	-	-	-	-	0.7	0.5
Store	-	-	-	1	-	-	-	-	-	0.7	0.5
Staff Shower	-	-	-	1	-	-	-	-	-	0.7	0.5
WC	-	-	-	1	-	-	-	-	-	0.7	0.5
Reporting Station	-	-	-	1	-	-	-	-	-	0.7	0.5
AML IT	-	-	-	1	-	-	-	-	-	0.7	0.5
Dirty Utility	-	-	-	1	-	-	-	-	-	0.7	0.5
Staff Lockers	-	-	-	1	-	-	-	-	-	0.7	0.5
Store	-	-	-	1	-	-	-	-	-	0.7	0.5
WC	-	-	-	1	-	-	-	-	-	0.7	0.5
Staff Shower	-	-	-	1	-	-	-	-	-	0.7	0.5
Prep Room	-	-	-	1	-	-	-	-	-	0.7	0.5
Changing Room	-	-	-	1	-	-	-	-	-	0.7	0.5
Control Room	-	-	-	1	-	-	-	-	-	0.7	0.5
Booking Office	-	-	-	1	-	-	-	-	-	0.7	0.5
Corridor	-	-	-	1	-	-	-	-	-	0.7	0.5
Changing Room	-	-	-	1	-	-	-	-	-	0.7	0.5
Changing Room	-	-	-	1	-	-	-	-	-	0.7	0.5
Changing Room	-	-	-	1	-	-	-	-	-	0.7	0.5

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
Store	-	-	-	1	-	-	-	-	-	0.7	0.5
MRI Scanning Room	-	-	-	1	-	-	-	-	-	0.7	0.5
MRI Scanning Room	-	-	-	1	-	-	-	-	-	0.7	0.5
Reception	-	-	-	1	-	-	-	-	-	0.7	0.5
Corridor	-	-	-	1	-	-	-	-	-	0.7	0.5
Corridor	-	-	-	1	-	-	-	-	-	0.7	0.5
WC	-	-	-	1	-	-	-	-	-	0.7	0.5
WC	-	-	-	1	-	-	-	-	-	0.7	0.5
Store	-	-	-	1	-	-	-	-	-	0.7	0.5
AML IT	-	-	-	1	-	-	-	-	-	0.7	0.5

General lighting and display lighting	Luminous efficacy [lm/W]			
Zone name	Luminaire	Lamp	Display lamp	General lighting [W]
Standard value	60	60	22	
Cleaners	95	-	-	26
Sub Wait	-	95	-	20
Clean Utility	95	-	-	30
Trolley Wait	95	-	-	30
Changing Room	95	-	-	14
Changing Room	95	-	-	14
Changing Room	95	-	-	14
Changing Room	95	-	-	14
Prep Room	95	-	-	33
Prep Room	95	-	-	35
Corridor	-	95	-	106
Linen	95	-	-	39
WC	-	95	-	41
WC	-	95	-	47
CT Scanning Room	-	95	-	569
CT Scanning Room	-	95	-	511
Control Room	95	-	-	53
Interview Room	95	-	-	71
WC	-	95	-	38
Uptake 1	95	-	-	30
Uptake 2	95	-	-	31
Uptake 3	95	-	-	32
Lab	95	-	-	118
Store	95	-	-	26
Corridor	-	95	-	96
CT Scanning Room	-	95	-	738
Control Room	95	-	-	52
Waiting Room	-	95	100	267
Interview Room	95	-	-	93

General lighting and display lighting	Luminous efficacy [lm/W]			
Zone name	**Luminaire**	**Lamp**	**Display lamp**	**General lighting [W]**
Standard value	60	60	22	
Managers Office	95	-	-	102
Corridor	-	95	-	27
Meeting Room	95	-	-	178
Technical Room	95	-	-	83
Store	95	-	-	46
Clean Utility	95	-	-	33
Prep Room	95	-	-	38
WC	-	95	-	43
Technical Room	95	-	-	138
Staff Room	-	95	-	64
Locker Room	95	-	-	49
Store	95	-	-	26
Staff Shower	-	95	-	18
WC	-	95	-	36
Reporting Station	95	-	-	112
AML IT	95	-	-	91
Dirty Utility	95	-	-	39
Staff Lockers	95	-	-	49
Store	95	-	-	23
WC	-	95	-	37
Staff Shower	-	95	-	19
Prep Room	95	-	-	32
Changing Room	95	-	-	16
Control Room	95	-	-	65
Booking Office	95	-	-	167
Corridor	-	95	-	149
Changing Room	95	-	-	23
Changing Room	95	-	-	19
Changing Room	95	-	-	18
Store	95	-	-	18
MRI Scanning Room	-	95	-	742
MRI Scanning Room	-	95	-	741
Reception	-	95	100	408
Corridor	-	95	-	187
Corridor	-	95	-	21
WC	-	95	-	34
WC	-	95	-	36
Store	95	-	-	26
AML IT	95	-	-	61

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?
Cleaners	N/A	N/A
Sub Wait	N/A	N/A
Clean Utility	N/A	N/A
Trolley Wait	N/A	N/A
Changing Room	N/A	N/A
Changing Room	N/A	N/A
Changing Room	N/A	N/A
Changing Room	N/A	N/A
Prep Room	N/A	N/A
Prep Room	N/A	N/A
Corridor	N/A	N/A
Linen	N/A	N/A
WC	N/A	N/A
WC	N/A	N/A
CT Scanning Room	N/A	N/A
CT Scanning Room	N/A	N/A
Control Room	N/A	N/A
Interview Room	N/A	N/A
WC	N/A	N/A
Uptake 1	N/A	N/A
Uptake 2	N/A	N/A
Uptake 3	N/A	N/A
Lab	N/A	N/A
Store	N/A	N/A
Corridor	N/A	N/A
CT Scanning Room	N/A	N/A
Control Room	N/A	N/A
Waiting Room	NO (-11.6%)	NO
Interview Room	NO (-80.1%)	NO
Managers Office	NO (-79.4%)	NO
Corridor	N/A	N/A
Meeting Room	NO (-83.3%)	NO
Technical Room	N/A	N/A
Store	N/A	N/A
Clean Utility	N/A	N/A
Prep Room	N/A	N/A
WC	N/A	N/A
Technical Room	N/A	N/A
Staff Room	N/A	N/A
Locker Room	N/A	N/A
Store	N/A	N/A
Staff Shower	N/A	N/A
WC	N/A	N/A
Reporting Station	N/A	N/A

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
AML IT	N/A	N/A
Dirty Utility	N/A	N/A
Staff Lockers	N/A	N/A
Store	N/A	N/A
WC	N/A	N/A
Staff Shower	N/A	N/A
Prep Room	N/A	N/A
Changing Room	N/A	N/A
Control Room	N/A	N/A
Booking Office	N/A	N/A
Corridor	N/A	N/A
Changing Room	N/A	N/A
Changing Room	N/A	N/A
Changing Room	N/A	N/A
Store	N/A	N/A
MRI Scanning Room	N/A	N/A
MRI Scanning Room	N/A	N/A
Reception	NO (-34.8%)	NO
Corridor	NO (-24%)	NO
Corridor	N/A	N/A
WC	N/A	N/A
WC	N/A	N/A
Store	N/A	N/A
AML IT	N/A	N/A

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?	NO

Technical Data Sheet (Actual vs. Notional Building)

Building Global Parameters

	Actual	Notional
Area [m^2]	937.1	937.1
External area [m^2]	2401.2	2401.2
Weather	NEW	NEW
Infiltration [m^3/hm^2@ 50Pa]	5	3
Average conductance [W/K]	417.59	659.8
Average U-value [W/m^2K]	0.17	0.27
Alpha value* [%]	6.59	9.45

* 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
	B8 Storage or Distribution
	C1 Hotels
100	**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/m^2]

	Actual	Notional
Heating	3.53	5.72
Cooling	65.48	47.13
Auxiliary	17.09	14.65
Lighting	32.57	58.24
Hot water	8.75	8.84
Equipment*	221.64	221.64
TOTAL**	**127.42**	**134.57**

* 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/m^2]

	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/m^2]	716.85	660.81
Primary energy* [kWh/m^2]	391.17	386.08
Total emissions [kg/m^2]	66.1	66.4

* 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	47.4	669.5	3.5	65.5	17.1	3.73	2.84	4	4
	Notional	50	610.8	5.7	47.1	14.6	2.43	3.6	----	----

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	0.25	"RM000001_W2"
Floor	0.2	0.14	"RM000001_F"
Roof	0.15	0.09	"RM000001_C"
Windows, roof windows, and rooflights	1.5	1.5	"RM00001F_W2_O0"
Personnel doors	1.5	1.8	"RM00000C_W3_O0"
Vehicle access & similar large doors	1.5	-	"No external vehicle access doors"
High usage entrance doors	1.5	-	"No external high usage entrance doors"

$U_{i\text{-}Typ}$ = 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	5