



Method Consulting

Intelligent engineering,
sustainable buildings

Steining Grammar School

Energy Statement Report

BAM Construction

February 2026

Document History

This document has been revised and issued as below:

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P01	10/02/26	Energy Statement Report	KPM	BXP

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Executive Summary

Method Consulting LLP has been appointed to produce an Energy Statement for the Planning submission for the proposed development at Steyning Grammar School. This assessment considers the application of the Energy Hierarchy, Net Zero Carbon aspiration, and Concept Operational Energy, and has been conducted on behalf of the client, BAM Construction.

It has been demonstrated how the carbon emissions from energy use in the proposed new development will be reduced through a combination of energy efficiency measures and renewable energy sources.

In line with the DfE Generic Design Brief Technical Annex 2H: Energy for the proposed buildings guidance, the proposed development has been designed in lined with the energy efficiency hierarchy of 'Be Lean', 'Be Clean' and 'Be Green' to reduce energy consumption and operational cost of the development.

A fabric first approach has been adopted for minimising the need for heating, ventilation, cooling and artificial lighting, utilising high quality constructions, solar control, and site optimisation. Natural ventilation has been prioritised, with cross and stack ventilation utilised in all teaching spaces, reducing reliance on mechanical means. Remaining ventilation requirements are met through a combination of hybrid and mechanical systems, optimising heat recovery to reduce space heating energy use. Direct electric heating is utilised in corridors and naturally ventilated staff areas. Ground source heat pumps are utilised to provide space heating via warm air heating in spaces with mechanical or hybrid ventilation. Highly efficient lighting and intelligent controls have also been incorporated, further reducing anticipated energy use of the development, in line with Technical Annex 2H.

A PV array (approximately 1,064kWp) has been incorporated into the design, achieving an 119% reduction in regulated and unregulated CO₂ emissions, based on Part L modelling. It is worth noting these reductions differ when considering the concept operational energy results, as discussed in more detail within the Zero Carbon Strategy Report and Concept Operational Energy Report. As well as this, the development currently meets the requirements of Part L2 of building regulations (2021). Further detail on the concept operational energy modelling and zero carbon strategy can be found in the relevant reports.

Contents

1	Introduction	1
1.1	Site location.....	1
2	Relevant Planning Policy	2
2.1	National Planning Policy Framework	2
2.2	Local Planning Policy – Horsham District Council	3
2.3	Department for Education – Generic Design Brief	4
3	Energy strategy.....	5
3.1	Dynamic Simulation Model.....	5
3.2	Be Lean: Demand Reduction.....	7
3.3	Be Clean: Heating Infrastructure.....	10
3.4	Be Green: Renewable Energy.....	10
3.5	Energy & carbon results	11
3.6	Be Seen: Performance in use	13
4	Conclusion	14
5	Appendices	15
5.1	Appendix A – Building services	15
5.2	Appendix B – BRUKL output for the proposed development	18

1 Introduction

This Energy Strategy Report has been prepared by Method Consulting LLP to support the Planning submission by BAM Construction for the proposed development at Steyping Grammar School.

The development comprises the construction of 4No. new buildings at Steyping Grammar School, Shooting Field, Steyping BN44 3RX, consisting of:

- Building 13 – New Teaching Block
- Building 14 – New Teaching Block
- Building 15 – New Teaching Block
- Building 16 – Sports Block

The proposed new educations buildings are to be located on the site of several of existing buildings – some which are to be demolished and some which are to be retained.

The report demonstrates that the proposals meet the requirements of the DfE Generic Design Brief Technical Annex 2H: Energy for the proposed buildings.

This report outlines the sustainable features to be incorporated through both good building design and construction methods as well as the implementation of low carbon technologies to provide an energy efficient development. It presents the resulting energy demand and CO₂ emissions for the development for each stage of the energy hierarchy and quantifies the carbon savings achieved through implementation of renewable technologies. It should be noted that any community use of the school is not considered within this assessment.

1.1 Site location

The Site is located on Shooting Field Road in Steyping. The proposed Site Plan is shown in Figure 1.1.1. The blocks which are being assessed are Blocks 13, 14, 15, and 16.

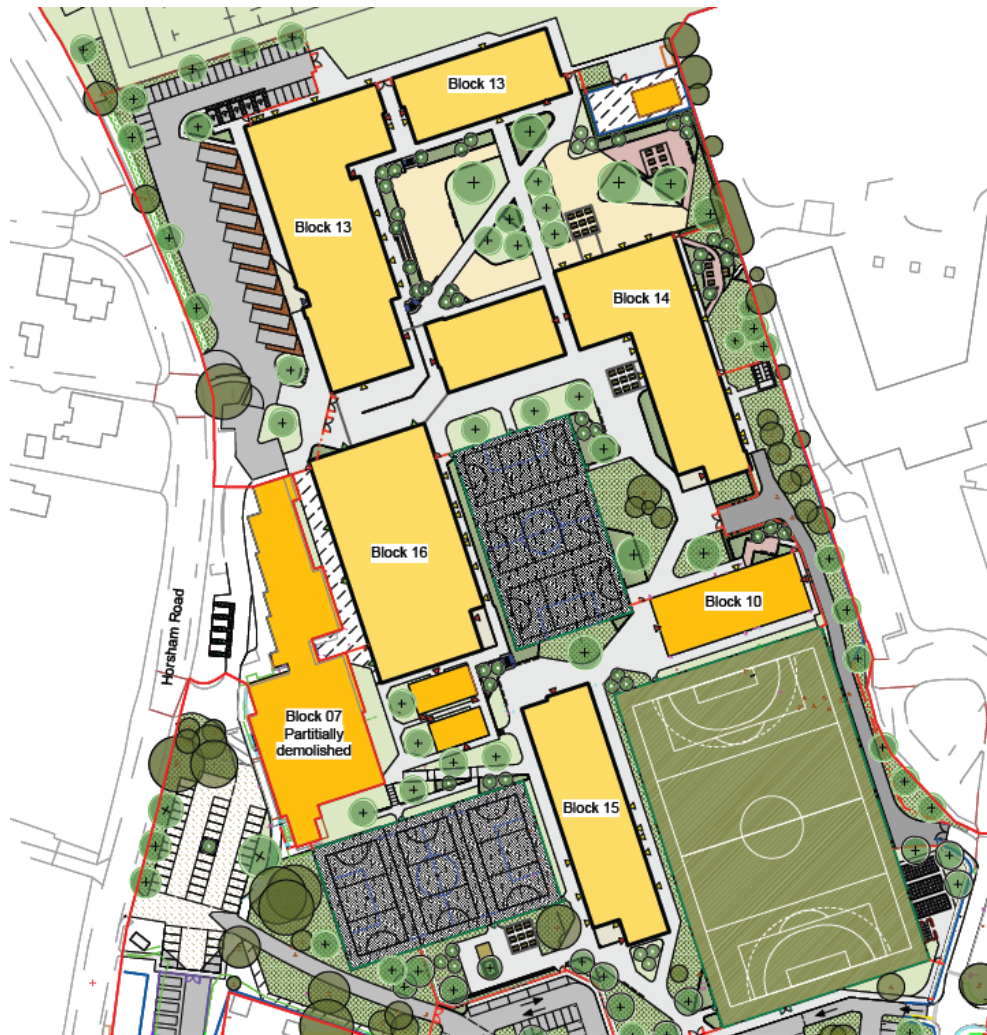


Figure 1.1.1 Proposed site plan (SRP1121-WWA-ZZ-ZZ-D-L-1970)

2 Relevant Planning Policy

2.1 National Planning Policy Framework

The National Planning Policy Framework (NPPF) was published on 27 March 2012 with updates in June 2019 and more recently, July 2024. This document sets the overarching policies for development in England and states that:

‘So that sustainable development is pursued in a positive way, at the heart of the Framework is a presumption in favour of sustainable development.’ (NPPF, 2024). Paragraph 11 states, ‘... promote a sustainable pattern of development that seeks to: meet the development needs of their area; align growth and infrastructure;

improve the environment; mitigate climate change (including by making effective use of land in urban areas) and adapt to its effects’.

The NPPF also references the 17 UN Sustainable Development Goals, which are illustrated below:



Key points within the NPPF of relevance and which have therefore been considered as part of this proposal are:

- Promoting sustainable transport;
- Making effective use of land;
- Achieving well-designed places;
- Meeting the challenge of climate change and flooding;
- Conserving and enhancing the natural environment.

2.2 Local Planning Policy – Horsham District Council

The planning authority is the Horsham District Council and the policies relevant to energy use and carbon emissions are contained in:

- Steying Neighbourhood Plan (2019-2031)

2.2.1 Policy SNDP2.2: Responsible environmental design

As appropriate to their scale and nature, and taking account of the findings of the Steying Character Assessment 2019, development proposals should:

f) Design buildings so that they are energy efficient, ensuring they are sited and orientated to optimise passive solar gain, use high quality and thermally efficient building materials.

g) Be energy self-sufficient, utilising renewable energy sources wherever possible.

2.3 Department for Education – Generic Design Brief

2.3.1 *Technical Annex 2H: Energy*

Technical Annex 2H sets out the minimum energy performance standards for school and college buildings. It covers energy-efficient design, net zero carbon targets, energy modelling, in-use energy monitoring, refurbishment of existing buildings and compliance demonstration requirements for new and refurbished buildings.

New schools are to be designed to meet the relevant regulated and unregulated energy standards outlined in the DfE documentation, as well as local planning policies. These standards include meeting Energy Use Intensity (EUI) targets through implementation of design in line with the energy efficiency hierarchy:

- **Be Lean:** Use less energy through energy-efficient building fabric and systems;
- **Be Clean:** Provide heating and cooling efficiently with a preference of communal heating and cooling networks;
- **Be Green:** Incorporate suitable renewable energy technologies as appropriate to the site, and;
- **Be Seen:** Provide measures to allow monitoring and reporting of energy post-occupation.

A detailed description of how these principles have been applied to the project can be found in the following sections of this report.

3 Energy strategy

3.1 Dynamic Simulation Model

Dynamic Part L simulations have been carried out using the approved software IES Virtual Environment version 2024.1.0.0. The analysis was conducted by a qualified and competent person.

The following Revit models provided by KSS Architects (21/11/2025) were used to set up the model in the Virtual Environment:

- SRP1121-KSS-13-ZZ-M-A-0001.rvt
- SRP1121-KSS-14-ZZ-M-A-0001.rvt
- SRP1121-KSS-15-ZZ-M-A-0001.rvt
- SRP1121-KSS-16-ZZ-M-A-0001.rvt

Revision 2 of the above Revit models was used to construct the general building geometry including layouts, floor heights, and room names. The elevations of the buildings were then updated to represent the Revision 7 Revit models following development between the architect and daylight consultants.

Images of the constructed model are shown in Figure 3.1.1 to Figure 3.1.4.

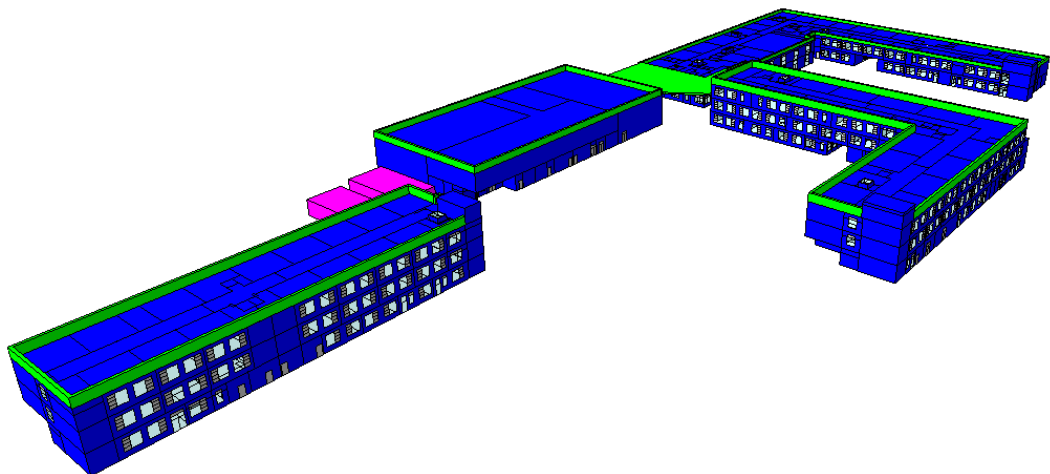


Figure 3.1.1: IES Virtual Environment model of Blocks 13-16, Steyping Grammar School – view from southeast

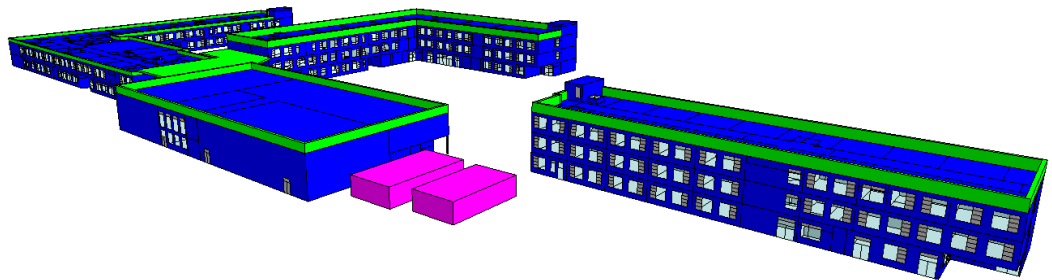


Figure 3.1.2: IES Virtual Environment model of Blocks 13-16, Steyping Grammar School – view from southwest

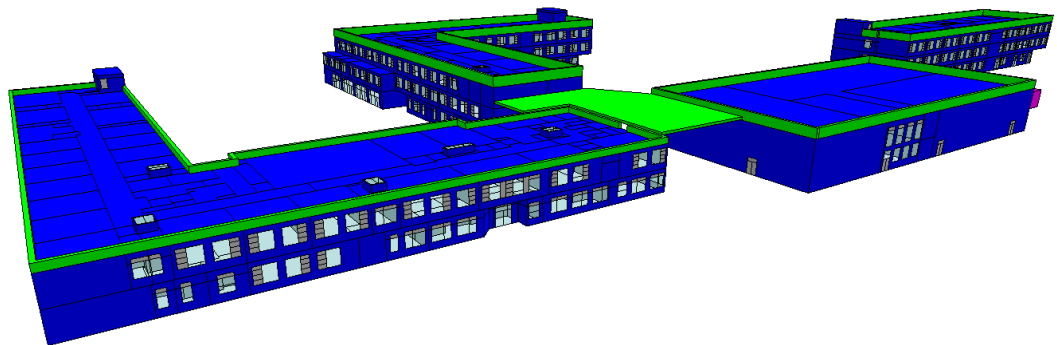


Figure 3.1.3: IES Virtual Environment model of Blocks 13-16, Steyping Grammar School – view from northwest

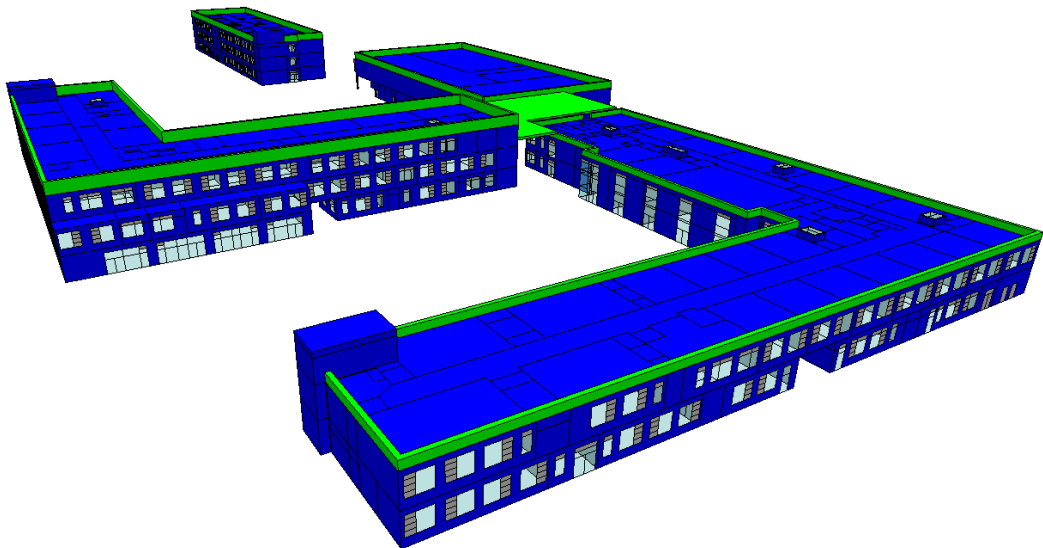


Figure 3.1.4: IES Virtual Environment model of Blocks 13-16, Steyping Grammar School – view from northeast

3.2 Be Lean: Demand Reduction

As stated in Technical Annex 2H, lowering or eliminating the energy demand of new buildings will reduce the size and capital cost of plant, equipment and help to reduce the cumulative stress applied to the national grid infrastructure.

A fabric-first approach is taken in the design of the proposed development, incorporating a number of passive measures to reduce energy demand across the development. Highly efficient systems were then selected, working with the natural environment and reducing reliance on mechanical means to achieve lighting and thermal comfort targets.

3.2.1 Fabric performance

The target U-values for the project are listed in Table 3.2.1.1.

High performance fabric has been used throughout the development to reduce the space heating load and need for comfort cooling in summer conditions. The targeted U-values represent an overall improvement on the notional values given in Part L 2021, which is an indication of a fabric-first energy approach.

In addition, an air permeability of 3 m³/h/m² is targeted in line with the notional standards.

As well as high quality building fabric, solar control strategies have been considered with a glazing g-value of 0.4 for all glazing, with the exception of the following spaces which were identified as being at risk of receiving excessive solar gains and will be provided with a glazing g-value of 0.3:

- Block 13: 00 Assembly Hall 2001
- Block 13: 00 Drama studio 1136
- Block 13: 00 Faith space (Chapel) 3005

Element	Limiting 2021 U-value (W/m ² /K)	Notional 2021 U-value (W/m ² /K)	Target U-value (W/m ² /K)
Ground floor	0.18	0.15	0.12
External walls	0.26	0.18	0.15
Roof	0.18	0.15	0.12
Windows, rooflights & glazed doors	1.6	1.4	1.1

Element	Limiting 2021 U-value (W/m ² /K)	Notional 2021 U-value (W/m ² /K)	Target U-value (W/m ² /K)
Louvres	1.6	1.9	1.6
Personnel doors	1.6	1.9	1.3
	Limiting	Notional	Target
Air permeability (m ³ /h/m ²)	8	3	3

Table 3.2.1.1: U-values for typical building elements

Furthermore, in line with Technical Annex 2E, all glazing (excluding glazed doors) to spaces categorised as L1, L2, or L3 has been modelled with internal blinds with the following properties:

- Condition to lower device: ii > 250 *
- Condition to raise device: ii < 200 *
- Shading coefficient: 0.4
- Short-wave radiant fraction: 0.3

* Where “ii” is the incident irradiance variable in W/m².

As agreed with the design team the faith space (chapel) is being considered as a place of public worship, and as such is exempt from the Part L energy efficiency requirements, including the solar gains criterion.

3.2.2 Building services & lighting

Section 2.2.3 of the DfE Generic Design Brief Technical Annex 2H requires that, once the passive design of the building has been maximised, the required building services systems shall be optimised to further reduce energy demand. The lower the energy demand of the building, the easier it is to achieve Net Zero Carbon in Operation.

The ventilation strategy for the development was a key component in reducing energy demand, and follows the hierarchy in Section 4.4.1 of Technical Annex 2F:

- Natural ventilation
- Natural ventilation with fan assistance (hybrid)
- Mechanical ventilation with heat recovery (MVHR) in as many systems as possible, for example toilets
- Mechanical ventilation with peak lopping cooling using LZC as a source
- VRF or split systems with MVHR

The ventilation strategy drawings and Environmental Strategy Report describe the proposed ventilation strategy. The strategy makes full use of natural ventilation via openable windows/panels, including cross ventilation to classrooms making use of the stack-effect using openings at rear of classrooms and shafts feeding air to roof outlets, similar to that shown in Figure 3.2.2.1.

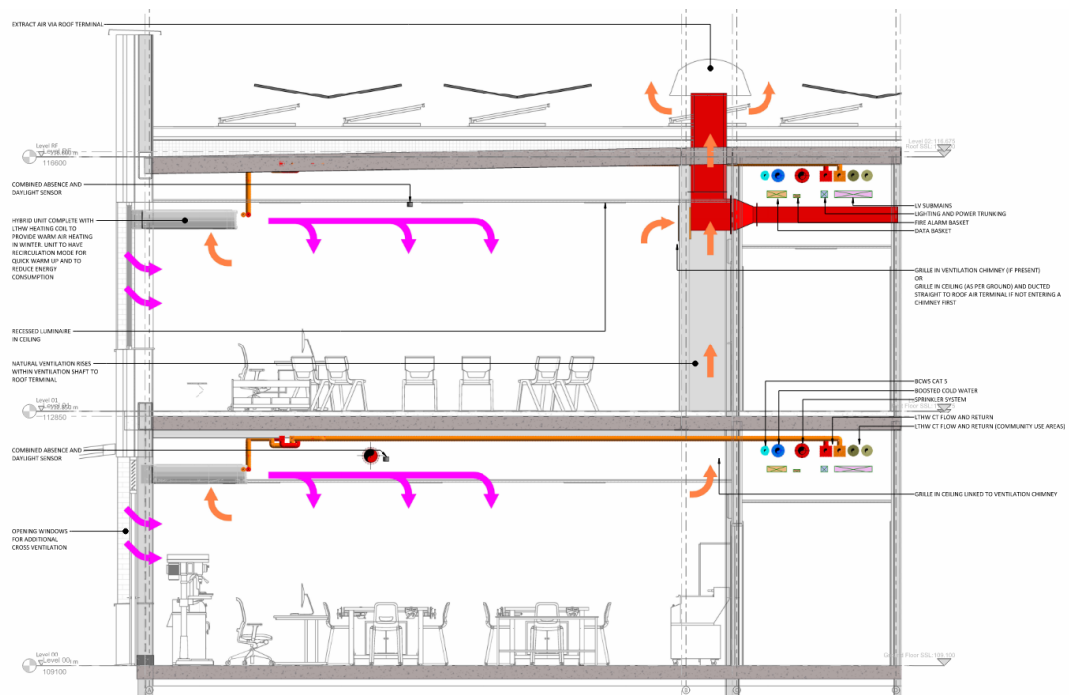


Figure 3.2.2.1: Proposed passive ventilation strategy in a typical classroom using a combination of cross and stack ventilation.

Where mechanical ventilation is used it uses heat recovery to minimise heating loads. A hybrid ventilation approach is additionally adopted in teaching spaces, with efficient wall mounted hybrid units provided to ensure thermal comfort in winter and summer conditions, eliminating cold drafts and allowing for secure night purge ventilation.

Using this hierarchy and design approach the energy requirement for ventilation and cooling is minimised.

Information regarding the system and lighting specification for the development are shown in Appendix A.

3.3 Be Clean: Heating Infrastructure

Following the DfE guidance, the energy systems required on site have been evaluated and optimised based on the development's scale and density. The potential to connect the proposed development to an existing or planned heat network has been evaluated. There is no current district heat network (DHN) available for connection in the Steyping area. The UK Heat Network Map indicates the closest DHN currently being constructed in Worthing, approximately 8 miles from the current site.

As such the connection to a local district heating network has been excluded from further consideration as it is not feasible.

3.4 Be Green: Renewable Energy

The next stage of the DfE Generic Design Brief Technical Annex 2H is Be Green, which encourages the use of renewable energy systems on site.

The aim of the strategy is to deliver a building which is Net Zero Carbon in Operation whereby all of the energy used in the building is offset on an annual basis by clean renewable energy generated on site.

3.4.1 *Ground source heat pumps*

In accordance with the heating hierarchy set out in Annex 2F and the school-specific brief (SSB), the primary heating source will be ground source heat pumps (GSHP) with a below-ground array.

For a large school, vertical boreholes rather than horizontal pipes are proposed, and this will help to maximise the capacity of the ground array. It is proposed to use directional drilling whereby boreholes are angled outwards to minimise the footprint of the borehole array.

The ground source heating plant will be located in a plant room within Block 14 of the new development.

3.4.2 *Photovoltaics (PV)*

PV panels are the most commonly used source of renewables in developments across the UK. Using solar radiation to generate electricity allows for buildings with

large, unused roof spaces to offset their emissions in a relatively straightforward way.

It is anticipated that a PV array of approximately 1,064kWp could be accommodated within the development. These would be located on the roof of the new proposed block and on the canopy which spans between Blocks 13, 14, 15, and 15. It should be noted that the PV quantities suggested in this report are indicative and are subject to confirmation by a PV specialist.

3.5 Energy & carbon results

The proposed new block has been fully modelled in IES VE in order to demonstrate compliance with Building Regulations Part L2 2021. The output is the BRUKL report, which is presented in Appendix B.

As detailed in Table 3.5.1, the development complies with the requirements of Part L2 of building regulations (2021).

The Faith Space (chapel) is shown to fail solar gains however, as mentioned in Section 3.2.1, it is exempt from this criterion of Part L.

Part L2 (2021) England				
Block	Block 13	Block 14	Block 15	Block 16
Target CO ₂ emission rate (TER), kgCO ₂ /m ² /year	3.63	3.08	1.74	4.17
Building CO ₂ emission rate (BER), kgCO ₂ /m ² /year	-2.66	-4.08	-2.44	-3.32
Target primary energy rate (TPER), kWh/m ² /year	37.76	32.36	16.76	43.64
Building primary energy rate (BPER), kWh/m ² /year	-35.4	-50.19	-32.32	-42.28
Does the building's emission and primary energy rates exceed the targets?	BER ≤ TER BPER ≤ TPER	BER ≤ TER BPER ≤ TPER	BER ≤ TER BPER ≤ TPER	BER ≤ TER BPER ≤ TPER

Table 3.5.1: Part L results summary.

The calculated regulated and unregulated carbon emissions for the development based on the Part L2 2021 assessment are shown in Table 3.5.2.

As the design develops, these values will be updated to more accurately calculate the predicted regulated and unregulated energy loads and corresponding carbon emissions of the school.

Energy type	Carbon dioxide emissions (tonnes CO ₂ per annum)
Regulated	46.1
Unregulated	67.6
Total emissions	113.7
Emissions offset by PV	-134.9
Net emissions	-21.1

Table 3.5.2: Regulated and unregulated annual CO₂ emissions (Part L).

Through the inclusion of the proposed PV array, the development is expected to achieve reduction of 119% in regulation & unregulated carbon emissions.

3.6 Be Seen: Performance in use

The final stage of the Energy Hierarchy listed within Technical Annex 2H is the “Be Seen” stage, whereby developers are required to review the predicted operational energy demand of a development and compare this to the actual operational energy consumption of the building once occupied.

Sufficient metering will be included to allow comparison between the predicted energy use and the energy consumption in operation.

A concept energy model has been developed to evaluate the feasibility of the new building designs for the 4 new blocks, regarding energy and in accordance with the Employers requirements and compare against the DfE target EUIs. The outputs of this modelling can be found within the Concept Operational Energy Report.

A CIBSE TM54 analysis of the proposed development has been instructed, and has been undertaken, in line with Section 3.1.3 of Technical Annex 2H and Technical Annex 2J. This is necessary as TM54 results may differ from Part L regulated and unregulated energy.

The design team are aware of their responsibilities at subsequent reporting stages and will appropriately secure these responsibilities.

4 Conclusion

Method Consulting LLP has been appointed to produce an Energy Statement for the Planning submission for the proposed new development at Steyping Grammar School. This assessment considers the application of the Energy Hierarchy, Net Zero Carbon aspiration, and Concept Operational Energy, and has been conducted on behalf of the client, BAM Construction.

It has been demonstrated how the carbon emissions from energy use in the development will be reduced through a combination of energy efficiency measures and renewable energy sources.

In line with the DfE Generic Design Brief Technical Annex 2H: Energy for the proposed buildings guidance, the proposed development has been designed in line with the energy efficiency hierarchy of 'Be Lean', 'Be Clean' and 'Be Green' to reduce energy consumption and operational cost of the development.

A fabric first approach has been adopted for minimising the need for heating, ventilation, cooling and artificial lighting, utilising high quality constructions, solar control and site optimisation. Natural ventilation has been prioritised, with cross and stack ventilation utilised in all teaching spaces, reducing reliance on mechanical means. Remaining ventilation requirements are met through a combination of hybrid and mechanical systems, optimising heat recovery to reduce space heating energy use. Direct electric radiant panels are utilised in corridors and naturally ventilated staff areas. Ground source heat pumps are utilised to provide space heating via warm air heating in spaces with mechanical or hybrid ventilation, and underfloor heating in stairways. Highly efficient lighting and intelligent controls have also been incorporated, further reducing anticipated energy use of the development, in line with Technical Annex 2H.

A PV array (approximately 1,064kWp) has been incorporated into the design, achieving an 119% reduction in regulated and unregulated CO₂ emissions. As well as this, the development currently meets the requirements of Part L2 of building regulations (2021). Further detail on the concept operational energy modelling and zero carbon strategy can be found in the relevant reports.

5 Appendices

5.1 Appendix A – Building services

Heating, cooling & ventilation system details				
	System	Efficiency	Specific Fan Power (W/(l/s))	Comments
1	Hybrid ventilation unit served by GSHP – Teaching spaces, dining halls, LRC, 6 th form social area	SCOP – 3.2	0.148	Ratio of fan power to heating output – 20.0 W/kW
				Heat recovery – 42%
				Provision for metering
				Demand controlled ventilation based on gas sensors – speed control
2	MVHR unit served by GSHP – Assembly hall, drama studios and faith space, offices, group rooms without natural ventilation, sports halls, activity studio and changing rooms, music practice rooms	SCOP – 3.2	1.5	Heat recovery – 83%
				Provision for metering
				Demand controlled ventilation based on gas sensors – speed control
3	Direct electric radiators with natural ventilation – Circulation spaces	100%	-	Provision for metering
4	Direct electric radiators with natural ventilation – Group rooms, offices and staff areas with windows	100%	-	Provision for metering
5	MVHR with split unit – Main server room	SCOP – 3.2 EER – 3.2 SEER – 5	1.8	Provision for metering
				Heat recovery – 83%
6	Direct electric radiators with zonal extract – WCs with <3 toilets, hygiene rooms	100%	0.5	Provision for metering

Heating, cooling & ventilation system details				
	System	Efficiency	Specific Fan Power (W/(l/s))	Comments
7	Zonal extract only – Cleaner’s cupboards	-	0.5	Provision for metering

DHW system details			
	System	Efficiency	Comments
1	Block 14 Kitchen DHW (ASHP with backup electric boiler)	SCOP – 3.2 (ASHP)	<u>Storage:</u> Volume – 750l Losses – 0.0047 kWh/l.day
			<u>Secondary Circulation:</u> 25m loop length 10W/m circulation losses
2	Direct electric DHW – all other	Efficiency – 100%	<u>Storage:</u> Block 13 – 565l Block 14 – 550l Block 15 – 415l Block 15 – 265l
			Losses – 0.0047 kWh/l.day No secondary circulation

Lighting controls				
Spaces	Daylight dimming	Manual switch	Presence detection	Absence detection
Classrooms, offices, other occupied/teaching areas with glazing	X	X	-	X
Other occupied/teaching areas without glazing	-	X	-	X
Assembly hall, activity studio, drama studios, dining rooms, circulation areas with glazing	X	-	X	-
Sports halls	-	X	X	-
Kitchen prep areas, plant, and server rooms	-	X	-	-
WCs, stores, hygiene rooms, circulation areas without glazing	-	-	X	-
Lighting efficacy (lm/W)	110			
Lighting systems to have provision for metering that warns 'out of range' values				

5.2 Appendix B – BRUKL output for the proposed development

5.2.1 *Block 13*

Project name

Steyning Grammar School - Block 13**As designed****Date:** Tue Dec 16 18:15:10 2025**Administrative information****Building Details****Address:** Shooting Field, Steyning, BN44 3RX**Certifier details****Name:** Method Consulting**Telephone number:** 01793 822044**Address:** 3 Newbridge Square, Swindon, SN1 1BY**Certification tool****Calculation engine:** Apache**Calculation engine version:** 7.0.28**Interface to calculation engine:** IES Virtual Environment**Interface to calculation engine version:** 7.0.28**BRUKL compliance module version:** v6.1.e.1**Foundation area [m²]:** 3090.02**The CO₂ emission and primary energy rates of the building must not exceed the targets**

Target CO ₂ emission rate (TER), kgCO ₂ /m ² .annum	3.63
Building CO ₂ emission rate (BER), kgCO ₂ /m ² .annum	-2.66
Target primary energy rate (TPER), kWh _{PE} /m ² .annum	37.76
Building primary energy rate (BPER), kWh _{PE} /m ² .annum	-35.4
Do the building's emission and primary energy rates exceed the targets?	BER ≤ TER BPER ≤ TPER

The performance of the building fabric and fixed building services should achieve reasonable overall standards of energy efficiency

Fabric element	U _{a-Limit}	U _{a-Calc}	U _{i-Calc}	First surface with maximum value
Walls*	0.26	0.15	0.15	0000004F:Surf[1]
Floors	0.18	0.12	0.12	0000003D:Surf[0]
Pitched roofs	0.16	-	-	No pitched roofs in building
Flat roofs	0.18	0.12	0.12	00000092:Surf[0]
Windows** and roof windows	1.6	1.1	1.1	00000016:Surf[1]
Rooflights***	2.2	1.1	1.1	02000003:Surf[0]
Personnel doors^	1.6	1.23	1.6	00000016:Surf[17]
Vehicle access & similar large doors	1.3	-	-	No vehicle access doors in building
High usage entrance doors	3	-	-	No high usage entrance doors in building

U_{a-Limit} = Limiting area-weighted average U-values [W/(m²K)]U_{i-Calc} = Calculated maximum individual element U-values [W/(m²K)]U_{a-Calc} = Calculated area-weighted average U-values [W/(m²K)]

* Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows.

** Display windows and similar glazing are excluded from the U-value check. *** Values for rooflights refer to the horizontal position.

^ For fire doors, limiting U-value is 1.8 W/m²K

NB: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.

Air permeability	Limiting standard	This building
m³/(h.m²) at 50 Pa	8	3

Building services

For details on the standard values listed below, system-specific guidance, and additional regulatory requirements, refer to the Approved Documents.

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 to 0.95

1- 2721ESG - Electric panel rads - Zonal Extr Vent

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	1	-	0.5	-	-
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

2- 2721ESG - GSHP - Heating coil - MVHR

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.2	-	0	1.5	0.83
Standard value	2.5*	N/A	N/A	1.5^	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.					
^ Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.					

3- 2721ESG - Electric panel rads - Nat vent

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	1	-	0.5	-	-
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- 2721ESG - GSHP - Hybrid Unit - NVHR (Indirect)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.2	-	0	-	0.42
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.					

5- 2721ESG - Electric panel rads - Nat vent (Indirect)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	1	-	0.5	-	-
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

6- 2721ESG - GSHP - Hybrid Unit - NVHR

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.2	-	0	-	0.42
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.					

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

Zone-level mechanical ventilation, exhaust, and terminal units

ID	System type in the Approved Documents
A	Local supply or extract ventilation units
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 balanced supply and extract ventilation system
E	Local balanced supply and extract ventilation units
F	Other local ventilation units
G	Fan assisted terminal variable air volume units
H	Fan coil units
I	Kitchen extract with the fan remote from the zone and a grease filter
NB: Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.	

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	2.3	2	0.5	0.5	0.4	1		Zone	Standard
00 - Block 13 - Accessible Toilet 3	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 13 - Accessible Toilet 4	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 13 - Accessible Toilet 8	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 13 - Accessible Toilet 14	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 13 - Cleaners' Store 3	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 13 - Cleaners' Store 15	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 13 - Cleaners' Store 16	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 13 - Cleaners' Store 18	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 13 - DT Prep Room (5027)	-	-	-	-	-	0.1	-	-	-	-	-	N/A
00 - Block 13 - DT Studio Graphics (1142)	-	-	-	-	-	0.1	-	-	-	-	-	N/A
00 - Block 13 - DT Studio Graphics (1143)	-	-	-	-	-	0.1	-	-	-	-	-	N/A
00 - Block 13 - DT Studio Textiles (1144)	-	-	-	-	-	0.1	-	-	-	-	-	N/A
00 - Block 13 - DT Workshop (1137)	-	-	-	-	-	0.1	-	-	-	-	-	N/A
00 - Block 13 - DT Workshop (1138)	-	-	-	-	-	0.1	-	-	-	-	-	N/A
00 - Block 13 - DT Workshop (1139)	-	-	-	-	-	0.1	-	-	-	-	-	N/A
00 - Block 13 - Food Prep Room 1	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 13 - Food Room 1 (1140)	-	-	-	-	-	0.1	-	-	-	-	-	N/A
00 - Block 13 - Food Room 2 (1141)	-	-	-	-	-	0.1	-	-	-	-	-	N/A
00 - Block 13 - Hygiene Room 1	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 13 - ICT Classroom (1101)	-	-	-	-	-	0.1	-	-	-	-	-	N/A
00 - Block 13 - Office 1 (4032)	-	-	-	-	-	0.1	-	-	-	-	-	N/A
00 - Block 13 - Toilet 1	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 13 - Toilet 2	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 13 - Toilet Suite	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 13 - Toilet Suite 3.1	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 13 - Toilet Suite 3.2	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 13 - Toilet Suite 3.3	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 13 - Toilet Suite 6	-	-	0.5	-	-	-	-	-	-	-	-	N/A
01 - Block 13 - Accessible Toilet 4	-	-	0.5	-	-	-	-	-	-	-	-	N/A
01 - Block 13 - Accessible Toilet 5	-	-	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	2.3	2	0.5	0.5	0.4	1	Zone	Standard	
01 - Block 13 - Accessible Toilet 6	-	-	0.5	-	-	-	-	-	-	-	N/A	
01 - Block 13 - Art Room 1 (1127)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 13 - Art Room 2 (1128)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 13 - Art Room 2 (1130)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 13 - Art Room 3D (1129)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 13 - Cleaners' Store 2	-	-	0.5	-	-	-	-	-	-	-	N/A	
01 - Block 13 - Cleaners' Store 3	-	-	0.5	-	-	-	-	-	-	-	N/A	
01 - Block 13 - Cleaners' Store 4	-	-	0.5	-	-	-	-	-	-	-	N/A	
01 - Block 13 - Cleaners' Store 17	-	-	0.5	-	-	-	-	-	-	-	N/A	
01 - Block 13 - Darkroom (3022/3023)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 13 - Maths Classroom (1056)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 13 - Maths Classroom (1057)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 13 - Maths Classroom (1058)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 13 - Maths Classroom (1059)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 13 - Maths Classroom (1060)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 13 - Maths Classroom (1061)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 13 - Maths Classroom (1062)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 13 - Maths Classroom (1063)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 13 - Maths Classroom (1064)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 13 - Maths Classroom (1065)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 13 - Maths Classroom (1066)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 13 - Maths Classroom (1067)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 13 - Maths Classroom (1068)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 13 - Maths Classroom (1069)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 13 - Music & Drama Classroom 1 (1134)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 13 - Music & Drama Classroom 2 (1135)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 13 - Music Room 1 (1132)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 13 - Music Room 2 (1133)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 13 - Staff Toilet 1	-	-	0.5	-	-	-	-	-	-	-	N/A	
01 - Block 13 - Staff Toilet 1	-	-	0.5	-	-	-	-	-	-	-	N/A	
01 - Block 13 - Staff Workroom 1 (4001)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 13 - Staff Workroom 1 (4001A)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 13 - Toilet 3	-	-	0.5	-	-	-	-	-	-	-	N/A	
01 - Block 13 - Toilet Suite 2	-	-	0.5	-	-	-	-	-	-	-	N/A	
01 - Block 13 - Toilet Suite 2	-	-	0.5	-	-	-	-	-	-	-	N/A	
01 - Block 13 - Toilets 8	-	-	0.5	-	-	-	-	-	-	-	N/A	

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m²]
	Standard value	95	80	0.3
00 - Block 13 - Accessible Toilet 3		110	-	-
00 - Block 13 - Accessible Toilet 4		110	-	-
00 - Block 13 - Accessible Toilet 8		110	-	-

General lighting and display lighting		General luminaire		Display light source	
Zone name		Efficacy [lm/W]		Efficacy [lm/W]	Power density [W/m²]
	Standard value	95		80	0.3
00 - Block 13 - Accessible Toilet 14		110		-	-
00 - Block 13 - Assembly Hall (2001)		110		-	-
00 - Block 13 - Changing (6046)		110		-	-
00 - Block 13 - Circulation		110		-	-
00 - Block 13 - Circulation		110		-	-
00 - Block 13 - Circulation		110		-	-
00 - Block 13 - Circulation		110		-	-
00 - Block 13 - Circulation		110		-	-
00 - Block 13 - Circulation		110		-	-
00 - Block 13 - Circulation		110		-	-
00 - Block 13 - Circulation		110		-	-
00 - Block 13 - Circulation		110		-	-
00 - Block 13 - Circulation		110		-	-
00 - Block 13 - Circulation		110		-	-
00 - Block 13 - Cleaners' Store 3		110		-	-
00 - Block 13 - Cleaners' Store 15		110		-	-
00 - Block 13 - Cleaners' Store 16		110		-	-
00 - Block 13 - Cleaners' Store 18		110		-	-
00 - Block 13 - Cupboard		110		-	-
00 - Block 13 - Cupboard		110		-	-
00 - Block 13 - Cupboard		110		-	-
00 - Block 13 - Cupboard		110		-	-
00 - Block 13 - Drama Studio 1 (1131)		110		-	-
00 - Block 13 - Drama Studio 1 (1136)		110		-	-
00 - Block 13 - DT Prep Room (5027)		110		-	-
00 - Block 13 - DT Studio Graphics (1142)		110		-	-
00 - Block 13 - DT Studio Graphics (1143)		110		-	-
00 - Block 13 - DT Studio Textiles (1144)		110		-	-
00 - Block 13 - DT Workshop (1137)		110		-	-
00 - Block 13 - DT Workshop (1138)		110		-	-
00 - Block 13 - DT Workshop (1139)		110		-	-
00 - Block 13 - Equipment Store Drama		110		-	-
00 - Block 13 - Exam Office 1 & 2 (4045/4046)		110		-	-
00 - Block 13 - Faith Space (3005)		110		-	-
00 - Block 13 - First Aid (4017)		110		-	-
00 - Block 13 - Food Prep Room 1		110		-	-
00 - Block 13 - Food Room 1 (1140)		110		-	-
00 - Block 13 - Food Room 2 (1141)		110		-	-
00 - Block 13 - Food Store 1		110		-	-
00 - Block 13 - Food Store 2		110		-	-
00 - Block 13 - Furniture Store		110		-	-
00 - Block 13 - Furniture Store 1		110		-	-

General lighting and display lighting		General luminaire		Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m²]	
	Standard value	95	80	0.3	
00 - Block 13 - Head's Office (4011)		110	-	-	
00 - Block 13 - Head's PA (4012)		110	-	-	
00 - Block 13 - Hygiene Room 1		110	-	-	
00 - Block 13 - ICT Classroom (1101)		110	-	-	
00 - Block 13 - Main Office (4014)		110	-	-	
00 - Block 13 - Medical Treatment Room 1 (3024)		110	-	-	
00 - Block 13 - Meeting Room (4005)		110	-	-	
00 - Block 13 - Meeting Room 1 (4016)		110	-	-	
00 - Block 13 - Office 1 (4032)		110	-	-	
00 - Block 13 - Office 1 (4044)		110	-	-	
00 - Block 13 - Office 2 (4033)		110	-	-	
00 - Block 13 - Office 2 (4043)		110	-	-	
00 - Block 13 - Office 3 (4034)		110	-	-	
00 - Block 13 - Office 8 (4039)		110	-	-	
00 - Block 13 - Plant Room 1 (electrical intake)		110	-	-	
00 - Block 13 - Reception Room 1 (4015)		110	80	1.688	
00 - Block 13 - Reception Room 2 (4015)		110	80	1.688	
00 - Block 13 - Reprographics (4013)		110	-	-	
00 - Block 13 - Secure Store		110	-	-	
00 - Block 13 - Small Group Room 1 (3026)		110	-	-	
00 - Block 13 - Small Group Room 6 (3031)		110	-	-	
00 - Block 13 - Small Group Room 7 (3032)		110	-	-	
00 - Block 13 - Sports Equipment Store 1		110	-	-	
00 - Block 13 - Staff Social (4004)		110	-	-	
00 - Block 13 - Stairway 1		110	-	-	
00 - Block 13 - Stairway 2		110	-	-	
00 - Block 13 - Stairway 3		110	-	-	
00 - Block 13 - Teaching Resource Store 1		110	-	-	
00 - Block 13 - Teaching Resource Store 2&5		110	-	-	
00 - Block 13 - Teaching Resource Store 3&4		110	-	-	
00 - Block 13 - Teaching Resource Store 6		110	-	-	
00 - Block 13 - Teaching Resource Store 7		110	-	-	
00 - Block 13 - Teaching Resource Store 7		110	-	-	
00 - Block 13 - Teaching Resource Store 8&11		110	-	-	
00 - Block 13 - Teaching Resource Store 9		110	-	-	
00 - Block 13 - Teaching Resource Store 10		110	-	-	
00 - Block 13 - Teaching Resource Store 10		110	-	-	
00 - Block 13 - Teaching Resource Store 12		110	-	-	
00 - Block 13 - Teaching Resources Store 8		110	-	-	
00 - Block 13 - Toilet 1		110	-	-	
00 - Block 13 - Toilet 2		110	-	-	
00 - Block 13 - Toilet Suite		110	-	-	
00 - Block 13 - Toilet Suite 3.1		110	-	-	

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m²]
	Standard value	95	80	0.3
00 - Block 13 - Toilet Suite 3.2		110	-	-
00 - Block 13 - Toilet Suite 3.3		110	-	-
00 - Block 13 - Toilet Suite 6		110	-	-
01 - Block 13 - Accessible Toilet 4		110	-	-
01 - Block 13 - Accessible Toilet 5		110	-	-
01 - Block 13 - Accessible Toilet 6		110	-	-
01 - Block 13 - Art Room 1 (1127)		110	-	-
01 - Block 13 - Art Room 2 (1128)		110	-	-
01 - Block 13 - Art Room 2 (1130)		110	-	-
01 - Block 13 - Art Room 3D (1129)		110	-	-
01 - Block 13 - Circulation		110	-	-
01 - Block 13 - Circulation		110	-	-
01 - Block 13 - Circulation		110	-	-
01 - Block 13 - Circulation		110	-	-
01 - Block 13 - Circulation		110	-	-
01 - Block 13 - Circulation		110	-	-
01 - Block 13 - Circulation		110	-	-
01 - Block 13 - Cleaners' Store 2		110	-	-
01 - Block 13 - Cleaners' Store 3		110	-	-
01 - Block 13 - Cleaners' Store 4		110	-	-
01 - Block 13 - Cleaners' Store 17		110	-	-
01 - Block 13 - Darkroom (3022/3023)		110	-	-
01 - Block 13 - Kiln (3006)		110	-	-
01 - Block 13 - Lighting and Recoding Control (3020/3021)		110	-	-
01 - Block 13 - Maths Classroom (1056)		110	-	-
01 - Block 13 - Maths Classroom (1057)		110	-	-
01 - Block 13 - Maths Classroom (1058)		110	-	-
01 - Block 13 - Maths Classroom (1059)		110	-	-
01 - Block 13 - Maths Classroom (1060)		110	-	-
01 - Block 13 - Maths Classroom (1061)		110	-	-
01 - Block 13 - Maths Classroom (1062)		110	-	-
01 - Block 13 - Maths Classroom (1063)		110	-	-
01 - Block 13 - Maths Classroom (1064)		110	-	-
01 - Block 13 - Maths Classroom (1065)		110	-	-
01 - Block 13 - Maths Classroom (1066)		110	-	-
01 - Block 13 - Maths Classroom (1067)		110	-	-
01 - Block 13 - Maths Classroom (1068)		110	-	-
01 - Block 13 - Maths Classroom (1069)		110	-	-
01 - Block 13 - Music & Drama Classroom 1 (1134)		110	-	-
01 - Block 13 - Music & Drama Classroom 2 (1135)		110	-	-
01 - Block 13 - Music Practice (3011)		110	-	-
01 - Block 13 - Music Practice 6 (3012)		110	-	-
01 - Block 13 - Music Practice Room 1 (3007)		110	-	-

General lighting and display lighting		General luminaire		Display light source	
Zone name		Efficacy [lm/W]		Efficacy [lm/W]	Power density [W/m²]
	Standard value	95		80	0.3
01 - Block 13 - Music Practice Room 2 (3008)		110		-	-
01 - Block 13 - Music Practice Room 3 (3009)		110		-	-
01 - Block 13 - Music Practice Room 4 (3010)		110		-	-
01 - Block 13 - Music Practice Room 7 (3013)		110		-	-
01 - Block 13 - Music Practice Room 8 (3014)		110		-	-
01 - Block 13 - Music Practice Room 9 (3015)		110		-	-
01 - Block 13 - Music Practice Room 10 (3016)		110		-	-
01 - Block 13 - Music Practice Room 11 (3017)		110		-	-
01 - Block 13 - Music Practice Room Extensive (3018)		110		-	-
01 - Block 13 - Music Practice Room Extensive 2 (3019)		110		-	-
01 - Block 13 - Music Room 1 (1132)		110		-	-
01 - Block 13 - Music Room 2 (1133)		110		-	-
01 - Block 13 - Office (4018/4020)		110		-	-
01 - Block 13 - Office 5 (4036)		110		-	-
01 - Block 13 - Office 6 (4023)		110		-	-
01 - Block 13 - Office 9 (4026)		110		-	-
01 - Block 13 - Hub (6064)		110		-	-
01 - Block 13 - Hub (6063)		110		-	-
01 - Block 13 - Small Group Room 2 & 5 (3027/3030)		110		-	-
01 - Block 13 - Small Group Room 4 (3029)		110		-	-
01 - Block 13 - Staff Toilet 1		110		-	-
01 - Block 13 - Staff Toilet 1		110		-	-
01 - Block 13 - Staff Workroom 1 (4001)		110		-	-
01 - Block 13 - Staff Workroom 1 (4001A)		110		-	-
01 - Block 13 - Stairway 4		110		-	-
01 - Block 13 - Stairway 5		110		-	-
01 - Block 13 - Stairway 6		110		-	-
01 - Block 13 - Store		110		-	-
01 - Block 13 - Store		110		-	-
01 - Block 13 - Teaching Resource Store 1		110		-	-
01 - Block 13 - Teaching Resource Store 2		110		-	-
01 - Block 13 - Teaching Resource Store 4		110		-	-
01 - Block 13 - Teaching Resource Store 5		110		-	-
01 - Block 13 - Teaching Resource Store 5		110		-	-
01 - Block 13 - Teaching Resource Store 6		110		-	-
01 - Block 13 - Teaching Resource Store 7		110		-	-
01 - Block 13 - Teaching Resource Store 9		110		-	-
01 - Block 13 - Teaching Resource Store 9		110		-	-
01 - Block 13 - Teaching Resource Store 11		110		-	-
01 - Block 13 - Teaching Resource Store 13		110		-	-
01 - Block 13 - Teaching Resources Store 1		110		-	-
01 - Block 13 - Teaching Resources Store 2		110		-	-
01 - Block 13 - Teaching Resources Store 3		110		-	-

General lighting and display lighting		General luminaire		Display light source	
Zone name		Efficacy [lm/W]		Efficacy [lm/W]	Power density [W/m²]
	Standard value	95		80	0.3
01 - Block 13 - Teaching Resources Store 10		110		-	-
01 - Block 13 - Toilet 3		110		-	-
01 - Block 13 - Toilet Suite 2		110		-	-
01 - Block 13 - Toilet Suite 2		110		-	-
01 - Block 13 - Toilets 8		110		-	-
02 - Block 13 - Stairway		110		-	-

The spaces in the building should have appropriate passive control measures to limit solar gains in summer

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
00 - Block 13 - Assembly Hall (2001)	NO (-18.5%)	YES
00 - Block 13 - Changing (6046)	N/A	N/A
00 - Block 13 - Drama Studio 1 (1131)	NO (-48.8%)	YES
00 - Block 13 - Drama Studio 1 (1136)	NO (-22.6%)	YES
00 - Block 13 - DT Prep Room (5027)	NO (-32.8%)	YES
00 - Block 13 - DT Studio Graphics (1142)	NO (-72.5%)	YES
00 - Block 13 - DT Studio Graphics (1143)	NO (-39.5%)	YES
00 - Block 13 - DT Studio Textiles (1144)	NO (-74.4%)	YES
00 - Block 13 - DT Workshop (1137)	NO (-41.7%)	YES
00 - Block 13 - DT Workshop (1138)	NO (-62.8%)	YES
00 - Block 13 - DT Workshop (1139)	NO (-52.9%)	YES
00 - Block 13 - Exam Office 1 & 2 (4045/4046)	NO (-68.3%)	YES
00 - Block 13 - Faith Space (3005)	YES (+50.8%)	YES
00 - Block 13 - First Aid (4017)	N/A	N/A
00 - Block 13 - Head's Office (4011)	NO (-59.5%)	YES
00 - Block 13 - Head's PA (4012)	NO (-68.2%)	YES
00 - Block 13 - ICT Classroom (1101)	NO (-75.5%)	YES
00 - Block 13 - Main Office (4014)	NO (-29.7%)	YES
00 - Block 13 - Medical Treatment Room 1 (3024)	N/A	N/A
00 - Block 13 - Meeting Room (4005)	NO (-34.1%)	YES
00 - Block 13 - Meeting Room 1 (4016)	NO (-62.5%)	YES
00 - Block 13 - Office 1 (4032)	N/A	N/A
00 - Block 13 - Office 1 (4044)	NO (-59.2%)	YES
00 - Block 13 - Office 2 (4033)	NO (-68%)	YES
00 - Block 13 - Office 2 (4043)	N/A	N/A
00 - Block 13 - Office 3 (4034)	NO (-85.6%)	YES
00 - Block 13 - Office 8 (4039)	NO (-51.2%)	YES
00 - Block 13 - Reception Room 1 (4015)	NO (-4.6%)	YES
00 - Block 13 - Reception Room 2 (4015)	N/A	N/A
00 - Block 13 - Reprographics (4013)	NO (-52.3%)	YES
00 - Block 13 - Small Group Room 1 (3026)	N/A	N/A
00 - Block 13 - Small Group Room 6 (3031)	N/A	N/A
00 - Block 13 - Small Group Room 7 (3032)	N/A	N/A
00 - Block 13 - Staff Social (4004)	NO (-42.8%)	YES

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
01 - Block 13 - Art Room 1 (1127)	NO (-61.1%)	YES
01 - Block 13 - Art Room 2 (1128)	NO (-48%)	YES
01 - Block 13 - Art Room 2 (1130)	NO (-48.1%)	YES
01 - Block 13 - Art Room 3D (1129)	NO (-70.9%)	YES
01 - Block 13 - Darkroom (3022/3023)	N/A	N/A
01 - Block 13 - Kiln (3006)	N/A	N/A
01 - Block 13 - Lighting and Recoding Control (3020/3021)	N/A	N/A
01 - Block 13 - Maths Classroom (1056)	NO (-48%)	YES
01 - Block 13 - Maths Classroom (1057)	NO (-52.5%)	YES
01 - Block 13 - Maths Classroom (1058)	NO (-48.3%)	YES
01 - Block 13 - Maths Classroom (1059)	NO (-48.6%)	YES
01 - Block 13 - Maths Classroom (1060)	NO (-52.5%)	YES
01 - Block 13 - Maths Classroom (1061)	NO (-52.5%)	YES
01 - Block 13 - Maths Classroom (1062)	NO (-50.6%)	YES
01 - Block 13 - Maths Classroom (1063)	NO (-52.4%)	YES
01 - Block 13 - Maths Classroom (1064)	NO (-52.5%)	YES
01 - Block 13 - Maths Classroom (1065)	NO (-52.9%)	YES
01 - Block 13 - Maths Classroom (1066)	NO (-40.4%)	YES
01 - Block 13 - Maths Classroom (1067)	NO (-78%)	YES
01 - Block 13 - Maths Classroom (1068)	NO (-40.6%)	YES
01 - Block 13 - Maths Classroom (1069)	NO (-39.9%)	YES
01 - Block 13 - Music & Drama Classroom 1 (1134)	NO (-40.5%)	YES
01 - Block 13 - Music & Drama Classroom 2 (1135)	NO (-44.3%)	YES
01 - Block 13 - Music Practice (3011)	N/A	N/A
01 - Block 13 - Music Practice 6 (3012)	N/A	N/A
01 - Block 13 - Music Practice Room 1 (3007)	N/A	N/A
01 - Block 13 - Music Practice Room 2 (3008)	NO (-78.2%)	YES
01 - Block 13 - Music Practice Room 3 (3009)	NO (-76.6%)	YES
01 - Block 13 - Music Practice Room 4 (3010)	N/A	N/A
01 - Block 13 - Music Practice Room 7 (3013)	N/A	N/A
01 - Block 13 - Music Practice Room 8 (3014)	N/A	N/A
01 - Block 13 - Music Practice Room 9 (3015)	N/A	N/A
01 - Block 13 - Music Practice Room 10 (3016)	N/A	N/A
01 - Block 13 - Music Practice Room 11 (3017)	N/A	N/A
01 - Block 13 - Music Practice Room Extensive (3018)	NO (-70.1%)	YES
01 - Block 13 - Music Practice Room Extensive 2 (3019)	NO (-76.7%)	NO
01 - Block 13 - Music Room 1 (1132)	NO (-75%)	YES
01 - Block 13 - Music Room 2 (1133)	NO (-52.7%)	YES
01 - Block 13 - Office (4018/4020)	NO (-80.6%)	YES
01 - Block 13 - Office 5 (4036)	NO (-62%)	YES
01 - Block 13 - Office 6 (4023)	NO (-44.3%)	YES
01 - Block 13 - Office 9 (4026)	NO (-20.2%)	YES
01 - Block 13 - Small Group Room 2 & 5 (3027/3030)	NO (-76.8%)	NO
01 - Block 13 - Small Group Room 4 (3029)	NO (-64%)	NO
01 - Block 13 - Staff Workroom 1 (4001)	NO (-50.1%)	YES
01 - Block 13 - Staff Workroom 1 (4001A)	NO (-12%)	YES

Regulation 25A: Consideration of high efficiency 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
Floor area [m ²]	5801.4	5801.4
External area [m ²]	9363.2	9363.2
Weather	SOU	SOU
Infiltration [m ³ /hm ² @ 50Pa]	3	3
Average conductance [W/K]	2060.16	2820.37
Average U-value [W/m ² K]	0.22	0.3
Alpha value* [%]	26.19	10

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

Building Use

% Area Building Type

Retail/Financial and Professional Services
 Restaurants and Cafes/Drinking Establishments/Takeaways
 Offices and Workshop Businesses
 General Industrial and Special Industrial Groups
 Storage or Distribution
 Hotels
 Residential Institutions: Hospitals and Care Homes
 Residential Institutions: Residential Schools
 Residential Institutions: Universities and Colleges
 Secure Residential Institutions
 Residential Spaces
 Non-residential Institutions: Community/Day Centre
 Non-residential Institutions: Libraries, Museums, and Galleries

100

Non-residential Institutions: Education

Non-residential Institutions: Primary Health Care Building
 Non-residential Institutions: Crown and County Courts
 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	10.67	11.27
Cooling	0	0
Auxiliary	2.21	2.39
Lighting	6.57	8.54
Hot water	10.08	9.41
Equipment*	18.86	18.86
TOTAL **	29.54	31.62

* 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	55	6.54
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0
<i>Displaced electricity</i>	<i>55</i>	<i>6.54</i>

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	60.57	88.89
Primary energy [kWh _{PE} /m ²]	-35.4	37.76
Total emissions [kg/m ²]	-2.66	3.63

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] Central heating using air distribution, [HS] GSHP/WSHP, [HFT] Electricity, [CFT] Electricity										
Actual	47.8	0	4.6	0	6.1	2.87	0	3.2	0	
Notional	49.3	0	4.9	0	4.8	2.78	0	----	----	
[ST] Central heating using water: radiators, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity										
Actual	80.4	0	25	0	5.4	0.89	0	1	0	
Notional	88.3	0	17.4	0	4.6	1.41	0	----	----	
[ST] Central heating using water: radiators, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity										
Actual	47.7	0	14.8	0	2.3	0.89	0	1	0	
Notional	60.1	0	11.8	0	1.1	1.41	0	----	----	
[ST] Other local room heater - fanned, [HS] GSHP/WSHP, [HFT] Electricity, [CFT] Electricity										
Actual	66.6	0	7.2	0	0.6	2.56	0	3.2	0	
Notional	122	0	12.2	0	2.4	2.78	0	----	----	
[ST] Central heating using water: radiators, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity										
Actual	139.3	0	43.4	0	1.4	0.89	0	1	0	
Notional	124.5	0	24.5	0	0.7	1.41	0	----	----	
[ST] Other local room heater - fanned, [HS] GSHP/WSHP, [HFT] Electricity, [CFT] Electricity										
Actual	75.8	0	8.2	0	0.2	2.56	0	3.2	0	
Notional	84.1	0	8.4	0	0	2.78	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

5.2.2 *Block 14*

Project name

Steyning Grammar School - Block 14**As designed**

Date: Wed Dec 17 11:19:08 2025

Administrative information

Building Details

Address: Shooting Field, Steyning, BN44 3RX

Certifier details

Name: Method Consulting

Telephone number: 01793 822044

Address: 3 Newbridge Square, Swindon, SN1 1BY

Certification tool

Calculation engine: Apache

Calculation engine version: 7.0.28

Interface to calculation engine: IES Virtual Environment

Interface to calculation engine version: 7.0.28

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

Foundation area [m²]: 2360.47The CO₂ emission and primary energy rates of the building must not exceed the targets

Target CO ₂ emission rate (TER), kgCO ₂ /m ² .annum	3.08
Building CO ₂ emission rate (BER), kgCO ₂ /m ² .annum	-4.08
Target primary energy rate (TPER), kWh _{PE} /m ² .annum	32.36
Building primary energy rate (BPER), kWh _{PE} /m ² .annum	-50.19
Do the building's emission and primary energy rates exceed the targets?	BER ≤ TER BPER ≤ TPER

The performance of the building fabric and fixed building services should achieve reasonable overall standards of energy efficiency

Fabric element	U _{a-Limit}	U _{a-Calc}	U _{i-Calc}	First surface with maximum value
Walls*	0.26	0.15	0.15	00000025:Surf[0]
Floors	0.18	0.12	0.12	BL000034:Surf[0]
Pitched roofs	0.16	-	-	No pitched roofs in building
Flat roofs	0.18	0.12	0.12	01000012:Surf[14]
Windows** and roof windows	1.6	1.1	1.1	BL00000E:Surf[1]
Rooflights***	2.2	1.1	1.1	DJ000000:Surf[0]
Personnel doors^	1.6	1.22	1.6	BL000008:Surf[2]
Vehicle access & similar large doors	1.3	-	-	No vehicle access doors in building
High usage entrance doors	3	-	-	No high usage entrance doors in building

U_{a-Limit} = Limiting area-weighted average U-values [W/(m²K)]U_{i-Calc} = Calculated maximum individual element U-values [W/(m²K)]U_{a-Calc} = Calculated area-weighted average U-values [W/(m²K)]

* Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows.

** Display windows and similar glazing are excluded from the U-value check.

*** Values for rooflights refer to the horizontal position.

^ For fire doors, limiting U-value is 1.8 W/m²K

NB: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.

Air permeability	Limiting standard	This building
m ³ /(h.m ²) at 50 Pa	8	3

Building services

For details on the standard values listed below, system-specific guidance, and additional regulatory requirements, refer to the Approved Documents.

Whole building lighting automatic monitoring & targeting with alarms for out-of-range values	YES
Whole building electric power factor achieved by power factor correction	>0.95

1- 2721ESG - Electric panel rads - Zonal Extr Vent

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	1	-	0.5	-	-
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

2- 2721ESG - Electric panel rads - Nat vent (Indirect)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	1	-	0.5	-	-
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- 2721ESG - GSHP - Hybrid Unit - NVHR (Indirect)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.2	-	0	-	0.42
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.					

4- 2721ESG - Electric panel rads - Nat vent

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	1	-	0.5	-	-
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- 2721ESG - GSHP - Hybrid Unit - NVHR

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.2	-	0	-	0.42
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.					

6- 2721ESG - GSHP - Heating coil - MVHR

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.2	-	0	1.5	0.83
Standard value	2.5*	N/A	N/A	1.5^	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.					
^ Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.					

7- 2721ESG - ASHP - DX Cooling - MVHR (Server Rooms)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	2.64	5	0	-	0.85
Standard value	2.5*	5	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.					

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

Zone-level mechanical ventilation, exhaust, and terminal units

ID	System type in the Approved Documents
A	Local supply or extract ventilation units
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 balanced supply and extract ventilation system
E	Local balanced supply and extract ventilation units
F	Other local ventilation units
G	Fan assisted terminal variable air volume units
H	Fan coil units
I	Kitchen extract with the fan remote from the zone and a grease filter
NB: Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.	

Zone name	SFP [W/(l/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I		Zone	Standard
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1			
00 - Block 14 - Accessible Toilet	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 14 - Accessible Toilet 7	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 14 - Accessible Toilet 9	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 14 - Cleaners' Store 1	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 14 - Cleaners' Store 7	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 14 - ICT Classroom (1102)	-	-	-	-	-	0.1	-	-	-	-	-	N/A
00 - Block 14 - ICT Classroom (1103)	-	-	-	-	-	0.1	-	-	-	-	-	N/A
00 - Block 14 - ICT Classroom (1104)	-	-	-	-	-	0.1	-	-	-	-	-	N/A
00 - Block 14 - ICT Classroom (1105)	-	-	-	-	-	0.1	-	-	-	-	-	N/A
00 - Block 14 - ICT Classroom (1106)	-	-	-	-	-	0.1	-	-	-	-	-	N/A
00 - Block 14 - ICT Tech (4048)	-	-	-	-	-	0.1	-	-	-	-	-	N/A
00 - Block 14 - Kitchen WC	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 14 - KS3 Dining Hall (2006)	-	-	-	-	-	0.1	-	-	-	-	-	N/A
00 - Block 14 - KS4 Dining Hall (2005)	-	-	-	-	-	0.1	-	-	-	-	-	N/A
00 - Block 14 - MFL Classroom (1054)	-	-	-	-	-	0.1	-	-	-	-	-	N/A
00 - Block 14 - MFL Classroom (1055)	-	-	-	-	-	0.1	-	-	-	-	-	N/A
00 - Block 14 - Office 7 (4038)	-	-	-	-	-	0.1	-	-	-	-	-	N/A
00 - Block 14 - Staff Workroom 1 (4003A)	-	-	-	-	-	0.1	-	-	-	-	-	N/A
00 - Block 14 - Toilet Suite (5P)	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 14 - Toilet Suite (5P)	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 14 - Toilet Suite (5P)	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 14 - Toilet Suite (5P)	-	-	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	2.3	2	0.5	0.5	0.4	1	Zone	Standard	
01 - Block 14 - Accessible Toilet	-	-	0.5	-	-	-	-	-	-	-	N/A	
01 - Block 14 - Accessible Toilet 10	-	-	0.5	-	-	-	-	-	-	-	N/A	
01 - Block 14 - Accessible Toilet 12	-	-	0.5	-	-	-	-	-	-	-	N/A	
01 - Block 14 - Cleaners' Store 9	-	-	0.5	-	-	-	-	-	-	-	N/A	
01 - Block 14 - English Classroom (1008)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 14 - English Classroom (1009)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 14 - English Classroom (1010)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 14 - English Classroom (1011)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 14 - English Classroom (1012)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 14 - English Classroom (1013)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 14 - English Classroom (1014)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 14 - English Classroom (1015)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 14 - English Classroom (1016)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 14 - English Classroom (1017)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 14 - English Classroom (1018)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 14 - English Classroom (1019)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 14 - English Classroom (1020)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 14 - English Classroom (1021)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 14 - ICT Classroom (1107)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 14 - Library Resource Centre 1 (3001)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 14 - Science Lab Biology (1108)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 14 - Science Lab Biology (1109)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 14 - Science Lab Biology (1110)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 14 - Science Lab Biology (1111)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 14 - Science Prep (5015A)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 14 - Server (6062)	-	-	-	1.8	-	-	-	-	-	-	N/A	
01 - Block 14 - Staff Workroom 1 (4003)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 14 - Toilet Suite (5P)	-	-	0.5	-	-	-	-	-	-	-	N/A	
01 - Block 14 - Toilet Suite (5P)	-	-	0.5	-	-	-	-	-	-	-	N/A	
02 - Block 14 - Accessible Toilet 11	-	-	0.5	-	-	-	-	-	-	-	N/A	
02 - Block 14 - Accessible Toilet 13	-	-	0.5	-	-	-	-	-	-	-	N/A	
02 - Block 14 - Accessible Toilet 13	-	-	0.5	-	-	-	-	-	-	-	N/A	
02 - Block 14 - Chemical Store (5016)	-	-	0.5	-	-	-	-	-	-	-	N/A	
02 - Block 14 - Cleaners' Store 10	-	-	0.5	-	-	-	-	-	-	-	N/A	
02 - Block 14 - Science Lab Chemistry (1121)	-	-	-	-	-	0.1	-	-	-	-	N/A	
02 - Block 14 - Science Lab Chemistry (1122)	-	-	-	-	-	0.1	-	-	-	-	N/A	
02 - Block 14 - Science Lab Chemistry (1123)	-	-	-	-	-	0.1	-	-	-	-	N/A	
02 - Block 14 - Science Lab Chemistry (1124)	-	-	-	-	-	0.1	-	-	-	-	N/A	
02 - Block 14 - Science Lab Chemistry (1125)	-	-	-	-	-	0.1	-	-	-	-	N/A	
02 - Block 14 - Science Lab Chemistry (1126)	-	-	-	-	-	0.1	-	-	-	-	N/A	
02 - Block 14 - Science Lab Physics (1112)	-	-	-	-	-	0.1	-	-	-	-	N/A	
02 - Block 14 - Science Lab Physics (1113)	-	-	-	-	-	0.1	-	-	-	-	N/A	
02 - Block 14 - Science Lab Physics (1114)	-	-	-	-	-	0.1	-	-	-	-	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	2.3	2	0.5	0.5	0.4	1	Zone	Standard
02 - Block 14 - Science Lab Physics (1115)		-	-	-	-	-	0.1	-	-	-	-	N/A
02 - Block 14 - Science Lab Physics (1116)		-	-	-	-	-	0.1	-	-	-	-	N/A
02 - Block 14 - Science Lab Physics (1117)		-	-	-	-	-	0.1	-	-	-	-	N/A
02 - Block 14 - Science Lab Physics (1118)		-	-	-	-	-	0.1	-	-	-	-	N/A
02 - Block 14 - Science Lab Physics (1119)		-	-	-	-	-	0.1	-	-	-	-	N/A
02 - Block 14 - Science Lab Physics (1120)		-	-	-	-	-	0.1	-	-	-	-	N/A
02 - Block 14 - Science Prep (5015)		-	-	-	-	-	0.1	-	-	-	-	N/A
02 - Block 14 - Small Group Room 3 (3028)		-	-	-	-	-	0.1	-	-	-	-	N/A
02 - Block 14 - Small Group Room 5 (3041)		-	-	-	-	-	0.1	-	-	-	-	N/A
02 - Block 14 - Staff Workroom 2 (4002A)		-	-	-	-	-	0.1	-	-	-	-	N/A
02 - Block 14 - Staffroom (4010)		-	-	-	-	-	0.1	-	-	-	-	N/A
02 - Block 14 - Toilet Suite (5P)		-	-	0.5	-	-	-	-	-	-	-	N/A
02 - Block 14 - Toilet Suite (5P)		-	-	0.5	-	-	-	-	-	-	-	N/A
02 - Block 14 - Toilet Suite (5P)		-	-	0.5	-	-	-	-	-	-	-	N/A
02 - Block 14 - Toilet Suite (5P)		-	-	0.5	-	-	-	-	-	-	-	N/A

General lighting and display lighting		General luminaire		Display light source	
Zone name		Efficacy [lm/W]		Efficacy [lm/W]	Power density [W/m²]
Standard value		95		80	0.3
00 - Block 14 - Accessible Toilet		110		-	-
00 - Block 14 - Accessible Toilet 7		110		-	-
00 - Block 14 - Accessible Toilet 9		110		-	-
00 - Block 14 - Central Store (5103)		110		-	-
00 - Block 14 - Chiller		110		-	-
00 - Block 14 - Circulation		110		-	-
00 - Block 14 - Circulation		110		-	-
00 - Block 14 - Circulation		110		-	-
00 - Block 14 - Circulation		110		-	-
00 - Block 14 - Circulation		110		-	-
00 - Block 14 - Circulation		110		-	-
00 - Block 14 - Circulation		110		-	-
00 - Block 14 - Classroom Store 2		110		-	-
00 - Block 14 - Classroom Store 4		110		-	-
00 - Block 14 - Cleaners' Store 1		110		-	-
00 - Block 14 - Cleaners' Store 7		110		-	-
00 - Block 14 - Dry Store		110		-	-
00 - Block 14 - Freezer		110		-	-
00 - Block 14 - ICT Classroom (1102)		110		-	-
00 - Block 14 - ICT Classroom (1103)		110		-	-
00 - Block 14 - ICT Classroom (1104)		110		-	-
00 - Block 14 - ICT Classroom (1105)		110		-	-
00 - Block 14 - ICT Classroom (1106)		110		-	-
00 - Block 14 - ICT Tech (4048)		110		-	-

General lighting and display lighting		General luminaire		Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m²]
	Standard value	95	80		0.3
00 - Block 14 - Kitchen (6001)		110	-		-
00 - Block 14 - Kitchen Changing		110	-		-
00 - Block 14 - Kitchen Office		110	-		-
00 - Block 14 - Kitchen WC		110	-		-
00 - Block 14 - KS3 Dining Hall (2006)		110	-		-
00 - Block 14 - KS4 Dining Hall (2005)		110	-		-
00 - Block 14 - MFL Classroom (1054)		110	-		-
00 - Block 14 - MFL Classroom (1055)		110	-		-
00 - Block 14 - Office 1 (4042)		110	-		-
00 - Block 14 - Office 4 (4035)		110	-		-
00 - Block 14 - Office 7 (4038)		110	-		-
00 - Block 14 - Plant (Elec)		110	-		-
00 - Block 14 - Plant (GSHP)		110	-		-
00 - Block 14 - Plant (Water)		110	-		-
00 - Block 14 - Premises Office (4049)		110	-		-
00 - Block 14 - Small Group Room 3 (3039)		110	-		-
00 - Block 14 - Small Group Room 4 (3040)		110	-		-
00 - Block 14 - Staff Workroom 1 (4003A)		110	-		-
00 - Block 14 - Stairway 7		110	-		-
00 - Block 14 - Stairway 8		110	-		-
00 - Block 14 - Stairway 9		110	-		-
00 - Block 14 - Store		110	-		-
00 - Block 14 - Teaching Resource Store		110	-		-
00 - Block 14 - Teaching Resource Store 14		110	-		-
00 - Block 14 - Toilet Suite (5P)		110	-		-
00 - Block 14 - Toilet Suite (5P)		110	-		-
00 - Block 14 - Toilet Suite (5P)		110	-		-
00 - Block 14 - Toilet Suite (5P)		110	-		-
01 - Block 14 - Accessible Toilet		110	-		-
01 - Block 14 - Accessible Toilet 10		110	-		-
01 - Block 14 - Accessible Toilet 12		110	-		-
01 - Block 14 - Circulation		110	-		-
01 - Block 14 - Circulation		110	-		-
01 - Block 14 - Circulation		110	-		-
01 - Block 14 - Circulation		110	-		-
01 - Block 14 - Circulation		110	-		-
01 - Block 14 - Circulation		110	-		-
01 - Block 14 - Cleaners' Store 9		110	-		-
01 - Block 14 - Cupboard		110	-		-
01 - Block 14 - English Classroom (1008)		110	-		-
01 - Block 14 - English Classroom (1009)		110	-		-
01 - Block 14 - English Classroom (1010)		110	-		-
01 - Block 14 - English Classroom (1011)		110	-		-

General lighting and display lighting		General luminaire		Display light source	
Zone name		Efficacy [lm/W]		Efficacy [lm/W]	Power density [W/m²]
	Standard value	95		80	0.3
01 - Block 14 - English Classroom (1012)		110		-	-
01 - Block 14 - English Classroom (1013)		110		-	-
01 - Block 14 - English Classroom (1014)		110		-	-
01 - Block 14 - English Classroom (1015)		110		-	-
01 - Block 14 - English Classroom (1016)		110		-	-
01 - Block 14 - English Classroom (1017)		110		-	-
01 - Block 14 - English Classroom (1018)		110		-	-
01 - Block 14 - English Classroom (1019)		110		-	-
01 - Block 14 - English Classroom (1020)		110		-	-
01 - Block 14 - English Classroom (1021)		110		-	-
01 - Block 14 - Hub Room (6066A)		110		-	-
01 - Block 14 - ICT Classroom (1107)		110		-	-
01 - Block 14 - Library Resource Centre 1 (3001)		110		-	-
01 - Block 14 - Office (4021)		110		-	-
01 - Block 14 - Office 2 (4019)		110		-	-
01 - Block 14 - Office 11 (4028)		110		-	-
01 - Block 14 - Science Lab Biology (1108)		110		-	-
01 - Block 14 - Science Lab Biology (1109)		110		-	-
01 - Block 14 - Science Lab Biology (1110)		110		-	-
01 - Block 14 - Science Lab Biology (1111)		110		-	-
01 - Block 14 - Science Prep (5015A)		110		-	-
01 - Block 14 - Server (6062)		110		-	-
01 - Block 14 - Small Group Room 9 (3034)		110		-	-
01 - Block 14 - Small Group Room 10 (3035)		110		-	-
01 - Block 14 - Staff Workroom 1 (4003)		110		-	-
01 - Block 14 - Stairway 10		110		-	-
01 - Block 14 - Stairway 11		110		-	-
01 - Block 14 - Stairway 12		110		-	-
01 - Block 14 - Teaching Resource Store 1		110		-	-
01 - Block 14 - Toilet Suite (5P)		110		-	-
01 - Block 14 - Toilet Suite (5P)		110		-	-
02 - Block 14 - Accessible Toilet 11		110		-	-
02 - Block 14 - Accessible Toilet 13		110		-	-
02 - Block 14 - Accessible Toilet 13		110		-	-
02 - Block 14 - Chemical Store (5016)		110		-	-
02 - Block 14 - Circulation		110		-	-
02 - Block 14 - Circulation		110		-	-
02 - Block 14 - Circulation		110		-	-
02 - Block 14 - Circulation		110		-	-
02 - Block 14 - Cleaners' Store 10		110		-	-
02 - Block 14 - Cupboard		110		-	-
02 - Block 14 - Cupboard		110		-	-
02 - Block 14 - Office 5 (4022)		110		-	-

General lighting and display lighting		General luminaire		Display light source	
Zone name		Efficacy [lm/W]		Efficacy [lm/W]	Power density [W/m²]
	Standard value	95		80	0.3
02 - Block 14 - Office 12 (4029)		110		-	-
02 - Block 14 - Office 13 (4030)		110		-	-
02 - Block 14 - Science Lab Chemistry (1121)		110		-	-
02 - Block 14 - Science Lab Chemistry (1122)		110		-	-
02 - Block 14 - Science Lab Chemistry (1123)		110		-	-
02 - Block 14 - Science Lab Chemistry (1124)		110		-	-
02 - Block 14 - Science Lab Chemistry (1125)		110		-	-
02 - Block 14 - Science Lab Chemistry (1126)		110		-	-
02 - Block 14 - Science Lab Physics (1112)		110		-	-
02 - Block 14 - Science Lab Physics (1113)		110		-	-
02 - Block 14 - Science Lab Physics (1114)		110		-	-
02 - Block 14 - Science Lab Physics (1115)		110		-	-
02 - Block 14 - Science Lab Physics (1116)		110		-	-
02 - Block 14 - Science Lab Physics (1117)		110		-	-
02 - Block 14 - Science Lab Physics (1118)		110		-	-
02 - Block 14 - Science Lab Physics (1119)		110		-	-
02 - Block 14 - Science Lab Physics (1120)		110		-	-
02 - Block 14 - Science Prep (5015)		110		-	-
02 - Block 14 - Small Group Room 3 (3028)		110		-	-
02 - Block 14 - Small Group Room 5 (3041)		110		-	-
02 - Block 14 - Staff Workroom 2 (4002A)		110		-	-
02 - Block 14 - Staffroom (4010)		110		-	-
02 - Block 14 - Stairway 13		110		-	-
02 - Block 14 - Stairway 14		110		-	-
02 - Block 14 - Stairway 15		110		-	-
02 - Block 14 - Toilet Suite (5P)		110		-	-
02 - Block 14 - Toilet Suite (5P)		110		-	-
02 - Block 14 - Toilet Suite (5P)		110		-	-
02 - Block 14 - Toilet Suite (5P)		110		-	-
03 - Block 14 - Stairway		110		-	-

The spaces in the building should have appropriate passive control measures to limit solar gains in summer

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
00 - Block 14 - ICT Classroom (1102)	NO (-65.8%)	YES
00 - Block 14 - ICT Classroom (1103)	NO (-77.5%)	YES
00 - Block 14 - ICT Classroom (1104)	NO (-75.6%)	YES
00 - Block 14 - ICT Classroom (1105)	NO (-64.3%)	YES
00 - Block 14 - ICT Classroom (1106)	NO (-60.4%)	YES
00 - Block 14 - ICT Tech (4048)	NO (-59.8%)	YES
00 - Block 14 - Kitchen Office	NO (-62.3%)	YES
00 - Block 14 - KS3 Dining Hall (2006)	NO (-20.2%)	YES
00 - Block 14 - KS4 Dining Hall (2005)	NO (-42.3%)	YES
00 - Block 14 - MFL Classroom (1054)	NO (-50.4%)	YES

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
00 - Block 14 - MFL Classroom (1055)	NO (-74.8%)	YES
00 - Block 14 - Office 1 (4042)	NO (-85.6%)	YES
00 - Block 14 - Office 4 (4035)	NO (-67.9%)	YES
00 - Block 14 - Office 7 (4038)	N/A	N/A
00 - Block 14 - Premises Office (4049)	NO (-29.2%)	YES
00 - Block 14 - Small Group Room 3 (3039)	NO (-67%)	YES
00 - Block 14 - Small Group Room 4 (3040)	NO (-83.3%)	YES
00 - Block 14 - Staff Workroom 1 (4003A)	NO (-61.8%)	YES
01 - Block 14 - English Classroom (1008)	NO (-57.3%)	YES
01 - Block 14 - English Classroom (1009)	NO (-53.7%)	YES
01 - Block 14 - English Classroom (1010)	NO (-56.1%)	YES
01 - Block 14 - English Classroom (1011)	NO (-58.3%)	YES
01 - Block 14 - English Classroom (1012)	NO (-69.5%)	YES
01 - Block 14 - English Classroom (1013)	NO (-58.2%)	YES
01 - Block 14 - English Classroom (1014)	NO (-52%)	YES
01 - Block 14 - English Classroom (1015)	NO (-49.8%)	YES
01 - Block 14 - English Classroom (1016)	NO (-48.6%)	YES
01 - Block 14 - English Classroom (1017)	NO (-48.6%)	YES
01 - Block 14 - English Classroom (1018)	NO (-48.7%)	YES
01 - Block 14 - English Classroom (1019)	NO (-47.3%)	YES
01 - Block 14 - English Classroom (1020)	NO (-48.8%)	YES
01 - Block 14 - English Classroom (1021)	NO (-74.2%)	YES
01 - Block 14 - ICT Classroom (1107)	NO (-59.3%)	YES
01 - Block 14 - Library Resource Centre 1 (3001)	NO (-62.3%)	YES
01 - Block 14 - Office (4021)	NO (-34.1%)	YES
01 - Block 14 - Office 2 (4019)	NO (-46.4%)	YES
01 - Block 14 - Office 11 (4028)	N/A	N/A
01 - Block 14 - Science Lab Biology (1108)	NO (-60.4%)	YES
01 - Block 14 - Science Lab Biology (1109)	NO (-60.9%)	YES
01 - Block 14 - Science Lab Biology (1110)	NO (-48.9%)	YES
01 - Block 14 - Science Lab Biology (1111)	NO (-48.5%)	YES
01 - Block 14 - Science Prep (5015A)	NO (-55%)	YES
01 - Block 14 - Server (6062)	N/A	N/A
01 - Block 14 - Small Group Room 9 (3034)	N/A	N/A
01 - Block 14 - Small Group Room 10 (3035)	N/A	N/A
01 - Block 14 - Staff Workroom 1 (4003)	NO (-44.6%)	YES
02 - Block 14 - Office 5 (4022)	NO (-51.1%)	YES
02 - Block 14 - Office 12 (4029)	NO (-61.1%)	YES
02 - Block 14 - Office 13 (4030)	NO (-43%)	YES
02 - Block 14 - Science Lab Chemistry (1121)	NO (-55.9%)	YES
02 - Block 14 - Science Lab Chemistry (1122)	NO (-59.6%)	YES
02 - Block 14 - Science Lab Chemistry (1123)	NO (-59.7%)	YES
02 - Block 14 - Science Lab Chemistry (1124)	NO (-52.6%)	YES
02 - Block 14 - Science Lab Chemistry (1125)	NO (-56%)	YES
02 - Block 14 - Science Lab Chemistry (1126)	NO (-51.5%)	YES
02 - Block 14 - Science Lab Physics (1112)	NO (-60%)	YES
02 - Block 14 - Science Lab Physics (1113)	NO (-54.4%)	YES
02 - Block 14 - Science Lab Physics (1114)	NO (-56%)	YES
02 - Block 14 - Science Lab Physics (1115)	NO (-57.4%)	YES

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
02 - Block 14 - Science Lab Physics (1116)	NO (-46.8%)	YES
02 - Block 14 - Science Lab Physics (1117)	NO (-76.5%)	YES
02 - Block 14 - Science Lab Physics (1118)	NO (-48.5%)	YES
02 - Block 14 - Science Lab Physics (1119)	NO (-47.5%)	YES
02 - Block 14 - Science Lab Physics (1120)	NO (-68.2%)	YES
02 - Block 14 - Science Prep (5015)	NO (-44.2%)	YES
02 - Block 14 - Small Group Room 3 (3028)	NO (-61.8%)	NO
02 - Block 14 - Small Group Room 5 (3041)	NO (-70%)	NO
02 - Block 14 - Staff Workroom 2 (4002A)	NO (-44.7%)	YES
02 - Block 14 - Staffroom (4010)	NO (-32.2%)	YES

Regulation 25A: Consideration of high efficiency 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
Floor area [m ²]	7196	7196
External area [m ²]	8479.2	8479.2
Weather	SOU	SOU
Infiltration [m ³ /hm ² @ 50Pa]	3	3
Average conductance [W/K]	2097.65	3120.91
Average U-value [W/m ² K]	0.25	0.37
Alpha value* [%]	25.96	10

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

Building Use

% Area	Building Type
	Retail/Financial and Professional Services
	Restaurants and Cafes/Drinking Establishments/Takeaways
	Offices and Workshop Businesses
	General Industrial and Special Industrial Groups
	Storage or Distribution
	Hotels
	Residential Institutions: Hospitals and Care Homes
	Residential Institutions: Residential Schools
	Residential Institutions: Universities and Colleges
	Secure Residential Institutions
	Residential Spaces
	Non-residential Institutions: Community/Day Centre
	Non-residential Institutions: Libraries, Museums, and Galleries
99	Non-residential Institutions: Education
	Non-residential Institutions: Primary Health Care Building
	Non-residential Institutions: Crown and County Courts
	General Assembly and Leisure, Night Clubs, and Theatres
	Others: Passenger Terminals
	Others: Emergency Services
1	Others: Miscellaneous 24hr Activities
	Others: Car Parks 24 hrs
	Others: Stand Alone Utility Block

Energy Consumption by End Use [kWh/m²]

	Actual	Notional
Heating	4.66	6.83
Cooling	0.37	0.26
Auxiliary	1.27	1.94
Lighting	5.77	8.08
Hot water	8.15	7.51
Equipment*	34.41	34.41
TOTAL **	20.22	24.61

* 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	55	3.04
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0
<i>Displaced electricity</i>	<i>55</i>	<i>3.04</i>

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	33.7	60.43
Primary energy [kWh _{PE} /m ²]	-50.19	32.36
Total emissions [kg/m ²]	-4.08	3.08

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] Central heating using water: radiators, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity										
Actual	25.6	0	8	0	2.5	0.89	0	1	0	
Notional	42.8	0	8.4	0	1.2	1.41	0	----	----	
[ST] Central heating using air distribution, [HS] GSHP/WSHP, [HFT] Electricity, [CFT] Electricity										
Actual	5	0	0.5	0	3.6	2.87	0	3.2	0	
Notional	7.1	0	0.7	0	4.1	2.78	0	----	----	
[ST] Central heating using water: radiators, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity										
Actual	47.9	0	14.9	0	1.8	0.89	0	1	0	
Notional	48.2	0	9.5	0	0.9	1.41	0	----	----	
[ST] Central heating using water: radiators, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity										
Actual	25.6	0	8	0	5.5	0.89	0	1	0	
Notional	50.9	0	10	0	4.6	1.41	0	----	----	
[ST] Other local room heater - fanned, [HS] GSHP/WSHP, [HFT] Electricity, [CFT] Electricity										
Actual	31	0	3.4	0	0.4	2.56	0	3.2	0	
Notional	64.4	0	6.4	0	2	2.78	0	----	----	
[ST] Other local room heater - fanned, [HS] GSHP/WSHP, [HFT] Electricity, [CFT] Electricity										
Actual	179.4	0	19.5	0	0.4	2.56	0	3.2	0	
Notional	172.6	0	17.3	0	0	2.78	0	----	----	
[ST] Split or multi-split system, [HS] ASHP, [HFT] Electricity, [CFT] Electricity										
Actual	0	1094.6	0	85.6	15.2	2.46	3.55	2.64	5	
Notional	0	997.6	0	59.8	7.2	2.78	4.63	----	----	
[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

5.2.3 *Block 15*

Project name

Steyning Grammar School - Block 15**As designed****Date:** Tue Dec 16 20:25:16 2025**Administrative information****Building Details****Address:** Shooting Field, Steyning, BN44 3RX**Certifier details****Name:** Method Consulting**Telephone number:** 01793 822044**Address:** 3 Newbridge Square, Swindon, SN1 1BY**Certification tool****Calculation engine:** Apache**Calculation engine version:** 7.0.28**Interface to calculation engine:** IES Virtual Environment**Interface to calculation engine version:** 7.0.28**BRUKL compliance module version:** v6.1.e.1**Foundation area [m²]:** 1427.1**The CO₂ emission and primary energy rates of the building must not exceed the targets**

Target CO ₂ emission rate (TER), kgCO ₂ /m ² .annum	4.17
Building CO ₂ emission rate (BER), kgCO ₂ /m ² .annum	-3.32
Target primary energy rate (TPER), kWh _{PE} /m ² .annum	43.64
Building primary energy rate (BPER), kWh _{PE} /m ² .annum	-42.28
Do the building's emission and primary energy rates exceed the targets?	BER ≤ TER BPER ≤ TPER

The performance of the building fabric and fixed building services should achieve reasonable overall standards of energy efficiency

Fabric element	U _{a-Limit}	U _{a-Calc}	U _{i-Calc}	First surface with maximum value
Walls*	0.26	0.15	0.15	0000004D:Surf[14]
Floors	0.18	0.12	0.12	0000004D:Surf[0]
Pitched roofs	0.16	-	-	No pitched roofs in building
Flat roofs	0.18	0.12	0.12	0200001F:Surf[2]
Windows** and roof windows	1.6	1.1	1.1	0000004D:Surf[1]
Rooflights***	2.2	1.1	1.1	0200001F:Surf[0]
Personnel doors^	1.6	1.2	1.6	0000004D:Surf[4]
Vehicle access & similar large doors	1.3	-	-	No vehicle access doors in building
High usage entrance doors	3	-	-	No high usage entrance doors in building

U_{a-Limit} = Limiting area-weighted average U-values [W/(m²K)]U_{i-Calc} = Calculated maximum individual element U-values [W/(m²K)]U_{a-Calc} = Calculated area-weighted average U-values [W/(m²K)]

* Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows.

** Display windows and similar glazing are excluded from the U-value check. *** Values for rooflights refer to the horizontal position.

^ For fire doors, limiting U-value is 1.8 W/m²K

NB: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.

Air permeability	Limiting standard	This building
m³/(h.m²) at 50 Pa	8	3

Building services

For details on the standard values listed below, system-specific guidance, and additional regulatory requirements, refer to the Approved Documents.

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 to 0.95

1- 2721ESG - GSHP - Hybrid Unit - NVHR

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.2	-	0	-	0.42
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.					

2- 2721ESG - Electric panel rads - Nat vent

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	1	-	0.5	-	-
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- 2721ESG - Electric panel rads - Zonal Extr Vent

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	1	-	0.5	-	-
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- 2721ESG - Electric panel rads - Nat vent (Indirect)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	1	-	0.5	-	-
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

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

Zone-level mechanical ventilation, exhaust, and terminal units

ID	System type in the Approved Documents
A	Local supply or extract ventilation units
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 balanced supply and extract ventilation system
E	Local balanced supply and extract ventilation units
F	Other local ventilation units
G	Fan assisted terminal variable air volume units
H	Fan coil units
I	Kitchen extract with the fan remote from the zone and a grease filter
NB: Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.	

Zone name	SFP [W/(l/s)]										HR efficiency	
ID of system type	A	B	C	D	E	F	G	H	I		Zone	Standard
Standard value	0.3	1.1	0.5	2.3	2	0.5	0.5	0.4	1			
00 - Block 15 - 6th Form Dining (2007)	-	-	-	-	-	0.1	-	-	-		-	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	2.3	2	0.5	0.5	0.4	1	Zone	Standard	
00 - Block 15 - Accessible Toilet 8	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 - Block 15 - Cleaners' Store 13	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 - Block 15 - Fitness Suite (1148)	-	-	-	-	-	0.1	-	-	-	-	N/A	
00 - Block 15 - Humanities (1022)	-	-	-	-	-	0.1	-	-	-	-	N/A	
00 - Block 15 - Humanities (1024)	-	-	-	-	-	0.1	-	-	-	-	N/A	
00 - Block 15 - Humanities (1025)	-	-	-	-	-	0.1	-	-	-	-	N/A	
00 - Block 15 - Humanities (1027)	-	-	-	-	-	0.1	-	-	-	-	N/A	
00 - Block 15 - Humanities (1028)	-	-	-	-	-	0.1	-	-	-	-	N/A	
00 - Block 15 - Humanities (1029)	-	-	-	-	-	0.1	-	-	-	-	N/A	
00 - Block 15 - Humanities (1145)	-	-	-	-	-	0.1	-	-	-	-	N/A	
00 - Block 15 - Humanities (1146)	-	-	-	-	-	0.1	-	-	-	-	N/A	
00 - Block 15 - Humanities (1147)	-	-	-	-	-	0.1	-	-	-	-	N/A	
00 - Block 15 - Small Group Room 1 (3037)	-	-	-	-	-	0.1	-	-	-	-	N/A	
00 - Block 15 - Small Group Room 11 (3036)	-	-	-	-	-	0.1	-	-	-	-	N/A	
00 - Block 15 - Toilet Suite	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 - Block 15 - Toilet Suite	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 - Block 15 - Toilet Suite	-	-	0.5	-	-	-	-	-	-	-	N/A	
00 - Block 15 - Toilet Suite	-	-	0.5	-	-	-	-	-	-	-	N/A	
01 - Block 15 - 6th Form Seminar (1002)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 15 - 6th Form Seminar (1003)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 15 - 6th Form Social (2008)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 15 - 6th Form Social (2009)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 15 - 6th Form Study Space (3002)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 15 - Accessible Toilet	-	-	0.5	-	-	-	-	-	-	-	N/A	
01 - Block 15 - Cleaners' Store 12	-	-	0.5	-	-	-	-	-	-	-	N/A	
01 - Block 15 - Humanities (1023)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 15 - Humanities (1030)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 15 - Humanities (1031)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 15 - Humanities (1032)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 15 - Humanities (1033)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 15 - Humanities (1034)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 15 - Humanities (1035)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 15 - Humanities (1036)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 15 - Humanities (1037)	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 15 - Staff Workroom	-	-	-	-	-	0.1	-	-	-	-	N/A	
01 - Block 15 - Toilet Suite	-	-	0.5	-	-	-	-	-	-	-	N/A	
01 - Block 15 - Toilet Suite	-	-	0.5	-	-	-	-	-	-	-	N/A	
02 - Block 15 - 6th Form Seminar (1004)	-	-	-	-	-	0.1	-	-	-	-	N/A	
02 - Block 15 - 6th Form Seminar (1006)	-	-	-	-	-	0.1	-	-	-	-	N/A	
02 - Block 15 - 6th Form Seminar (1007)	-	-	-	-	-	0.1	-	-	-	-	N/A	
02 - Block 15 - 6th Form Seminar (1007)	-	-	-	-	-	0.1	-	-	-	-	N/A	
02 - Block 15 - 6th Form Study (3003)	-	-	-	-	-	0.1	-	-	-	-	N/A	
02 - Block 15 - 6th Form Study (3004)	-	-	-	-	-	0.1	-	-	-	-	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	2.3	2	0.5	0.5	0.4	1	Zone	Standard
02 - Block 15 - Accessible Toilet	-	-	0.5	-	-	-	-	-	-	-	N/A
02 - Block 15 - Cleaners' Store 14	-	-	0.5	-	-	-	-	-	-	-	N/A
02 - Block 15 - Humanities (1026)	-	-	-	-	-	0.1	-	-	-	-	N/A
02 - Block 15 - Humanities (1038)	-	-	-	-	-	0.1	-	-	-	-	N/A
02 - Block 15 - Humanities (1039)	-	-	-	-	-	0.1	-	-	-	-	N/A
02 - Block 15 - Humanities (1040)	-	-	-	-	-	0.1	-	-	-	-	N/A
02 - Block 15 - Humanities (1041)	-	-	-	-	-	0.1	-	-	-	-	N/A
02 - Block 15 - Humanities (1042)	-	-	-	-	-	0.1	-	-	-	-	N/A
02 - Block 15 - Humanities (1043)	-	-	-	-	-	0.1	-	-	-	-	N/A
02 - Block 15 - Humanities (1044)	-	-	-	-	-	0.1	-	-	-	-	N/A
02 - Block 15 - Humanities (1045)	-	-	-	-	-	0.1	-	-	-	-	N/A
02 - Block 15 - Small Group Room 8 (3033)	-	-	-	-	-	0.1	-	-	-	-	N/A
02 - Block 15 - Staff Workroom (4002B)	-	-	-	-	-	0.1	-	-	-	-	N/A
02 - Block 15 - Toilet Suite	-	-	0.5	-	-	-	-	-	-	-	N/A
02 - Block 15 - Toilet Suite	-	-	0.5	-	-	-	-	-	-	-	N/A

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m²]
	Standard value	95	80	0.3
00 - Block 15 - 6th Form Dining (2007)		110	-	-
00 - Block 15 - 6th Form Dining Servery (2007)		110	-	-
00 - Block 15 - Accessible Toilet 8		110	-	-
00 - Block 15 - Circulation		110	-	-
00 - Block 15 - Circulation		110	-	-
00 - Block 15 - Circulation		110	-	-
00 - Block 15 - Circulation		110	-	-
00 - Block 15 - Circulation		110	-	-
00 - Block 15 - Circulation		110	-	-
00 - Block 15 - Cleaners' Store 13		110	-	-
00 - Block 15 - Fitness Suite (1148)		110	-	-
00 - Block 15 - Humanities (1022)		110	-	-
00 - Block 15 - Humanities (1024)		110	-	-
00 - Block 15 - Humanities (1025)		110	-	-
00 - Block 15 - Humanities (1027)		110	-	-
00 - Block 15 - Humanities (1028)		110	-	-
00 - Block 15 - Humanities (1029)		110	-	-
00 - Block 15 - Humanities (1145)		110	-	-
00 - Block 15 - Humanities (1146)		110	-	-
00 - Block 15 - Humanities (1147)		110	-	-
00 - Block 15 - LV Intake		110	-	-
00 - Block 15 - Office 10 (4041)		110	-	-
00 - Block 15 - Office 10/8 (4027/4025)		110	-	-
00 - Block 15 - Plant Room		110	-	-

General lighting and display lighting		General luminaire		Display light source	
Zone name		Efficacy [lm/W]		Efficacy [lm/W]	Power density [W/m²]
	Standard value	95		80	0.3
00 - Block 15 - Small Group Room 1 (3037)		110		-	-
00 - Block 15 - Small Group Room 6 (3042)		110		-	-
00 - Block 15 - Small Group Room 11 (3036)		110		-	-
00 - Block 15 - Stairway 16		110		-	-
00 - Block 15 - Stairway 17		110		-	-
00 - Block 15 - Stairway 18		110		-	-
00 - Block 15 - Teaching Resource Store 12		110		-	-
00 - Block 15 - Teaching Resources Stores 14		110		-	-
00 - Block 15 - Toilet Suite		110		-	-
00 - Block 15 - Toilet Suite		110		-	-
00 - Block 15 - Toilet Suite		110		-	-
00 - Block 15 - Toilet Suite		110		-	-
01 - Block 15 - 6th Form Seminar (1002)		110		-	-
01 - Block 15 - 6th Form Seminar (1003)		110		-	-
01 - Block 15 - 6th Form Social (2008)		110		-	-
01 - Block 15 - 6th Form Social (2009)		110		-	-
01 - Block 15 - 6th Form Study Space (3002)		110		-	-
01 - Block 15 - Accessible Toilet		110		-	-
01 - Block 15 - Circulation		110		-	-
01 - Block 15 - Circulation		110		-	-
01 - Block 15 - Circulation		110		-	-
01 - Block 15 - Circulation		110		-	-
01 - Block 15 - Circulation		110		-	-
01 - Block 15 - Circulation		110		-	-
01 - Block 15 - Circulation		110		-	-
01 - Block 15 - Circulation		110		-	-
01 - Block 15 - Cleaners' Store 12		110		-	-
01 - Block 15 - Humanities (1023)		110		-	-
01 - Block 15 - Humanities (1030)		110		-	-
01 - Block 15 - Humanities (1031)		110		-	-
01 - Block 15 - Humanities (1032)		110		-	-
01 - Block 15 - Humanities (1033)		110		-	-
01 - Block 15 - Humanities (1034)		110		-	-
01 - Block 15 - Humanities (1035)		110		-	-
01 - Block 15 - Humanities (1036)		110		-	-
01 - Block 15 - Humanities (1037)		110		-	-
01 - Block 15 - Hub Room (6065)		110		-	-
01 - Block 15 - Staff Workroom		110		-	-
01 - Block 15 - Stairway 19		110		-	-
01 - Block 15 - Stairway 20		110		-	-
01 - Block 15 - Stairway 21		110		-	-
01 - Block 15 - Teaching Resource Store 1		110		-	-
01 - Block 15 - Teaching Resource Store 4		110		-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m²]
	Standard value	95	80	0.3
01 - Block 15 - Toilet Suite		110	-	-
01 - Block 15 - Toilet Suite		110	-	-
02 - Block 15 - 6th Form Seminar (1004)		110	-	-
02 - Block 15 - 6th Form Seminar (1006)		110	-	-
02 - Block 15 - 6th Form Seminar (1007)		110	-	-
02 - Block 15 - 6th Form Seminar (1007)		110	-	-
02 - Block 15 - 6th Form Study (3003)		110	-	-
02 - Block 15 - 6th Form Study (3004)		110	-	-
02 - Block 15 - Accessible Toilet		110	-	-
02 - Block 15 - Circulation		110	-	-
02 - Block 15 - Circulation		110	-	-
02 - Block 15 - Circulation		110	-	-
02 - Block 15 - Cleaners' Store 14		110	-	-
02 - Block 15 - Cupboard		110	-	-
02 - Block 15 - Humanities (1026)		110	-	-
02 - Block 15 - Humanities (1038)		110	-	-
02 - Block 15 - Humanities (1039)		110	-	-
02 - Block 15 - Humanities (1040)		110	-	-
02 - Block 15 - Humanities (1041)		110	-	-
02 - Block 15 - Humanities (1042)		110	-	-
02 - Block 15 - Humanities (1043)		110	-	-
02 - Block 15 - Humanities (1044)		110	-	-
02 - Block 15 - Humanities (1045)		110	-	-
02 - Block 15 - Office (4031)		110	-	-
02 - Block 15 - Office (4040)		110	-	-
02 - Block 15 - Small Group Room 8 (3033)		110	-	-
02 - Block 15 - Staff Workroom (4002B)		110	-	-
02 - Block 15 - Stairway 22		110	-	-
02 - Block 15 - Stairway 23		110	-	-
02 - Block 15 - Stairway 24		110	-	-
02 - Block 15 - Teaching Resource Store 6		110	-	-
02 - Block 15 - Toilet Suite		110	-	-
02 - Block 15 - Toilet Suite		110	-	-
03 - Block 15 - Stairway		110	-	-

The spaces in the building should have appropriate passive control measures to limit solar gains in summer

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
00 - Block 15 - 6th Form Dining (2007)	NO (-41.7%)	YES
00 - Block 15 - Fitness Suite (1148)	NO (-29.5%)	YES
00 - Block 15 - Humanities (1022)	NO (-45.9%)	YES
00 - Block 15 - Humanities (1024)	NO (-46.3%)	YES
00 - Block 15 - Humanities (1025)	NO (-45.9%)	YES
00 - Block 15 - Humanities (1027)	NO (-47.5%)	YES

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
00 - Block 15 - Humanities (1028)	NO (-48.6%)	YES
00 - Block 15 - Humanities (1029)	NO (-49.2%)	YES
00 - Block 15 - Humanities (1145)	NO (-67.2%)	YES
00 - Block 15 - Humanities (1146)	NO (-35.2%)	YES
00 - Block 15 - Humanities (1147)	NO (-41.4%)	YES
00 - Block 15 - Office 10 (4041)	NO (-60.9%)	YES
00 - Block 15 - Office 10/8 (4027/4025)	NO (-42.7%)	YES
00 - Block 15 - Small Group Room 1 (3037)	N/A	N/A
00 - Block 15 - Small Group Room 6 (3042)	NO (-61.1%)	YES
00 - Block 15 - Small Group Room 11 (3036)	N/A	N/A
01 - Block 15 - 6th Form Seminar (1002)	NO (-43.7%)	YES
01 - Block 15 - 6th Form Seminar (1003)	NO (-43.7%)	YES
01 - Block 15 - 6th Form Social (2008)	NO (-59.7%)	YES
01 - Block 15 - 6th Form Social (2009)	NO (-40.5%)	YES
01 - Block 15 - 6th Form Study Space (3002)	NO (-46.2%)	YES
01 - Block 15 - Humanities (1023)	NO (-45.7%)	YES
01 - Block 15 - Humanities (1030)	NO (-72.9%)	YES
01 - Block 15 - Humanities (1031)	NO (-45.7%)	YES
01 - Block 15 - Humanities (1032)	NO (-45.6%)	YES
01 - Block 15 - Humanities (1033)	NO (-45.6%)	YES
01 - Block 15 - Humanities (1034)	NO (-48.5%)	YES
01 - Block 15 - Humanities (1035)	NO (-48.5%)	YES
01 - Block 15 - Humanities (1036)	NO (-48.5%)	YES
01 - Block 15 - Humanities (1037)	NO (-49.1%)	YES
01 - Block 15 - Staff Workroom	NO (-47.7%)	YES
02 - Block 15 - 6th Form Seminar (1004)	NO (-43.7%)	YES
02 - Block 15 - 6th Form Seminar (1006)	NO (-72.8%)	YES
02 - Block 15 - 6th Form Seminar (1007)	NO (-40.4%)	YES
02 - Block 15 - 6th Form Seminar (1007)	NO (-40.4%)	YES
02 - Block 15 - 6th Form Study (3003)	NO (-43.7%)	YES
02 - Block 15 - 6th Form Study (3004)	NO (-46.5%)	YES
02 - Block 15 - Humanities (1026)	NO (-45.5%)	YES
02 - Block 15 - Humanities (1038)	NO (-72.6%)	YES
02 - Block 15 - Humanities (1039)	NO (-45.5%)	YES
02 - Block 15 - Humanities (1040)	NO (-45.5%)	YES
02 - Block 15 - Humanities (1041)	NO (-45.5%)	YES
02 - Block 15 - Humanities (1042)	NO (-48.8%)	YES
02 - Block 15 - Humanities (1043)	NO (-48.5%)	YES
02 - Block 15 - Humanities (1044)	NO (-48.5%)	YES
02 - Block 15 - Humanities (1045)	NO (-49.1%)	YES
02 - Block 15 - Office (4031)	NO (-60.5%)	YES
02 - Block 15 - Office (4040)	NO (-45.6%)	YES
02 - Block 15 - Small Group Room 8 (3033)	NO (-65.1%)	NO
02 - Block 15 - Staff Workroom (4002B)	NO (-24.7%)	YES

Regulation 25A: Consideration of high efficiency 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
Floor area [m ²]	4250.6	4250.6
External area [m ²]	5091.8	5091.8
Weather	SOU	SOU
Infiltration [m ³ /hm ² @ 50Pa]	3	3
Average conductance [W/K]	1279.32	1969.26
Average U-value [W/m ² K]	0.25	0.39
Alpha value* [%]	26.14	10

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

Building Use

% Area Building Type

Retail/Financial and Professional Services
 Restaurants and Cafes/Drinking Establishments/Takeaways
 Offices and Workshop Businesses
 General Industrial and Special Industrial Groups
 Storage or Distribution
 Hotels
 Residential Institutions: Hospitals and Care Homes
 Residential Institutions: Residential Schools

2 Residential Institutions: Universities and Colleges

Secure Residential Institutions
 Residential Spaces
 Non-residential Institutions: Community/Day Centre
 Non-residential Institutions: Libraries, Museums, and Galleries

98 Non-residential Institutions: Education

Non-residential Institutions: Primary Health Care Building
 Non-residential Institutions: Crown and County Courts
 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	8.01	12.56
Cooling	0	0
Auxiliary	1.55	2.8
Lighting	5.55	7.27
Hot water	9.94	9.28
Equipment*	25.22	25.22
TOTAL**	25.04	31.91

* 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	55	2.9
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0
<i>Displaced electricity</i>	55	2.9

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	50.93	106.76
Primary energy [kWh _{PE} /m ²]	-42.28	43.64
Total emissions [kg/m ²]	-3.32	4.17

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] Central heating using water: radiators, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity									
Actual	26.5	0	8.3	0	5.3	0.89	0	1	0
Notional	46.8	0	9.2	0	4.4	1.41	0	----	----
[ST] Central heating using water: radiators, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity									
Actual	31.5	0	9.8	0	2.5	0.89	0	1	0
Notional	51.8	0	10.2	0	1.2	1.41	0	----	----
[ST] Other local room heater - fanned, [HS] GSHP/WSHP, [HFT] Electricity, [CFT] Electricity									
Actual	62.2	0	6.7	0	0.7	2.56	0	3.2	0
Notional	140.2	0	14	0	3.5	2.78	0	----	----
[ST] Central heating using water: radiators, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity									
Actual	68.8	0	21.4	0	1.8	0.89	0	1	0
Notional	62	0	12.2	0	0.9	1.41	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

5.2.4 Block 16

Project name

Steyning Grammar School - Block 16**As designed****Date:** Wed Dec 17 10:44:44 2025**Administrative information****Building Details****Address:** Shooting Field, Steyning, BN44 3RX**Certifier details****Name:** Method Consulting**Telephone number:** 01793 822044**Address:** 3 Newbridge Square, Swindon, SN1 1BY**Certification tool****Calculation engine:** Apache**Calculation engine version:** 7.0.28**Interface to calculation engine:** IES Virtual Environment**Interface to calculation engine version:** 7.0.28**BRUKL compliance module version:** v6.1.e.1**Foundation area [m²]:** 2216.22**The CO₂ emission and primary energy rates of the building must not exceed the targets**

Target CO ₂ emission rate (TER), kgCO ₂ /m ² .annum	1.74
Building CO ₂ emission rate (BER), kgCO ₂ /m ² .annum	-2.44
Target primary energy rate (TPER), kWh _{PE} /m ² .annum	16.76
Building primary energy rate (BPER), kWh _{PE} /m ² .annum	-32.32
Do the building's emission and primary energy rates exceed the targets?	BER ≤ TER BPER ≤ TPER

The performance of the building fabric and fixed building services should achieve reasonable overall standards of energy efficiency

Fabric element	U _{a-Limit}	U _{a-Calc}	U _{i-Calc}	First surface with maximum value
Walls*	0.26	0.15	0.15	BL000009:Surf[1]
Floors	0.18	0.12	0.12	BL000009:Surf[0]
Pitched roofs	0.16	-	-	No pitched roofs in building
Flat roofs	0.18	0.12	0.12	BL000009:Surf[9]
Windows** and roof windows	1.6	1.1	1.1	BL00000C:Surf[3]
Rooflights***	2.2	-	-	No roof lights in building
Personnel doors^	1.6	1.37	1.6	BL000009:Surf[2]
Vehicle access & similar large doors	1.3	-	-	No vehicle access doors in building
High usage entrance doors	3	-	-	No high usage entrance doors in building

U_{a-Limit} = Limiting area-weighted average U-values [W/(m²K)]U_{i-Calc} = Calculated maximum individual element U-values [W/(m²K)]U_{a-Calc} = Calculated area-weighted average U-values [W/(m²K)]

* Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows.

** Display windows and similar glazing are excluded from the U-value check.

*** Values for rooflights refer to the horizontal position.

^ For fire doors, limiting U-value is 1.8 W/m²K

NB: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.

Air permeability	Limiting standard	This building
m³/(h.m²) at 50 Pa	8	3

Building services

For details on the standard values listed below, system-specific guidance, and additional regulatory requirements, refer to the Approved Documents.

Whole building lighting automatic monitoring & targeting with alarms for out-of-range values	YES
Whole building electric power factor achieved by power factor correction	>0.95

1- 2721ESG - GSHP - Heating coil - MVHR

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.2	-	0	1.5	0.83
Standard value	2.5*	N/A	N/A	1.5^	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.					
^ Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.					

2- 2721ESG - GSHP - Heating coil - MVHR (Indirect)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	3.2	-	0	1.5	0.83
Standard value	2.5*	N/A	N/A	1.5^	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.					
^ Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.					

3- 2721ESG - Electric panel rads - Zonal Extr Vent

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	1	-	0.5	-	-
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- 2721ESG - Electric panel rads - Nat vent

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	1	-	0.5	-	-
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- 2721ESG - Electric panel rads - Nat vent (Indirect)

	Heating efficiency	Cooling efficiency	Radiant efficiency	SFP [W/(l/s)]	HR efficiency
This system	1	-	0.5	-	-
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

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

Zone-level mechanical ventilation, exhaust, and terminal units

ID	System type in the Approved Documents
A	Local supply or extract ventilation units
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 balanced supply and extract ventilation system
E	Local balanced supply and extract ventilation units
F	Other local ventilation units
G	Fan assisted terminal variable air volume units
H	Fan coil units
I	Kitchen extract with the fan remote from the zone and a grease filter
NB: Limiting SFP may be increased by the amounts specified in the Approved Documents if the installation includes particular components.	

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	2.3	2	0.5	0.5	0.4	1		Zone	Standard
00 - Block 16 - Accessible Toilet 3	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 16 - Accessible Toilet 6	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 16 - Accessible Toilet 5	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 16 - Accessible Toilet 4	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 16 - Toilet Suite (2P)	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 16 - Toilet Suite (2P)	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 16 - Hygiene Room (6018)	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 16 - Accessible Toilet 1 (6012)	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 16 - Toilet Suite (2P)	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 16 - Toilet Suite (2P)	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 16 - Cleaners' Store 5	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 16 - Accessible Toilet 2 (6011)	-	-	0.5	-	-	-	-	-	-	-	-	N/A
00 - Block 16 - Cleaner's Store	-	-	0.5	-	-	-	-	-	-	-	-	N/A

General lighting and display lighting	General luminaire	Display light source	
Zone name	Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m²]
Standard value	95	80	0.3
00 - Block 16 - Sports Hall (2003)	110	-	-
00 - Block 16 - Activity Studio (2004)	110	-	-
00 - Block 16 - Sports Hall (2002)	110	-	-
00 - Block 16 - Equipment Store (5051)	110	-	-
00 - Block 16 - Equipment Store (5054)	110	-	-
00 - Block 16 - Store (5053)	110	-	-
00 - Block 16 - Hub Room 4 (6066)	110	-	-
00 - Block 16 - Equipment Store (5052)	110	-	-
00 - Block 16 - Accessible Toilet 3	110	-	-
00 - Block 16 - Accessible Toilet 6	110	-	-
00 - Block 16 - Accessible Toilet 5	110	-	-
00 - Block 16 - Accessible Toilet 4	110	-	-

General lighting and display lighting		General luminaire	Display light source	
Zone name		Efficacy [lm/W]	Efficacy [lm/W]	Power density [W/m²]
	Standard value	95	80	0.3
00 - Block 16 - Circulation		110	-	-
00 - Block 16 - Toilet Suite (2P)		110	-	-
00 - Block 16 - Toilet Suite (2P)		110	-	-
00 - Block 16 - Hygiene Room (6018)		110	-	-
00 - Block 16 - Accessible Toilet 1 (6012)		110	-	-
00 - Block 16 - Equipment Store (5051A)		110	-	-
00 - Block 16 - Office 6 (4037)		110	-	-
00 - Block 16 - Plant Room 1 (6069C)		110	-	-
00 - Block 16 - Reception (4006)		110	-	-
00 - Block 16 - Toilet Suite (2P)		110	-	-
00 - Block 16 - Toilet Suite (2P)		110	-	-
00 - Block 16 - Cleaners' Store 5		110	-	-
00 - Block 16 - Equipment Store (5117)		110	-	-
00 - Block 16 - Cupboard		110	-	-
00 - Block 16 - Circulation		110	-	-
00 - Block 16 - Accessible Toilet 2 (6011)		110	-	-
00 - Block 16 - Cleaner's Store		110	-	-
00 - Block 16 - Circulation		110	-	-
00 - Block 16 - Changing (6007)		110	-	-
00 - Block 16 - Changing (showers) (6007)		110	-	-
00 - Block 16 - Changing (6008)		110	-	-
00 - Block 16 - Changing (showers) (6008)		110	-	-
00 - Block 16 - Changing (6009)		110	-	-
00 - Block 16 - Changing (showers) (6009)		110	-	-
00 - Block 16 - Changing (6010)		110	-	-
00 - Block 16 - Changing (showers) (6010)		110	-	-

The spaces in the building should have appropriate passive control measures to limit solar gains in summer

Zone	Solar gain limit exceeded? (%)	Internal blinds used?
00 - Block 16 - Sports Hall (2003)	N/A	N/A
00 - Block 16 - Activity Studio (2004)	NO (-20.1%)	YES
00 - Block 16 - Sports Hall (2002)	N/A	N/A
00 - Block 16 - Office 6 (4037)	NO (-65.9%)	YES
00 - Block 16 - Changing (6007)	N/A	N/A
00 - Block 16 - Changing (6008)	N/A	N/A
00 - Block 16 - Changing (6009)	N/A	N/A
00 - Block 16 - Changing (6010)	N/A	N/A

Regulation 25A: Consideration of high efficiency 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
Floor area [m ²]	2216.2	2216.2
External area [m ²]	6197.2	6197.2
Weather	SOU	SOU
Infiltration [m ³ /hm ² @ 50Pa]	3	4
Average conductance [W/K]	900.69	1688.94
Average U-value [W/m ² K]	0.15	0.27
Alpha value* [%]	25.63	10

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

Building Use

% Area Building Type

Retail/Financial and Professional Services
 Restaurants and Cafes/Drinking Establishments/Takeaways
 Offices and Workshop Businesses
 General Industrial and Special Industrial Groups
 Storage or Distribution
 Hotels
 Residential Institutions: Hospitals and Care Homes
 Residential Institutions: Residential Schools
 Residential Institutions: Universities and Colleges
 Secure Residential Institutions
 Residential Spaces
 Non-residential Institutions: Community/Day Centre
 Non-residential Institutions: Libraries, Museums, and Galleries
100 Non-residential Institutions: Education
 Non-residential Institutions: Primary Health Care Building
 Non-residential Institutions: Crown and County Courts
 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	7.41	10.04
Cooling	0	0
Auxiliary	5.37	3.48
Lighting	11.23	4.89
Hot water	8.31	7.7
Equipment*	12.8	12.8
TOTAL**	32.32	26.11

* 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	55	15.19
Wind turbines	0	0
CHP generators	0	0
Solar thermal systems	0	0
<i>Displaced electricity</i>	<i>55</i>	<i>15.19</i>

Energy & CO₂ Emissions Summary

	Actual	Notional
Heating + cooling demand [MJ/m ²]	48.77	86.33
Primary energy [kWh _{PE} /m ²]	-32.32	16.76
Total emissions [kg/m ²]	-2.44	1.74

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] Central heating using water: radiators, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity										
Actual	36.3	0	11.3	0	2.5	0.89	0	1	0	
Notional	55.8	0	11	0	1.2	1.41	0	----	----	
[ST] Central heating using air distribution, [HS] GSHP/WSHP, [HFT] Electricity, [CFT] Electricity										
Actual	39.8	0	3.9	0	5.9	2.87	0	3.2	0	
Notional	86.4	0	8.6	0	3.6	2.78	0	----	----	
[ST] Central heating using water: radiators, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity										
Actual	187.4	0	58.3	0	1.4	0.89	0	1	0	
Notional	143.2	0	28.2	0	0.6	1.41	0	----	----	
[ST] Central heating using water: radiators, [HS] Direct or storage electric heater, [HFT] Electricity, [CFT] Electricity										
Actual	145	0	45.1	0	5.5	0.89	0	1	0	
Notional	159.3	0	31.4	0	4.6	1.41	0	----	----	
[ST] Central heating using air distribution, [HS] GSHP/WSHP, [HFT] Electricity, [CFT] Electricity										
Actual	81.1	0	7.9	0	4.8	2.87	0	3.2	0	
Notional	72.3	0	7.2	0	5.2	2.78	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



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