

Business Energy Upgrades Scheme Technical Assistance Report

Company Name
Building Name/Address

03 June 2026

Version 1.0

Table of Contents

1	Outline of Report	2
2	Executive Summary	3
3	Analysis	6
4	Detailed Analysis Results	9
4.1	Renewable Heat – <i>Selected Technology</i>	9
4.2	Energy Efficiency – <i>Selected Technology</i>	9
4.3	Controls– <i>Selected Technology</i>	9
5	Further Intervention Analysis	9
5.1	Lighting	9
6	Appendix	10
6.1	Scheme Design Drawings.....	10
6.2	Scheme Outline Specification	10
6.3	Calculations	10
6.4	Schedule of Order of Magnitude Costs and potential paybacks.....	10

Version	Date	Details
V0	03/06/2026	First published
		•

INSTRUCTIONS:

Appointed consultant shall update all points in red and replace all instructive text with appropriate project specific detail.

A word version of this report can be requested by emailing businessupgrades@seai.ie

1 Outline of Report

Notice

This report and accompanying appendices have been compiled by **Selected Consultant** as part of their engagement by **Applicant** to provide a roadmap to a more sustainable building.

SEAI as part funders of this work under the Design Assistance measure of Business Energy Upgrades Scheme created this reporting template as evidence from the associated consultant that SEAI's minimum requirements with regard to this funding have been met. The applicant for this scheme should ensure that the design package agreed and contracted with their consultant is not solely based on SEAI minimum requirements for payment of grant but must satisfy their overall requirements.

It should be noted that SEAI bear no responsibility to ensure any or all of the information contained in this report is true or appropriate for the particular building in question. SEAI also bear no responsibility for quality of this analysis, the resultant design package or any works completed on the foot of the information therein on behalf of the Applicant.

2 Executive Summary

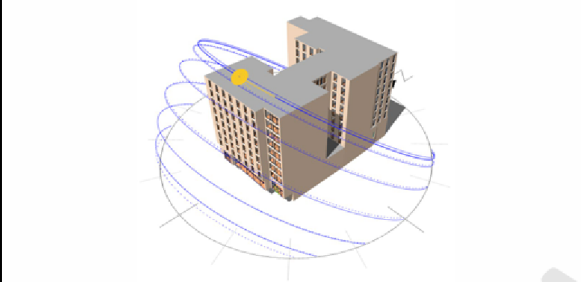
This report provides an overall review of potential options for an applicant to improve the energy efficiency and carbon footprint of their building.

Brief outline of the modelling tools utilised for the works.

Brief outline of the modelling process

Image of Model and Baseline inputs and final recommendations (example below).

Table A1 – Assumed Baseline Fabric and HVAC Performance Values

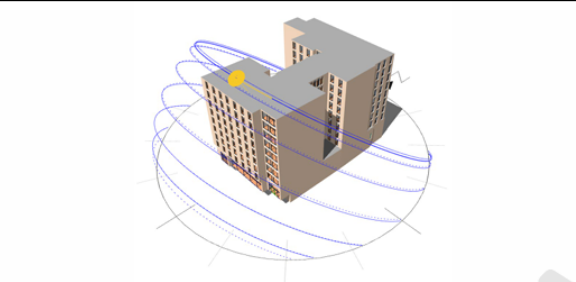


Building Fabric -			
Element	U-Value W/m ² K	Glazing Performance Details	
External Wall	0.45	Light Transmittance	
Roof	0.25	Glazing	
Ground Floor	0.45	Solar Transmittance (g-Value)	
Glazing (Centre-pane)	3.28	Glazing	
Air Permeability	Existing	10.0	m ³ /hr.m ² @50Pa

Heating System			
Heating – Gas Boiler			
Fuel Type	Natural Gas	Seasonal Efficiency	
DHW Return Pump Efficiency	0.33	Distribution System Efficiency	
Ventilation Heat Recovery			
AHU-BED	No	-	
AHU-LOUNGE	Yes	Run Around Coil	
AHU-KITCH	No	-	

Hot Water System -			
HWS - Gas Boiler DHW system			
Fuel Type	Natural Gas	Seasonal Efficiency	
DHW Return Pump Efficiency	0.33	Distribution System Efficiency	
Hot Water System Controls			
Hot Water Storage		Yes	Factory Insulated
Secondary Circulation		Yes	Time Control on Secondary Circ.
			25mm
			No
HVAC System -			
Details		Air-Handling Units Specific Fan Power	
Natural Vent c/w Rads			
Mechanical Vent. c/w FCU's (AHU-BED)		4.0 W/l.s Total, (2.0 W/l.s Supply, 2.0 W/l.s Exhaust)	
Mechanical Vent. c/w Rads (AHU-LOUNGE)		4.0 W/l.s Total, (2.0 W/l.s Supply, 2.0 W/l.s Exhaust)	
Mechanical Vent. c/w Rads (AHU-KITCH)		4.0 W/l.s Total, (2.0 W/l.s Supply, 2.0 W/l.s Exhaust)	
Extract Only - Toilets & Showers			
Extract Ventilation (Ex)		Extract Fan Specific Fan Power (W/l.s)	
		1.0	
Lighting - Existing			
Space Type	Fitting	Daylight Control	Parasitic Load (W/m ²)
Circulation	FLU	No	-
Store	FLU	No	-
Toilet	FLU	No	-
Reception	FLU	No	-
Lounge	FLU	No	-
Plant	FLU	No	-
Changing	FLU	No	-
Kitchen	FLU	No	-
Ensuite Bedroom	FLU	No	-
Office	FLU	No	-
Server	FLU	No	-
Cold Store	FLU	No	-

Table A2 – Recommended Fabric and HVAC Performance Values



Building Fabric -			
Element	U-Value W/m ² K	Glazing Performance Details	
External Wall	0.21	Light Transmittance	
Roof	0.16	Glazing	
Ground Floor	0.45	Solar Transmittance (g-Value)	
Glazing (Centre-pane)	1.20	Glazing	
Air Permeability	Existing	10.0	m ³ /hr.m ² @50Pa

Heating System			
Heating – ASHP			
Fuel Type	Grid Electricity	Seasonal Efficiency	
DHW Return Pump Efficiency	0.33	Distribution System Efficiency	
Ventilation Heat Recovery			
AHU-BED	Yes	Plate Heat Exchanger	77%
AHU-LOUNGE	Yes	Plate Heat Exchanger	77%
AHU-KITCH	No	-	-

Hot Water System -			
HWS - ASHP DHW system			
Fuel Type	Grid Electricity	Seasonal Efficiency	
DHW Return Pump Efficiency	0.33	Distribution System Efficiency	
Hot Water System Controls			
Hot Water Storage		Yes	Factory Insulated
Secondary Circulation		Yes	Time Control on Secondary Circ.
			25mm
			No
HVAC System -			
Details		Air-Handling Units Specific Fan Power	
Natural Vent c/w Rads			
Mechanical Vent. c/w FCU's (AHU-BED)		1.81 W/l.s Total, (1.0 W/l.s Supply, 0.81 W/l.s Exhaust)	
Mechanical Vent. c/w Rads (AHU-LOUNGE)		1.81 W/l.s Total, (1.0 W/l.s Supply, 0.81 W/l.s Exhaust)	
Mechanical Vent. c/w Rads (AHU-KITCH)		1.81 W/l.s Total, (1.0 W/l.s Supply, 0.81 W/l.s Exhaust)	
Extract Only - Toilets & Showers			
Extract Ventilation (Ex)		Extract Fan Specific Fan Power (W/l.s)	
		0.3	
Lighting - Existing			
Space Type	Fitting	Daylight Control	Parasitic Load (W/m ²)
Circulation	LED	No	-
Store	LED	No	-
Toilet	LED	No	-
Reception	LED	No	-
Lounge	LED	No	-
Plant	LED	No	-
Changing	LED	No	-
Kitchen	LED	No	-
Ensuite Bedroom	LED	No	-
Office	LED	No	-
Server	LED	No	-
Cold Store	LED	No	-

In line with SEAI guidelines for the Design Assistance measure and in order to provide a robust basis for all details provided, we (**consultant**) have used a certified modelling tool as outlined within the Contractor Information Form associated with this measure.

Following a survey of the site this modelling has been completed to provide an accurate assessment of the heating and cooling (where relevant) of the building in question. This model also served as an accurate base line for the impact of interventions as part of our detailed analysis or options.

Schedule of Interventions

The table below provides a summary of all elements and associated interventions for same along with BER impact to achieve A3. The impact of all options below were tested. Details of the impact of these interventions are outlined in later sections but those most suitable to achieve the required target are outlined below.

Update Options and Sample Table (min. 8no.)

- Option 1 - Air Permeability
- Option 2 - Lighting
- Option 3 - Air Handling Units
- Option 4 - Heating & Cooling Systems – New Central Plant
- Option 5 - Heating & Cooling Systems – Local Plant
- Option 6 – Monitoring and Targeting HVAC systems
- Option 7 – DHW
- Option 8 – PV
- Option 9 - Fabric

Sample Table

Option	Results				
	Primary Energy kWh/m ² .yr	BER	BER Grade	CO ₂ Emissions kgCO ₂ /m ² .yr	CO ₂ Emissions Indicator
Existing	201.45	1.39	C3	29.30	1.35
Option 1	196.92	1.35	C3	28.47	1.31
Option 2	155.13	1.07	C1	23.70	1.09
Option 3	132.30	0.91	B3	20.47	0.94
Option 4	103.59	0.71	B2	14.39	0.66
Option 5	92.10	0.63	B1	12.92	0.59
Option 6	89.85	0.62	B1	12.63	0.58
Option 7	76.92	0.53	B1	9.85	0.45
Option 8	70.82	0.49	A3	9.07	0.42

Selected measures: This should clearly outline the findings around the 3 elements selected within the application of Design Assistance in Business Energy Upgrades Scheme.

Heating Decarbonisation	<i>Input Selection from Application</i>
Energy Efficiency	<i>Input Selection from Application</i>
Controls	<i>Input Selection from Application</i>

Update Table

Selection		Results				
		Primary Energy kWh/m ² .yr	BER	BER Grade	KgCO ₂ /m ² .yr	CO ₂ Emissions Indicator
Heating Decarbonisation	<i>Selection</i>					
Energy Efficiency	<i>Selection</i>					

Controls	<i>Selection</i>					
----------	------------------	--	--	--	--	--

Selections: Short paragraph on resultant impact “Based on the chosen selection the building will achieve an improved estimated BER from xxx to xxx. with estimated impact as outlined below. (Table as per above)

If it is found there is a fundamental reason why the initial selection is unattractive/unviable for whatever reason this shall be highlighted here and alternative selection used in scheme design (following approval from the client.)

Fabric Specific Note: Note should be provided around the information found under the fabric analysis to summarise the benefit and viability of this intervention.

3 Analysis

Fabric/Air Permeability

Using the outlined software the existing building fabric was assessed. Following a review of same the fabric was upgraded to the 2008 Building Regulations Levels or those required due to specific planning instructions for the particular building.

A summary of results is outlined below.

System: Fabric			Impact			
	Existing	Upgrade	kWhrs	% Reductions	Kg/CO ₂	% Reduction
External Wall (U Value)						
Roof (U Value)						
Ground Floor (U Value)						
Glazing (U Value)						
Glazing (Light Transmittance)						
Glazing (g Value)						
Floor (U Value)						

Paragraph of outlined results.

Example of introductory comments.. "From an analysis of the existing and potential upgrading and their resulting impact the existing fabric levels are reasonable/merit upgrading. The commercial viability of this intervention would need to be assessed considering the potentially significant capital costs against annual anticipated savings. Based on high level budgets these works would have the following paybacksxxxx. For detail on financial are contained within the order of magnitude costs accompanying this report. Based on individual impacts outlined the most cost efficient option would be The next..... The least etc. "

-This section would need to be considered in conjunction with improved impact of efficiency of heat pump operation

Heating (Central and Local)

The following aspects of the heating system were reviewed on site and where interventions were possible anticipated benefits of interventions are outlined below.

System: Heating			Impact	
	Existing	Upgrade	kWhrs	Kg/CO ₂
Plant	Boiler (Gas)	Air to Water HP		
Pumps				
Controls				
Insulation				

Brief paragraph of outlined results :

This should note the potential impact of the individual elements and the recommendation around same. Any element which forms part of the scheme design should be noted as well as one which was noted as a viable future option to obtain the required target.

Cooling (Central and Local)

The following aspects of the cooling system were reviewed on site and where interventions were possible anticipated benefits of interventions are outlined below.

System: Cooling			Impact	
	Existing	Upgrade	kWhrs	Kg/CO ₂
Plant				
Pumps				
Controls				
Insulation				

Brief paragraph of outlined results. :

This should note the potential impact of the individual elements and the recommendation around same. Any element which forms part of the scheme design should be noted as well as one which was noted as a viable future option to obtain the required target.

Ventilation (Central and Local)

The following aspects of the ventilation system were reviewed on site and where interventions were possible anticipated benefits of interventions are outlined below.

System: Ventilation			Impact	
	Existing	Upgrade	kWhrs	Kg/CO ₂
Plant				
Recovery				
Fans				
Controls				
Insulation				

Brief paragraph of outlined results. :

This should note the potential impact of the individual elements and the recommendation around same. Any element which forms part of the scheme design should be noted as well as one which was noted as a viable future option to obtain the required target.

Hot Water

The following aspects of the hot water system were reviewed on site and where interventions were possible anticipated benefits of interventions are outlined below.

System: Hot Water			Impact	
	Existing	Upgrade	kWhrs	Kg/CO ₂
Plant Source				
Insulation Storage				
Insulation Distribution				
Controls				
Pumps				

Brief paragraph of outlined results. :

This should note the potential impact of the individual elements and the recommendation around same. Any element which forms part of the scheme design should be noted as well as one which was noted as a viable future option to obtain the required target.

Water Services (Cold/Mains Water)

The following aspects of the heating system were reviewed on site and where interventions were possible anticipated benefits of interventions are outlined below.

System: Water Services	Impact			
	Existing	Upgrade	kWhrs	Kg/CO ₂
Pumps				
Controls				

Brief paragraph of outlined results. :

This should note the potential impact of the individual elements and the recommendation around same. Any element which forms part of the scheme design should be noted as well as one which was noted as a viable future option to obtain the required target. If it is not suitable this should be summarised

Building Management System

The following aspects of the controls were reviewed on site and where interventions were possible anticipated benefits of interventions are outlined below.

Brief paragraph of outlined results. :

This should note the potential impact of the individual elements and the recommendation around same. Any element which forms part of the scheme design should be noted as well as one which was noted as a viable future option to obtain the required target.

System: BMS	Central			
	Existing	Upgrade	kWhrs	Kg/CO ₂
Heating				
Cooling				
Ventilation				
Water Services				
Lighting				
Scheduling				
Optimisation				
Etc.				

Lighting

The following aspects of the lighting installation system were reviewed on site and where interventions were possible anticipated benefits of interventions are outlined below.

System: Lighting	Central			
	Existing	Upgrade	kWhrs	Kg/CO ₂
Fittings				
Controls				

Brief paragraph of outlined results. :

This should note the potential impact of the individual elements and the recommendation around same. Any element which forms part of the scheme design should be noted as well as one which was noted as a viable future option to obtain the required target.

4 Detailed Analysis Results

Each section below outlines the results of detailed analysis of proposed intervention under each of the selections. This section should summarise the detailed outline of each of these sections and should refer to the relevant back up documentation in each case. This section or any part of this document does not replace the standard scheme design package to be produced as part of this measures.

4.1 Heating Decarbonisation – Selected Technology

- *Sizing – Summary of detailed calculations which shall include an outline of all assumptions and provide details of output from model used.*
- *Implementation /Phasing Disruption– This shall clearly outline the works themselves, phasing of same and potential disruption.*
- *Costings*

4.2 Energy Efficiency – Selected Technology

- *Sizing – Summary of detailed calculations which shall include an outline of all assumptions and provide details of output from model used.*
- *Implementation /Phasing Disruption– This shall clearly outline the works themselves, phasing of same and potential disruption.*
- *Costings*

4.3 Controls– Selected Technology

- *Sizing – Summary of detailed calculations which shall include an outline of all assumptions and provide details of output from model used.*
- *Implementation /Phasing Disruption– This shall clearly outline the works themselves, phasing of same and potential disruption.*
- *Costings*

5 Further Intervention Analysis

This section includes a brief analysis of findings from remaining recommended future interventions with a suggested sequences. Where options are a not viable the basis of same should be noted. A fabric and air permeability should be included in all reports.

e.g. “The following future interventions were reviewed and deemed viable.....”

5.1 Lighting

- *Sizing – Summary of detailed calculations which shall include an outline of all assumptions and provide details of output from model used.*
- *Implementation /Phasing Disruption– This shall clearly outline the works themselves, phasing of same and potential disruption.*
- *Costings*

6 Appendix

6.1 Scheme Design Drawings

- *Single line drawings (Autocad file and pdf.) with all plant and distribution sizing included and potential builders works (e.g plinths, opes etc.)*

6.2 Scheme Outline Package

- *Outline specification document of all aspects of the works including minimum standards and sequencing and potential required network upgrade requirements.*
- *BMS Narrative and points list*
- *Equipment Schedule (including sizing, minimum technical standards etc.)*

6.3 Calculations

- *Clear input/output of modelling as well as excels detailing the sizing of all plant and distribution and controls.*

6.4 Schedule of Order of Magnitude Costs (including break down) and potential paybacks (this should include all options to clarify basis of prioritisation or discounting of same.)

w: www.seai.ie

e: info@seai.ie

t: 01 8082100

