

Display Energy Certificates (DEC)

User Guide to the Calculation Tool

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June 2023

Sustainable Energy Authority of Ireland

SEAI is Ireland's national energy authority investing in, and delivering, appropriate, effective and sustainable solutions to help Ireland's transition to a clean energy future. We work with the public, businesses, communities and the Government to achieve this, through expertise, funding, educational programmes, policy advice, research and the development of new technologies.

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Summary

This user guide describes the calculation tool for the calculation of a display energy certificate (DEC). This is the Irish official procedure for calculating and assessing the energy performance within public buildings.

The procedure consists of step-by-step calculations within a series of individual modules set out in the form of an online workbook. The individual modules contain equations or algorithms representing the relationships between various factors which contribute to annual energy performance benchmarks and correction factors for the operational building energy rating within the building.

The calculation framework draws heavily on the calculation procedures and tabulated data of the UK methodology for Display Energy Certificates through the cooperation of the UK Authorities (Department of Communities and Local Government).

The procedure and software will be used to generate DEC labels as required under the Energy Performance of Buildings Directive (EPBD).

This provision will apply to the following:

“Public Body” building with Total Useful Floor Area (TUFA) > 250m² and frequently visited by the public.

Other buildings TUFA > 500m² and frequently visited by the public.

A DEC shall be displayed in a prominent place clearly visible to members of the public in the large building to which it relates.

A DEC assessment can only be carried out by a registered DEC assessor.

To register as an assessor, an individual must:

- Be a registered non-domestic BER Assessor
- Attend the DEC workshop for large public buildings
- Complete the application form
- Submit the form to SEAI

Change log	
Version	Changes from previous version
February 2013	First version
June 2023	<ul style="list-style-type: none"> • Text format changed and headings added to make document easier to read • Screenshots updated to match the current DEC interface • Building areas updated to 250m² for public and 500m² for private sector buildings needing DEC's • Additional screenshots added to help assessors identify causes of errors • Page 10: "During the DEC system initiation period a measurement period of 365 +/- 90 days was allowed for Non-Metered fuels, this no longer applies. This field is an information only field now" • Page 15 text added about district heating • Section 6 new, how to upload • Section 7.2 new guidance on advisory report generation • Appendix 1 added, relevant information from technical bulletins and a recent helpdesk query. • Appendix 1 flow chart added

Introduction

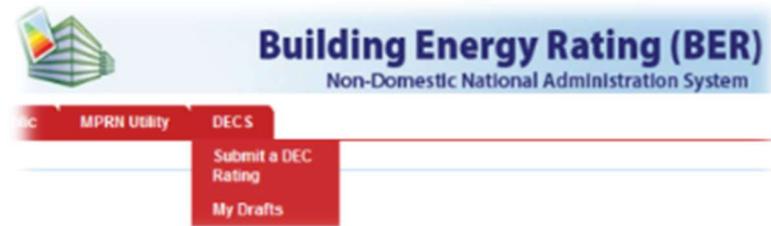
The calculation is based on the operational energy use within the building considering a range of factors that are used to normalise the energy consumption. The operational energy use is compared to benchmarks for similar building categories/ types.

Prior to carrying out the assessment, the DEC assessor needs to ensure that adequate data is available. Section 4 collecting data for the assessment from the "Methodology for the production of Display Energy Certificates" outlines the data required and the method for obtaining the data.

- Building Category.
- Location of Building (Building Name, Address).
- Basic Technical Characteristics of the building.
- Separable Energy uses if any.
- Total Useful Floor Area of the building (and how it has been obtained) or other allowed area metric including Total Useful Floor Area attributable to each benchmark category and to separable energy use (where exists).
- Recorded hours of occupancy.
- Energy consumption (meter readings or suppliers estimates) and measurement period.
- Results of previous DEC assessments, where they exist.

1. Calculation Procedure and Conventions

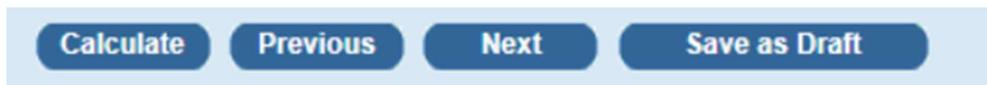
For carrying out energy assessments, the method of calculating the energy performance is set out in the form of a **workbook which is accessible to registered DEC assessors from their own Non-Domestic National Administration System (NDNAS) page.**



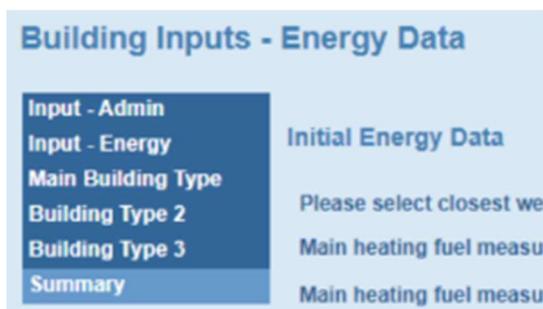
The DEC S tab becomes visible on the NDNAS page for fully registered DEC Assessors. The procedure consists of step-by-step calculations within a series of individual modules within the workbook. These individual modules contain equations or algorithms representing the relationships between various factors which contribute to the normalisation of annual energy performance of the building and establishing benchmarks for the building.

A calculation using this workbook should work sequentially through the individual modules as follows, leading ultimately to the display of results on the 'DEC Summary' page:

- Submit DEC Rating.
- Administrative Details.
- Building Inputs – Energy Data.
- Main Building Type.
- Building Type 2 or more up to 5 types.
(Only completed if there is more than 1 building type).
- Review the results on the DEC Summary page before publication.



A row of buttons allows an assessor to progress in order through the modules.



A navigation panel also allows an assessor to move easily between modules.

2. Building Inputs

2.1 Administrative Details

Building Inputs - Administration

Input - Admin
 Input - Energy
 Main Building Type
 Summary

Administrative Details

Assessor Name :

Assessor Number:

Public Body :

Public Body Address:

MPRN : * Get Address from MPRN

Address of the building as it will be displayed on the certificate

Name of building : *

Address of building : *

Town of Building: *

County of Building: *

Year of construction:

Building Environment : *

Total useful floor area : * m²

Do you have metered, estimated or apportioned measurements of energy consumption to cover more than 95% of all the energy used by the building? (No to this question results in a 'G' grade energy rating.):

Calculate
Next
Save as Draft

Mandatory fields are indicated by a red *. Failure to populate these fields will flag an error.

Assessor Name and Assessor Number

Both the name and the assessor number of the registered DEC assessor, who is responsible for producing the DEC of the Building, will be filled in automatically.

Public Body

Enter the Name of the Public Body (if applicable) responsible for producing the Display Energy Certificate. For example: the case of a DEC being carried out on a public swimming pool the Public Body is usually the Local Authority and their details will be entered here.

Public Body Address

Enter the Address of the Public Body (if applicable) responsible for producing the Display Energy Certificate.

MPRN*

Enter the Meter Point Reference Number (MPRN), this is mandatory and can also be used to populate the address fields

Name of Building*

Enter the name of building to which the Display Energy Certificate applies.

Address of Building*

Enter the address of building to which the Display Energy Certificate applies.

Town of Building*

Enter the town where building to which the Display Energy Certificate applies, is located.

County of Building*

Enter the county where building to which the Display Energy Certificate applies, is located.

Year of Construction

Enter the year the largest section of the building was constructed.

Building Environment*

Enter the Building Environment (HVAC System) that applies to most of the building.



The screenshot shows a light blue form area with two input fields. The first field is labeled 'Year of construction:' and is an empty text box. The second field is labeled 'Building Environment : *' and is a dropdown menu with a blue arrow pointing downwards.

It is displayed on the Display Energy Certificate for information purposes, but the selection of Building Environment does not impact on the Display Energy Rating.

The choices of Building Environment are as follows:

- Air Conditioning
- Heating and natural Ventilation
- Heating and Mechanical Ventilation
- Mixed Mode with natural ventilation
- Mixed Mode with mechanical ventilation

Total Useful Floor Area*

Enter the Total Useful Floor Area. This includes all the unconditioned spaces as well as the conditioned spaces.



Building Environment : *

Total useful floor area : * m²

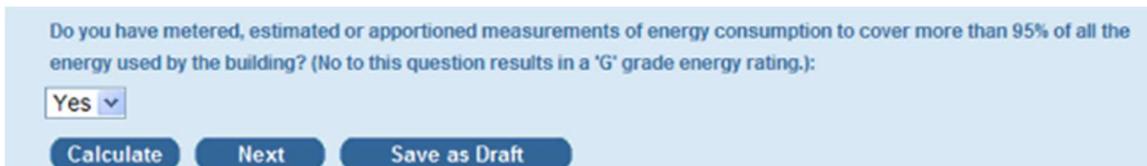
The building area measurement specified in the legislation is the Total Useful Floor Area (TUFA). This is the same as the Gross Internal Area (GIA) commonly used in commercial property surveying, and for which measurement conventions are based on the SCS/IAVI Measuring Practice Guidance Notes. The method of measurement of total useful floor area is also set out in Technical Guidance Document L of the Building Regulations, which states that *'linear measurements for the calculation of wall, roof and floor areas and building volumes should be taken between the finished internal faces of the appropriate external building elements'*

In this convention:

- The area of sloping surfaces such as staircases, galleries, raked auditoria, and tiered terraces should be taken as their area on plan; and
- Areas that are not enclosed such as open floors, covered ways and balconies are excluded.

Do you have metered, estimated, or apportioned measurements of energy consumption to cover more than 95% of all the energy used by the building? (No to this question results in a 'G' grade energy rating.)*

Enter "Yes" or "No" to the question.



Do you have metered, estimated or apportioned measurements of energy consumption to cover more than 95% of all the energy used by the building? (No to this question results in a 'G' grade energy rating.):

Yes ▾

Calculate Next Save as Draft

To answer "Yes" over 95% of the energy consumption from all fuels must come from:

- Metered data.
- Estimates from utilities suppliers only. Estimates from others not permitted.
- For tenancies Landlord Energy Statement suitable.

If less than 95% of the energy consumption can comply with the above guidelines "No" is answered to the question which results in a "G" grade energy rating.

2.2 Initial Energy Data

- Input - Admin
- Input - Energy
- Main Building Type
- Summary

Initial Energy Data

Please select closest weather station: * Mullingar

Main heating fuel measurement period Start Date(dd/mm/yyyy): * 31/07/2020 Hover for dates of weather data

Main heating fuel measurement period End Date (dd/mm/yyyy): * 31/08/2021

Main heating fuel : * Heating oil

Is the consumption directly from meter readings or is it an estimate from a utility company: Metered

No. of days in measurement period: 396

Assessment period alignment : * Start

Assessment Start Date: 31/07/2020

Assessment End Date: 31/07/2021

Nominated Certificate Validity Start Date: * 01/01/2022

Benchmark Categories

No of Building Types: * 1

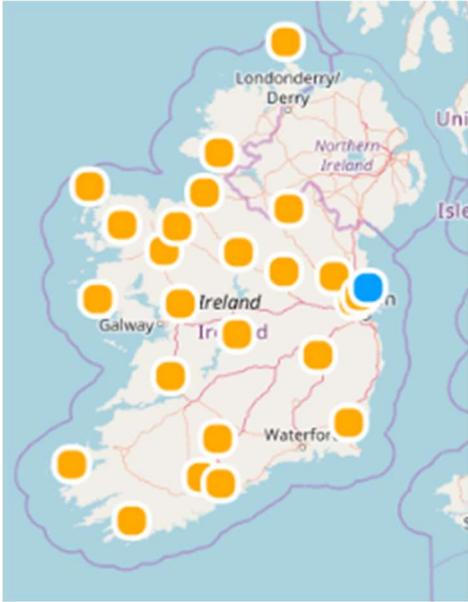
Unconditioned floor area : 116

Description of purpose of Unconditioned floor area: Plantroom

Please Proceed and Complete the following tabs: Main Building Type

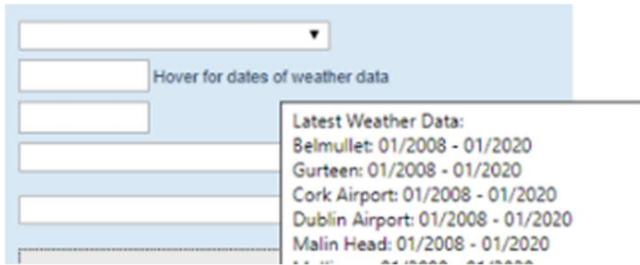
Please select closest weather station*

Select the closest weather station, **as the crow flies**, to your site from the available locations – there are 20 locations to select from, these are:

Athenry	Mace Head	
Ballyhaise	Malin Head	
Belmullet	Markree	
Carlow Oakpark	Mount Dillon	
Claremorris	Mullingar	
Dunsany	Newport	
Fermoy Moorepark	Phoenix Park	
Finner	Roches Point	
Gurteen	Sherkin Island	
Johnstown Castle	Valentia	

Based on the weather station chosen the degree days for the assessment period and the measurement period are used by the software.

- Weather data is obtained from Met Éireann and is uploaded when it arrives to SEAI. To see the status of weather data on the system hover over the weather station input field with your mouse.



Main heating fuel measurement period Start Date*

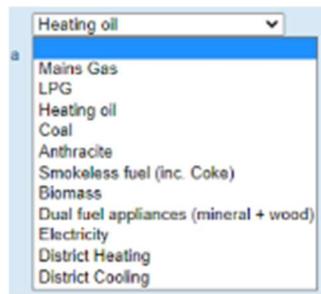
Enter the Start Date of the Main Heating Fuel measurement period.

Main heating fuel measurement period End Date*

Enter the End Date of the Main Heating Fuel measurement period.

Main Heating Fuel*

Select from the following list the fuels, the fuel that is used to provide the Main Space Heating within the building.



Is the Heating Electricity metered separately from other uses of Electricity?

Enter "Yes" or "No" to the question. (Only relevant where electricity is the heating fuel.)



Where electricity is supplying the heating energy and where the heating electricity is sub-metered the user can enter the amount of electricity attributed to heating. Where "NO" is selected the software will allocate the amount attributed to heating based on the building types.

Is the consumption directly from meter readings or is it an estimate from a utility company?

- Enter "Metered" if the Main Heating Fuel is metered.
- Enter "Estimated" if the Main Heating Fuel is estimated from a utility company **or from a landlord energy statement.**



During the DEC system initiation period a measurement period of 365 +/- 90 days was allowed for non-metered fuels, this no longer applies. This field is an information only field now.

Number of days in measurement period.

This is the number of days between the start and end date of the Main Heating Fuel Measurement Period. The Main Heating Fuel Measurement Period must be 365 days +/- 31 days to be accepted in the calculation.

If the measurement period is within these ranges the calculation tool will state that the measurement period in the text box.

No. of days in measurement period:

If the measurement period is outside these ranges, the calculation tool will state that the measurement period is "Measurement Period Out of Range". If this is the case, it will not be accepted by SEAI for registration.

Building Inputs - Energy Data

Building Input Energy Data - The number of days in the period should be 365 plus or minus 31
Building Input Energy Data - There is no Weather Data for the selected weather station at the selected dates.

Assessment period alignment*

Enter "Start" or "End".

"Start" chooses the start date of the Main Heating Fuel Measurement Period as the Start Date of the Assessment Period and uses it to align all other energy measurement periods.

"End" chooses the end date of the Main Heating Fuel Measurement Period as the End Date of the Assessment Period and uses it to align all other energy measurement periods.

Assessment period alignment : *

Before setting the start or end date of the assessment period to align with the main heating fuel measurement period, examine the start and end dates of all the measured energies.

The start or end dates of all other energy measurement periods must be aligned with the start and end dates of the assessment period within +/- 31 days.

Nominated Certificate Validity Start Date*

Enter a date that the energy assessor would like the Display Energy Certificate to be valid from.

Nominated Certificate Validity Start Date: *

The Nominated Issue Date must be within 180 days of the end of the assessment period.

If the Nominated Issue Date is more than 180 days from the end of the assessment period, the following message appears:

Building Input Energy Data - Assessment Period Out of Alignment with Nominated Certificate Validity Start Date. Assessment Period must be within 180 days of Validity Period

The software will not allow a Display Energy Certificate to be issued until this error message has been cleared.

2.3 Benchmark Categories

Benchmark Categories

No of Building Types: *

Unconditioned floor area :

Description of purpose of Unconditioned floor area:

Please Proceed and Complete the following tabs:

Main Building Type

Number of Building Types*

Enter the number of Building Types that are in the building. Up to five building types may be entered. Additional worksheets become available when there is more than the main building type.



The navigation pane displays the number of building types the assessor has defined.

The Main Building Type Worksheet will always have to be completed. Depending on the number of building types, additional worksheets are completed for Building Type 2/3/4/5.

Unconditioned floor area

Enter the area of unconditioned floor area within the building.

Unconditioned floor area is an area within the Total Useful Floor Area that is untreated (not heated, cooled, or mechanically ventilated), and are termed accessible unconditioned areas (for example, habitable attics and basements).

Although the calculation of the rating is not adjusted to take any account of these areas, and they do not appear on the DEC, these areas (measured in terms of useful floor area) are recorded as part of the data entered in the calculation procedure.

Description of Purpose of Unconditioned floor area

Enter the Description of Purpose of Unconditioned floor area.

Each accessible unconditioned area is recorded together with a description of the purpose of the area, so that these can be included in the output data file and be available for subsequent analysis.

Note that where a benchmark is available for the accessible unconditioned space, then a composite benchmark approach should be adopted by defining the area as a separate building type.

There are 29 Building Categories to choose from, the energy assessor selects the relevant benchmark category applicable to the building uses. **See Appendix 1 of this document for details.**

Where a building has a mix of uses that would place parts of the building in different benchmark categories the number of different building types is entered. A maximum of 5 building types is allowed.

2.4 Energy Consumption Data

Fuel Type	Consumption kWh	Start date	End date	Source	
Heating oil	10000	01/01/2021	26/12/2021	Metered	*
Electricity	10000	01/01/2021	26/12/2021	Metered	Ok *
LPG	5000	01/01/2021	26/12/2021	Estimated	Ok
					No Fourth Fuel

Fuel Type

The first fuel type will always be the Main Heating Fuel selected under Initial Energy Data.

The second fuel type will always be electricity unless the Main Heating Fuel is Electricity and is not metered separately. If this is the case leave the second fuel blank.

The main space heating fuel and electricity will auto populate as appropriate. If the main heating fuel is electricity, only then will electricity be auto populated.

Enter any other fuel types associated with the energy use within the building. This could be another fuel used for space heating, fuel for cooking, fuel for hot water or fuel for a separable energy.

Consumption kWh

Enter the annual energy consumption for each fuel type.

Start Date/ End Date

- Enter the Start Date of the energy measurement period.
- Enter the End Date of the energy measurement period.

The first fuel type will automatically take the Start and End dates of the Main Heating Fuel Measurement Period which were input in Initial Energy Data.

The Fuel Measurement Period must be 365 days +/- 31 days to be accepted in the calculation.

- "No Secondary/Third/Fourth Fuel" appears if there is no Second/ Third or Fourth Fuel.
- "Dates Out of alignment" appears if the measurement period is not within +/- 31 days of either the start/ end date of the assessment period. If this is the case this must be corrected before the DEC can be uploaded to SEAI.

District Heating/Cooling Primary Conversion Factors & CO₂ Factors

If District Heating or Cooling is chosen as the fuel type additional fields become active to allow the DEC Assessor to enter the Primary Conversion Factor for the District Heating Scheme and the CO₂ Factor for the District Heating Scheme.

The screenshot shows a form with the following elements:

- A dropdown menu set to "District Heating".
- A text input field containing "20000.00".
- Two date input fields containing "01/09/2020" and "01/09/2021".
- A dropdown menu set to "Metered" and an "Ok" button.
- A second dropdown menu (empty) and a "No Fourth Fuel" label.
- A section header: "Please Complete the Following Primary Conversion and CO₂ Factors".
- Four rows of input fields with labels:
 - District Heating Primary Conversion Factor: [input field] kwh/kWh
 - District Heating CO₂ Conversion Factor: [input field] kgCO₂/kWh
 - District Cooling Primary Conversion Factor: [input field] kwh/kWh
 - District Cooling CO₂ Conversion Factor: [input field] kgCO₂/kWh

- Enter the Primary Conversion Factor for the District Heating Scheme
- Enter the CO₂ Factor for the District Heating Scheme
- Enter the Primary Conversion Factor for the District Cooling Scheme
- Enter the CO₂ Factor for the District Cooling Scheme

A calculation methodology for these factors, based on the EPB Standard I.S. EN 15316-4-5 is under development, pending the establishment and implementation of a verification mechanism for district heating data and policy decisions on the accounting for this data.

In the interim, factors may be derived for the purpose of DEC, with a method based on I.S. EN 15316-4-5 and using the carriers' primary energy and carbon factors listed in the NEAP Survey Guide Appendix 12.

2.5 Main Building Type

The worksheets Building Type 2, Building Type 3, Building Type 4 and Building Type 5 follow a similar format to the worksheet Main Building Type and therefore the same methodology should be applied.

Input - Admin	Please Select Main Building type : *	Dry sports & leisure facility <input type="button" value="Click"/>
Input - Energy	Main Building Type - Type of Area: *	Gross Internal Area <input type="button" value="v"/>
Main Building Type	Area of Main Building Type: *	953.00 m ²
Summary	Total Usable Floor Area:	953.00 m ²
	Number of Hours of Occupancy: *	Standard Occupancy <input type="button" value="v"/>
	Total Equivalent Hours for Main Building Type:	2755

Select Building Type

Select the Main Building Type from a list of 29 categories.

Benchmark Categories available in software		
1. General office	11. Entertainment Hall	21. Long term residential
2. High-street agency	12. Swimming pool centre	22. General accommodation
3. General retail	13. Fitness and health centre	23. Emergency services
4. Large non-food shop	14. Dry sports and leisure facility	24. Laboratory or operating theatre
5. Small food shop	15. Covered car park	25. Public waiting or circulation
6. Large food shop	16. Public buildings with light usage	26. Terminal regional transport terminal with concourse
7. Restaurant	17. Schools and seasonal public buildings	27. Workshop
8. Bar, pub or licensed club	18. University campus	28. Storage facility
9. Hotel	19. Clinic health centres	29. Cold storage
10. Cultural activities museum, art gallery or other public building	20. Hospital – clinical and research	

Type of Area*

Enter the Type of Area that the Area of the Building has been measured in.

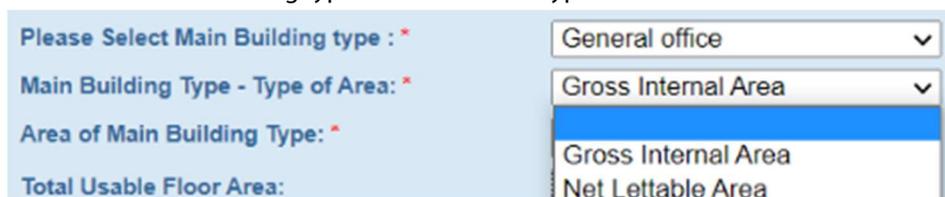
Gross Internal Area (or Total Useful Floor Area) - the method of measurement is set out in Technical Guidance Document L of the Building Regulations, which states that *'linear measurements for the calculation of wall, roof and floor areas and building volumes should be taken between the finished internal faces of the appropriate external building elements'*

Some building sectors commonly use alternative measures of area, notably Net Lettable Area (NLA) for the commercial office sector, and Sales Floor Area (SFA) for retail premises. Where these are the only measurements available for these building types, then the calculation may use standard, conservative, conversion factors to obtain GIA from NLA or SFA. These conversion factors, and the building categories for which they may be applied are as follows:

Category	Name	Brief Description	Approved alternate floor area	Default multiplier applied by software to alternate area to obtain TUFA
1	General office	General office and commercial working areas	Net lettable area (NLA) measured as RICS	1.25
3	General retail	General street retail and services	Sales Floor Area (SFA)	1.80
4	Large non-food shop	Retail warehouse or other large non-food store	Sales Floor Area (SFA)	1.80
5	Small food store	Small food store	Sales Floor Area (SFA)	1.35
6	Large food store	Supermarket or other large food store	Sales Floor Area (SFA)	2.00

Table 3.3.1 Building Area Conversion factors

The alternate type of area available depends on selected the Building Category. For example, Net Lettable Area (NLA) can be chosen in an office building type but not in other types.



Area of the Main Building Type*

Enter the Area of the Main Building Type in m²

Area of Main Building Type: *	<input type="text" value="953.00"/>	m ²
-------------------------------	-------------------------------------	----------------

Total Useful Floor Area (TUFA)

The TUFA is calculated based on the Building Type, the type of Area and the area of the building type.

The conversion factors the software uses for calculating the Total Useful Floor Area are shown in Table 3.3.1

Please Select Main Building type : *	<input type="text" value="General office"/>	▼	C
Main Building Type - Type of Area: *	<input type="text" value="Gross Internal Area"/>	▼	
Area of Main Building Type: *	<input type="text" value="953.00"/>	m ²	
Total Usable Floor Area:	<input type="text" value="953.00"/>	m ²	

In this screenshot the figures in the two fields are identical because GIA is used.

Number of Hours of Occupancy*

Select if the hours of occupancy are "**Standard Occupancy**" or "**Extended Hours**"

Number of Hours of Occupancy: *	<input type="text" value="Standard Occupancy"/>	▼
---------------------------------	---	---

"**Extended Hours**" may be selected if the energy assessor can demonstrate that the building is occupied for significantly longer periods than the standard hours quoted for the benchmark category and where the benchmark information includes for allowing correction for extended hours of use.

Number of Hours of Occupancy: *	<input type="text" value="Standard Occupancy"/>	▼
Total Equivalent Hours for Main Building Type:	<input type="text" value="2040"/>	

The standard hours for the selected building type are displayed by the software in grey. DEC Assessors must determine if the building being assessed exceeds these hours. If this is the case the hours can be increased by the assessor.

Total Equivalent Hours for Main Building Type

The number of hours to be used in the benchmarking is shown here. If "Standard Occupancy" has been selected it will show the equivalent standard hours for the building type. If "Extended Hours" has been selected it will show the equivalent hours of occupancy.

If extended, then input total equivalent hours per year

If "Extended Hours" has been selected, Enter the total equivalent hours of occupancy per year.

- "Value is out of range" means that the number of hours entered is outside maximum number of hours allowed for the Building Type. This must be corrected before the DEC can be uploaded to SEAI.
- Not all building types allow use of Extended hours, e.g., Cold Storage
- If actual operational hours are LESS than the standard hours for the selected building type no input is necessary. A reduced hours input will be ignored by the software.

Separable Energy Uses

Buildings may include activities that consume energy and which are not considered typical of that building type. Including these activities could reduce the validity of the benchmark, and so it may be reasonable to subtract these separable energy uses in certain circumstances.

Allowed separable uses are included as part of the benchmark information. No other energy uses may be separated for the assessment. The allowed separable energy uses are:

- E1 Regional server room
- E2 Trading floor
- E3 Bakery oven
- E5 Sports flood lighting
- E6 Furnace, heat treatment or forming process
- E7 Blast chilling or freezing.

The building types for which each separable use is acceptable is also specified in the benchmark information in CIBSE TM 46.

Fuel Type	Consumption kWh	Start Date	End Date	
LPG	40100	01/01/2020	02/01/2021	Ok
				No Separable Energy

- Ensure that the **ok** is displayed since it indicates separable energy has been deducted, otherwise there is something wrong with the data input.
- The data entry fields will not appear when separable energy cannot be used with the building type selected.

Is the Separable Energy Metered?

Select "Metered" or "Estimated"

Similar to the main heating fuel, the fuel must be separately and permanently metered, and any estimates can only be from utilities. Separable energy must be omitted where sufficient data is unavailable.

Are there any Separable Energy Uses?

Enter the energy use associated with each Separable Energy Use.

The allowed separable energy uses associated with the building type are listed. Beside each allowed separable energy use to enter the energy use in kWh for the year.

Type of Separable Energy Uses

Enter a number to represent the separable energy used. E.g., for E[^] Furnace or forming process, enter 6.

Floor area associated with separable energy use

Enter the associated floor area.

The separable energy must have associated floor area that is measured and recorded. The area must be given in the form of gross internal area.

- Where the separable use is outside, such as sports flood lighting, the area to be deducted will be zero.

Fuel Type

Enter the fuel types associated with the separable energy use.

Consumption kWh

Enter the annual energy consumption for the separable energy for each fuel type.

The fuel type and the fuel consumption must already be included within the energy entered on the "Input Energy" page previously. The separable energy use section will subtract the required amount of energy from this.

Start Date/ End Date

- Enter the Start Date of the separable energy measurement period.
- Enter the End Date of the separable energy measurement period.

The separable energy Measurement Period must be within the range 365 +/- 7 days, and the measurement period must be aligned to begin within +/- 31 days of the beginning, or end within +/- 31 days of the end, of the assessment period. Otherwise, an error will be flagged and must be corrected before the DEC can be produced.

- "No Separable Energy" appears if there is no separable energy.
- "Measurement period out of range - Separable Energy cannot be deducted" appears if the measurement period is outside 365 +/- 7 days.
- "Dates out of alignment - Separable Energy cannot be deducted" appears if the measurement period is not within +/- 31 days of either the start/ end date of the assessment period.

Equivalent 365 Day Energy Consumption that will be deducted

Depending on the parameters outlined above, this shows the amount of energy that will be deducted as a Separable Energy Use for the Building Type.

The energy use is pro-rated to 365 days.

Fuel Type	Consumption kWh	Start Date	End Date	
Electricity	40100	11/01/2021	09/01/2022	Ok
				No Separable Energy
Area: 200 m ²				
Electricity	40320.93663911845730027			
	0			

In this example, separable energy data has been entered for 363 days. The software has increased the figure to be used to obtain 365 days of separable energy use.

3. Software Calculated Values

3.1 Primary Energy Benchmark

The Primary Energy Benchmark is displayed on the Energy worksheet below the user inputs. These values depend on the building type(s) selected and are displayed for information purposes. The figures will be composite benchmark figures where more than one building type is used.

Primary Energy Benchmark		
Electrical Benchmark:	301.60	kWh/m ² /yr
Non Electrical Benchmark:	88.51	kWh/m ² /yr
Total Benchmark:	390.11	kWh/m ² /yr

Electrical Benchmark

This is the electrical benchmark calculated from the Building Types entered, and the associated adjustments for location and longer hours of occupancy.

The Benchmark is converted to Primary Energy using the Primary Energy Factor for grid electricity.¹

Non-Electrical Benchmark

This is the non-electrical benchmark calculated from the Building Types entered, and the associated adjustments for location and longer hours of occupancy.

The Benchmark is converted to Primary Energy using a Primary Energy Factor of 1.1.

Total Benchmark

This is the total benchmark calculated from the Building Types entered, and the associated adjustments for location and longer hours of occupancy.

¹ The primary energy and carbon factors for electricity are updated regularly to account for the fuels and renewables in the electricity generation mix. The current figures are published on the SEAI website.

3.2 Corrected Energy Consumption

The energy consumption is corrected if:

- The number of days in the measurement period is more or less than 365 days.
- Electrical heating is the Main Heating Fuel and is not metered separately to other Electricity Uses.

Equivalent 365 Day Energy Consumption

The energy consumption is corrected for 365 days measurement period. The Main Heating Fuel is adjusted based on degree day adjustment. The other fuels are adjusted based on the number of days in the measurement period.

Corrected Energy Consumption for Electrical Heating / Equivalent 365 Days Energy Consumption		
Fuel Type	Corrected Energy Consumption kWh	Equivalent 365 Days Energy Consumption kWh
Mains Gas	625000.00	628673.26
Electricity	11200.00	11200.00

In the above screenshot 625,000kWh for a 355-day measuring period has been entered. The software has interpolated this value to what the consumption would be for 365 days. This is 628,673kW.

Corrected Energy Consumption for Electrical Heating

When entering data for an “all-electric” building the DEC Assessor must select Yes or No to “Is the heating electricity metered separately from other uses of electricity?” in the input energy worksheet.

If No is selected the software will apportion the electricity into the amount assumed to be used for space heating and the amount assumed to be used for other applications.

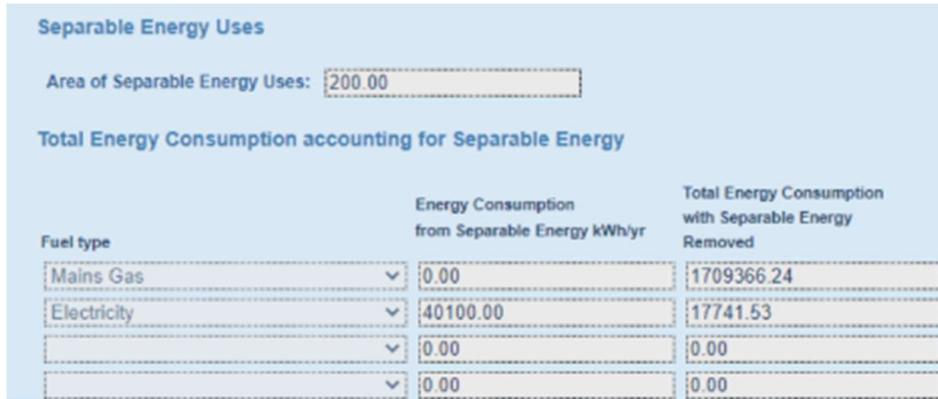
Energy Consumption Data				
Fuel Type	Consumption kWh	Start date	End date	Source
Electricity	20000	01/01/2021	01/01/2022	Metered *
				N/A *

Corrected Energy Consumption for Electrical Heating / Equivalent 365 Days Energy Consumption		
Fuel Type	Corrected Energy Consumption kWh	Equivalent 365 Days Energy Consumption kWh
Electricity For Heating	12550.04	12550.04
Electricity	7449.96	7449.96

The above screenshots show that 20,000 kWh was entered by the DEC Assessor and the software has allocated 12,550kWh of this to space heating.

Separable Energy Uses

How the data entered in the Separable Energy Uses section is used by the software can be viewed here.



Fuel type	Energy Consumption from Separable Energy kWh/yr	Total Energy Consumption with Separable Energy Removed
Mains Gas	0.00	1709366.24
Electricity	40100.00	17741.53
	0.00	0.00
	0.00	0.00

Area of Separable Energy Uses

This is the areas of all the separable energy uses under each building type.

Energy Consumption from Separable Energy

This is the total energy consumption from the separable energy uses under each building type.

Total Energy Consumption with Separable Energy Removed

This is the total energy consumption for each fuel which has been adjusted for 365 days and with the separable energy removed.

The total energy consumption will be converted into Primary Energy and used in producing the Display Energy Certificate.

The primary energy factors used by the software to convert total energy consumption are based on the fuel type and are as follows:

Fuel type	Primary Conversion Factor	CO2 Conversion Factor
Mains Gas	1.1	0.203
LPG	1.1	0.232
Heating oil	1.1	0.272
Coal	1.1	0.361
Anthracite	1.1	0.361
Smokeless fuel (inc. Coke)	1.1	0.392
Biomass	1.1	0.025
Dual fuel appliances (mineral and wood)	1.1	0.289
Electricity	Grid electricity ²	Grid electricity
District Cooling	As entered	As entered
District Heating	As entered	As entered

² The primary energy and carbon factors for electricity are updated regularly to account for the fuels and renewables in the electricity generation mix. The current figures are published on the SEAI website.

4. Summary Page

The summary page presents the key items to be displayed on the finished DEC and must be reviewed by the DEC assessor prior to submitting the DEC for publication.

4.1 Building Details

DEC Summary

- Input - Admin
- Input - Energy
- Main Building Type
- Summary

Software Version: 5.0

Building Details

Address (as will be displayed on the DEC): Engineering Building
Main Street
Cork
Cork
Co. Cork

MPRN: 101010101

Total useful floor area: 7500.00

Building Type: University campus

Environment: Air Conditioning

4.2 Calculation results

Calculation Results

Grade (Indicative Value): C2

DEC Indicator Ratio: 60.77

Annual P.E Consumption (kWh/m²/yr): 262.63

CO₂ Emissions (kgCO₂/m²/yr): 48.53

CO₂ Indicator Ratio: 59.35

Nominated Certificate Expiry: 10/05/2023

	Total	Electrical	Non Electrical
Actual Energy Use (kWh/m ² /yr):	262.63	5.06	257.58
Typical Energy Use (kWh/m ² /yr):	432.21	166.40	265.81

4.3 Previous Display Energy Ratings and Grades

The results of previous DEC assessments are shown when the current DEC is linked to previous assessments.

Previous Operational Building Energy Ratings and Grades

Month	Year	P.E Ratio	CO ₂ Ratio

5. Uploading a DEC to SEAI

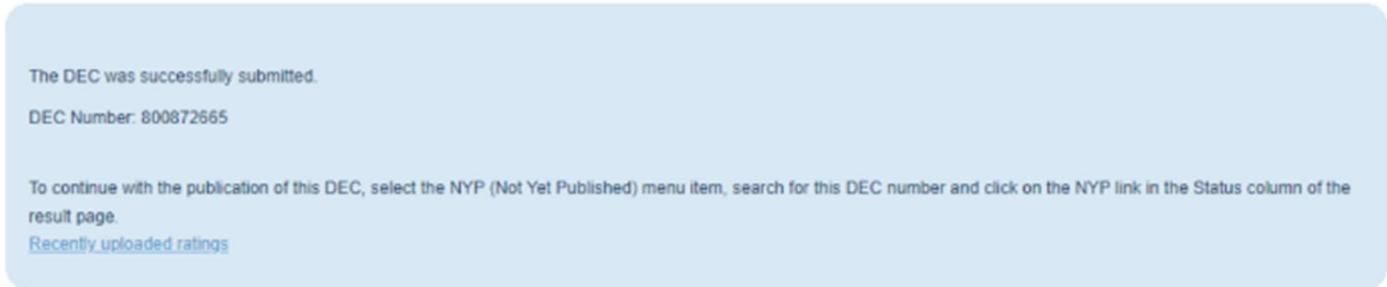
The "Submit DEC" button can be found at the bottom of the summary page.



5.1 Publishing the DEC

When the DEC is submitted the following message appears:

Submit DEC Rating



After pressing the NYP (Not Yet Published) button the assessor will be presented with a list of their NYP assessments and they should select the DEC assessment they have been working on.

<input type="checkbox"/>	Project Name	Type	MPRN	Assessor Name	Building Address	Project County	Processed / Issued	EPC	CPC	RER	BER	Your Ref. (Project Name)	All Data	XML	BER Cert	Advisory Report	Errors / Notices	Status
<input type="checkbox"/>	800872665	DEC	10000000000	SEAI Internal	Marys road	Dublin 9	06/10/2022 16:06					Test file						  NYP

The assessor must now click on the NYP link on the far right of the entry, highlighted here.

Notice Details

DEC Number:

Project Name:

MPRN:

Status:

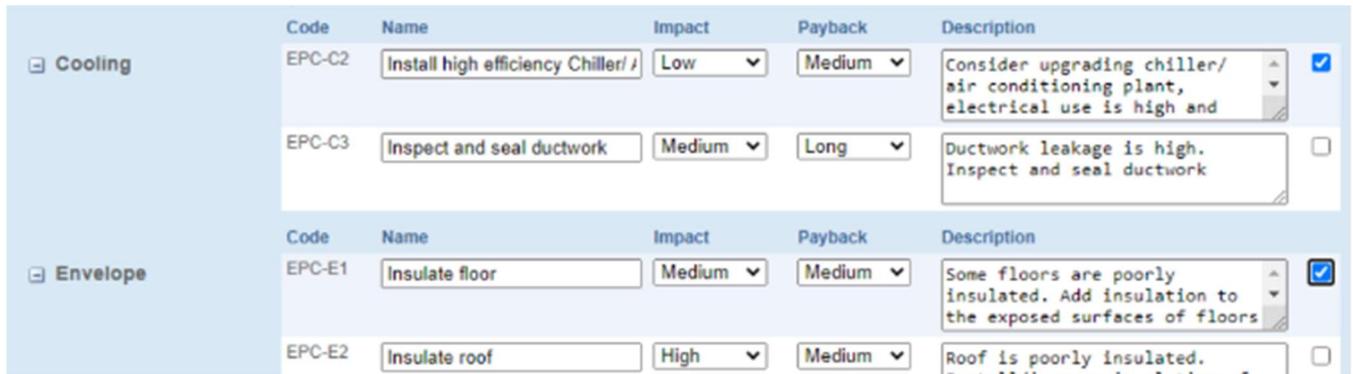
Unpublished Rating:

Pressing the link will open this screen. The Assessor can continue to publish or can discard the assessment.

5.2 Customising the advisory report

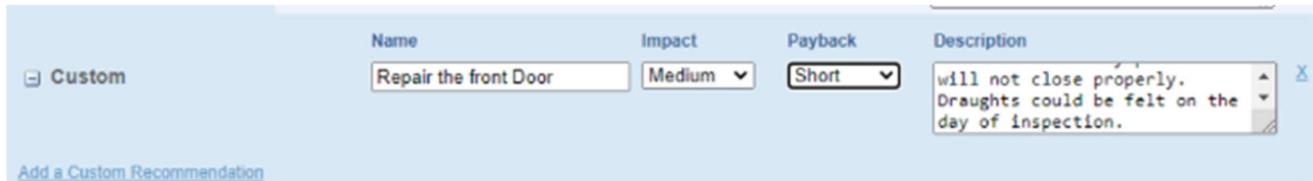
Pressing the link will open this screen. The Assessor must edit the list to:

- Include the listed recommendations
- Modify the listed recommendations
- Create their own recommendations



Recommendations are **included** by ticking the box on the right as shown in the above screenshot.

Recommendation text can be modified by the user if required. Assessors should carefully read through the list and include any recommendations that they believe are relevant to the property. Recommendations can also be altered by changing the text in the Description field.



At the end of the list there is an option to create a custom recommendation which is specific to the building but not listed within the standard set of recommendations.

Upon completion of the advisory report adjustments the DEC can be published.

The address on the DEC certificate must clearly and unambiguously identify the property being rated.
Please select the most appropriate address. This is the address that will appear on your DEC certificate

Address per your submission:	<input type="text"/>	<input checked="" type="radio"/>
Address retrieved by MPRN:	<input type="text"/>	<input type="radio"/>
Eircode:	<input type="text"/>	

The final screen asks the assessor to verify the address and enter an Eircode.

6. The DEC Certificate and Advisory Report

Operational BER

Building Name, Address & Details; Assessor details; Validity period

Rating Scale with Rating Shown

Benchmark Building's Equivalent

Building Energy Use And Benchmark Energy Use

Assessor details; Validity period

Building CO₂ Rating Scale with Rating Shown

Previous Years Rating, Energy & CO₂

seai SUSTAINABLE ENERGY AUTHORITY OF IRELAND

6.1 Information displayed on a DEC Certificate:

I.D. and Validity:

- A unique BER(DEC) number, provided by SEAI.
- Period of validity of the certificate. This commences on the nominated date chosen by the assessor. The period is for 365 days. For other than the first DEC for a building, there should be no gap from period covered by previous DEC but there may be overlap of up to 90 days where this facilitates preparation of the DEC taking account of the fuel measurement system and consumption data available.
- Unique assessor number. Each assessor is assigned a unique assessor number.

BER No.:	800000000
Date of Issue:	19 Nov 2021
Valid Until:	19 Nov 2022
Assessor No.:	100000

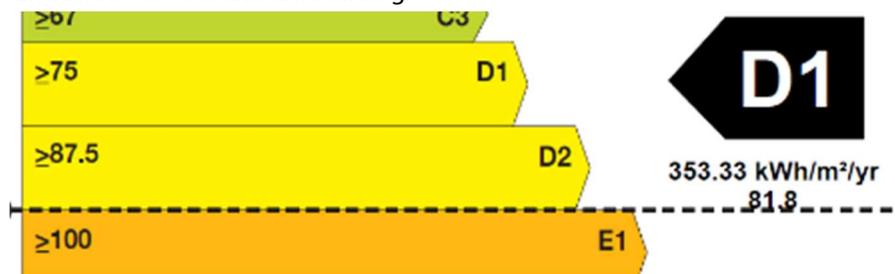
Building identifier and building technical information

- A building identifier, e.g., name, address. This should be sufficient to uniquely identify the building.
- Basic building technical information, e.g., building type, floor area, main heating fuel, main heating/cooling type, sufficient to assist understanding of the more detailed information contained on the certificate.

Test file University campus Marys road Dublin 9	Building Type: University campus Useful Floor Area (m ²): 1000 Main Heating Fuel: Mains Gas Building Environment: Mixed Mode with Natural Ventilation
--	--

Operational BER:

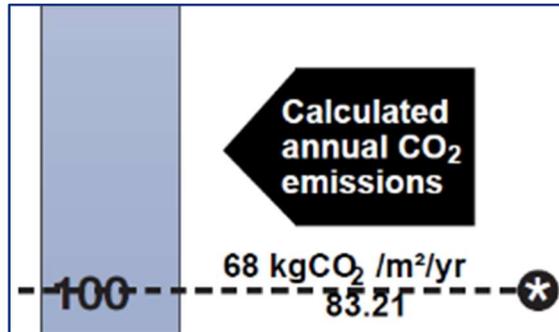
- An operational BER for the building with performance expressed as a grade on a subdivided A - G scale expressing the equivalent primary energy consumption per unit floor area as a percentage of a value that would be obtained from the benchmark building.



- The operational BER is calculated as the relevant total primary energy associated with the delivered energy to the building over the assessment period divided by the degree day and occupancy corrected primary energy density benchmark $P_{dd\&occ}$.
- In the case of a composite benchmark assessment, the relevant total primary energy associated with the delivered energy to the building over the assessment period is divided by the overall composite primary energy density benchmark ($P_{dd\&occ [comp]}$).
- D2-E1 dividing line represents equivalence with benchmark or 'typical' building of same type.

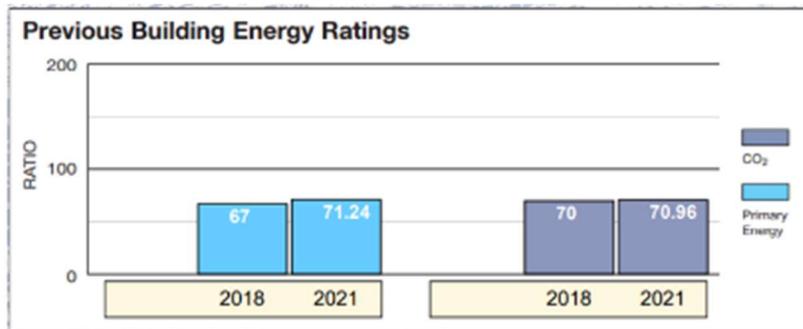
CO₂ Indicator:

- A subsidiary CO₂ performance indicator shown as a position on a linear scale representing the annual CO₂ emission per unit of area of the building caused by its consumption of energy as a percentage of a value that would be considered typical for the particular type of building) together with a numerical indicator of the CO₂ emissions of the building.



Previous years ratings:

- Histograms of trends in energy and CO₂ performance in up to three most recent years are displayed at the bottom of the cert.



Annual Energy use Actual and Benchmark:

- Primary electrical and heating energy per unit floor area for the building being assessed and for the relevant benchmark building type. For the building this is the net primary energy figure, **excluding separable energy** and any renewable energy generated on-site, derived for the assessment period of 365 days.

Annual Energy Use

THIS BUILDING		TYPICAL BUILDING OF THIS TYPE	
Non Electrical (kWh/m ² /yr)	Electrical (kWh/m ² /yr)	Non Electrical (kWh/m ² /yr)	Electrical (kWh/m ² /yr)
122.22	231.11	265.54	166.4

The DEC demonstrates the relative performance of the building assessed against a standardised scale of energy performance. The A to G banding, with subdivisions, of the DEC is determined as:

Calculated values		Rating bands
0 to 8.5	A1	A
8.5 to 17	A2	
17 to 25	A3	
25 to 33.5	B1	B
33.5 to 42	B2	
42 to 50	B3	
50 to 58.5	C1	C
58.5 to 67	C2	
67 to 75	C3	
75 to 87.5	D1	D
87.5 to 100	D2	
100 to 112.5	E1	E
112.5 to 125	E2	
125 to 150	F	F
More than 150	G	G

6.2 The advisory report

- As described in section 6, the advisory report is generated at publication stage.
- A sample of the text is shown below.



Display Energy Certificate Advisory Report

DEC Rating for the building detailed below is: D1

Address:
MPRN: 10010010012
DEC No: 800872665

Administrative Details

Date of Issue: 06/10/2022
Valid Until: 03/12/2022
Useful Floor Area(m2): 1000.00
Building Environment: Mixed Mode with Natural Ventilation
Assessor: SEAI Internal
Assessor No: 100000

1. About this Advisory Report

In compliance with Statutory Instrument No. 243 of 2012, large buildings are required to secure and display a DEC. The DEC must be accompanied by an Advisory Report which contains recommendations for the cost-optimal or cost-effective improvement of the energy performance of the building.

The DEC and Advisory Report are based on the operational annual energy use within the building and a survey of the building. This report provides advice on improving your DEC and reducing your energy usage and costs. The improvement measures recommended in this report are not mandatory and can be completed at the building owners own discretion. Some improvements may require further detailed professional advice and/or the use of suitably qualified installers. All works should be completed to

2. Recommendations

The following sections list recommendations selected by the energy assessor for the improvement of the energy performance of the building.

Cooling
 Install high efficiency Chiller/ Air Conditioning Equipment
 Consider upgrading chiller/ air conditioning plant, electrical use is high and there is potential to improve efficiency of chiller/ air conditioning plant.
Payback: Medium **Impact:** Low

Appendix 1 – Additional information

A1.1 Guidance relating to measuring and entering energy use

The following articles were previously published in a technical bulletin. These have been updated.

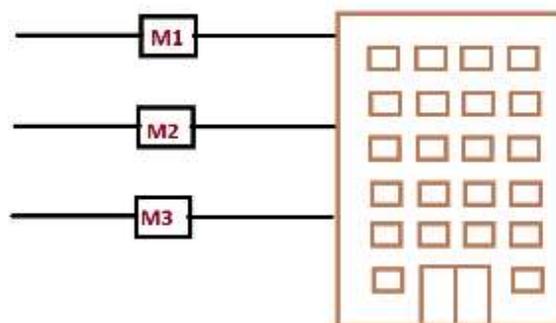
Fuel Consumption for Non-Metered Energy Use

- If non-metered fuels like oil, LPG (Liquefied Petroleum Gas), or biomass are used consumption is measured from delivery notes and stock levels at the start and end of the measurement period.
- The energy assessor will need to obtain records of deliveries and a statement of the stock level at the start and end of the measurement period. The energy assessor will need to obtain a signed statement from a responsible person that the stock levels were measured and details of the method used.
- The fuel consumption for the measurement period must include for fuel stock levels on the start date, fuel deliveries during the measurement period and then subtract any fuel stock levels at the end date.
- Where fuel consumption is measured in terms of mass or volume (e.g., for solid or liquid fuels) rather than in energy terms (kWh), the energy content of the measured fuel consumption must be converted to kWh gross value. Calorific values for all main fuels are available on the SEAI website <https://www.seai.ie/publications/Commercial-Fuel-Cost-Comparison.pdf>
- **If fuel stocks level measurements are not available for the start date, you must assume the fuel store is at its maximum capacity on the start date and you must include for this quantity in the consumption calculation.**
- **If fuel stocks level measurements are not available for the end date, you must assume that no fuel remains in the fuel store on the end date.**
- The energy assessor must have documentary evidence in the form of specifications, drawings or sketches which show dimensions and calculations demonstrating the maximum capacity of the fuel store.

Multiple meters in one building

- In a large building where there is more than one utility bill for a fuel with different measurement periods, a fuel type should be entered for each utility bill.

For example, a building has three electrical supplies.



The following are the measurement periods based on the utility bills:

- Gas meter: 6,500kWh 9th January 2021 to 9th January 2022
- Electricity meter 1: 1000kWh 1st January 2021 to 31st December 2021
- Electricity meter 2: 2000kWh 16th January 2021 to 10th January 2022
- Electricity meter 3: 3000kWh 31st December 2020 to 31st December 2021

These are entered as follows:

Fuel Type	Consumption kWh	Start date	End date	Source	
Mains Gas	6500.00	09/01/2021	09/02/2022	Metered	*
Electricity	1000.00	01/01/2021	31/01/2022	Metered	OK *
Electricity	2000.00	16/01/2021	10/01/2022	Metered	OK
Electricity	3000.00	31/12/2020	31/12/2021	Metered	OK

Data from Sub Meters

Where energy consumption figures have been taken from sub meters, SEAI may ask for evidence to demonstrate that the sub meters have been calibrated correctly.

Documentary evidence must be provided demonstrating that the sub meter is within +/- 5% of actual energy use. An example of documentary evidence includes sub meters verified against utility bills or temporary sub meters.

A1.2 Guidance relating to Extended Hours of Occupancy

Extended hours of occupancy should only be used where the following can be demonstrated:

- The number of hours per year that the number of recorded occupants exceeds 25 % of the nominal maximum occupancy
- The number of hours per year that the premises are fully open according to published opening hours.

Case 1: Office with 24-hour Call Centre

The following diagram represents an office building occupied by a public body.



Level 1 and 2 operate with normal occupancy hours, whereas Level 3 operates 24 hours a day 7 days a week.

The occupancy of Level 3 only accounts for 20% of the Maximum Occupancy, therefore, extended hours cannot be applied to the whole building.

The solution is to create two building types, one with normal operating hours and one with extended operating hours as follows:

Main Building Type

Input - Admin	Please Select Main Building type : *	General office
Input - Energy	Main Building Type - Type of Area: *	Gross Internal Area
Main Building Type	Area of Main Building Type: *	1200 m ²
Building Type 2	Total Usable Floor Area:	1200 m ²
Summary	Number of Hours of Occupancy: *	Standard Occupancy
	Total Equivalent Hours for Main Building Type:	2040

Building Type 2

Input - Admin	Please Select Building type : *	General office
Input - Energy	Type of Area: *	Gross Internal Area
Main Building Type	Area of Building Type: *	600 m ²
Building Type 2	Total Usable Floor Area:	600 m ²
Summary	Number of Hours of Occupancy: *	Extended Hours
	Total equivalent hours per year : *	8760
	Total Equivalent Hours for Main Building Type:	8760

Case 2: An Office with Flexitime Working Hours

The following shows the daily breakdown of staff numbers based on time sheets in an office operating flexitime. The office operates Monday to Friday only and the maximum number of occupants is 500 people.

Daily hours	Staff numbers
7am to 8am	50 people
8am to 9am	100 people
9am to 10am	150 people
10am to 6pm	500 people
6pm to 7pm	100 people
7pm to 8pm	50 people

- As the occupancy between the hours of 7:00 to 9:00 and 18:00 to 20:00 are below 25% of the maximum occupancy, these hours cannot be included within the total equivalent hours per year.
- Between the hours of 9 to 18, the building contains more than 25% of the maximum occupancy, therefore, these hours are included. The total equivalent number of hours in this case is:

Number of days per year: (52 (weeks) x 5 (days/week)) - 10 (bank holidays) = 250 days per year.

Total Equivalent hours: 250 x 9 (hrs per day) = 2,250 hrs per year.

Since this exceeds the standard 2,040 hours per year **extended hours are entered.**

A1.3 Guidance relating to Calculation of Floor Areas

SEAI may ask for evidence to demonstrate the floor area calculations to ensure that they are correctly calculated. The following is a sample of the details required to demonstrate floor areas.

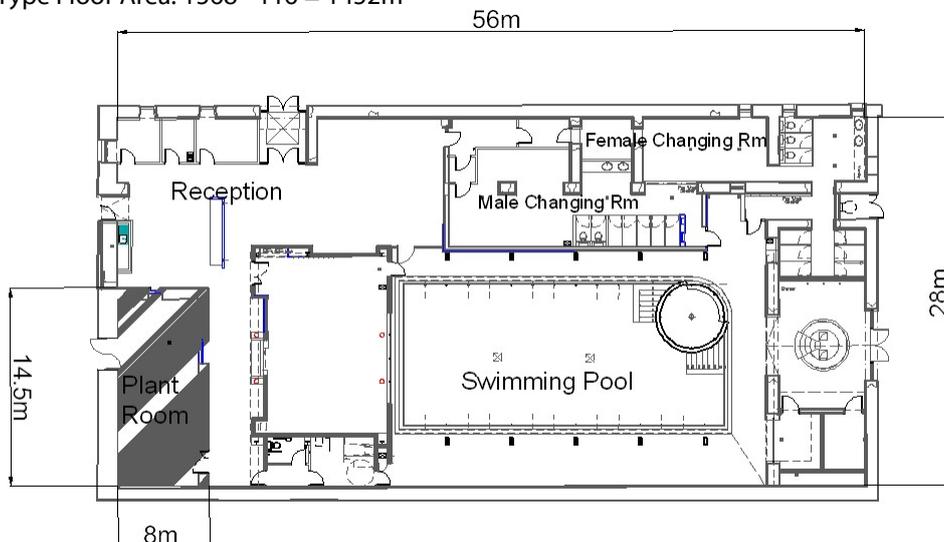
Hard Copy of Drawing

- The dimensions should be clearly shown on the drawings.
- Each building type should be identified on the drawings.
- Any accessible unconditioned floor areas should be clearly marked on the drawing.
- Details of the calculations should be provided:

Total Useful Floor Area: 56m x 28m = 1568m²

Unconditioned Floor Area: 14.5m x 8m = 16m²

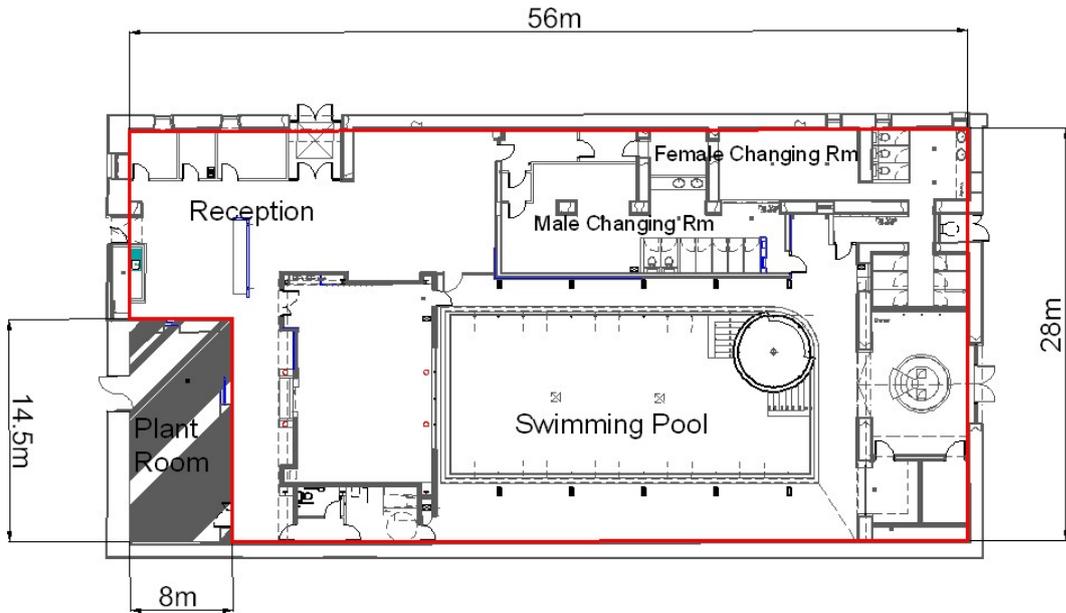
Main Building Type Floor Area: 1568 - 116 = 1452m²



Soft Copy of Drawing

- The polylines calculating the area should be clearly identifiable on the drawings.
- Each building type should be identified on the drawings.
- Any accessible unconditioned floor areas should be clearly marked on the drawing.
- Details of the calculations should be provided:

Polyline area for **Main Building Type** is **1,452m²**



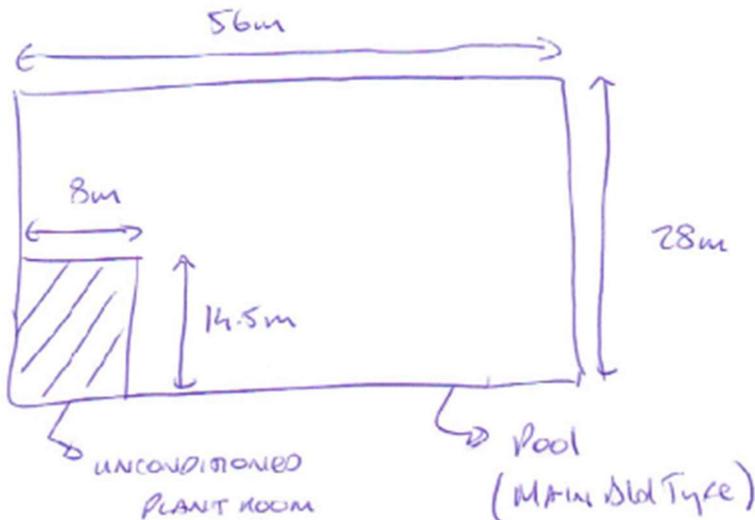
Assessors own Sketch

If no drawings are available, a sketch should be produced showing the following details:

- The dimensions should be clearly shown on the sketch.
- Each building type should be identified on the sketch.
- Any accessible unconditioned floor areas should be clearly marked on the sketch.
- Details of the calculations should be provided.

Total Useful Floor Area: 56m x 28m = 1568m² Unconditioned Floor Area: 14.5m x 8m = 116m² Main **Building**

Type Floor Area: 1568 m² - 116 m² = 1452m²



A1.4 Guidance relating to Composite Leisure Centre

Example: A leisure centre has several parts to it and it requires a single DEC. It has a swimming pool, gym and a sports hall.

With reference to the table in Appendix 2:

There is a specific building type for gyms.

Fitness/ Health	Fitness Centre Gym Health Club
-----------------	-----------------------------------

There is a specific swimming pool type building as well.

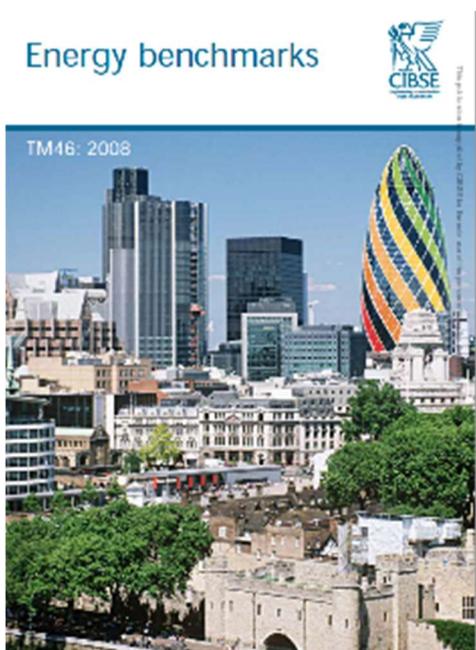
Swimming Pool Centre	Swimming Pool
----------------------	---------------

Finally, there is a Dry Sports/ Leisure Facility building type and this seems to include a building type with a pool option as well as one without.

Dry Sports/ Leisure Facility	Ice Skating Rank Indoor Bowling Leisure Centre Pavilion/ Sports Clubhouse Racecourse Roller Skating Rinks Snooker Club Sports Centre with pool Sports Ground Sports Ground Building Sports Hall Squash Club Tennis Courts
------------------------------	---

Can the building be assessed one building type using "Dry sports / Leisure Facility" or does it need to be assessed using two or three building types?

The benchmark buildings which are integrated into the DEC method are sourced from CIBSE TM46:2008. This document offers more detail on the composition of the building types.



For "swimming pool" CIBSE TM46 advises that this is used in buildings where the pool hall is the dominant space.

For "Dry sports and leisure facility" it is described as "Dry sports and club house buildings – for a combined leisure centre include pool etc".

Furthermore, the listings sometimes include other building types that can be found as part of a mixed-use building with the building in question.

For the building type "Dry sports and leisure facility" two other building types are associated and these are: "Swimming pool" and "fitness/health centre".

Based on the additional guidance found in TM46, **the building should be assessed using the three building types.**

- Dry Sports/ Leisure Facility – for the sports hall section
- Fitness/ Health – for the gym section
- Swimming Pool Centre – for the pool section

Appendix 2 - Building Types

Building Category	Types of Building
Bar	Disco Nightclub Public House Wine Bar
Clinic	Health Centre and/ or Clinic Dentists Surgery Doctors Surgery Medical and Dental Centre Combined Medical Centre Mortuary Occupational Health Centre Outpatient Treatment Establishment Primary Health Care Building Surgery Veterinary Surgery
Cold Storage	Cold Store
Cover Carpark	Covered Parking
Cultural Activities	Art Gallery Art Centre Library Museum
Dry Sports/ Leisure Facility	Ice Skating Rink Indoor Bowling Leisure Centre Pavilion/ Sports Clubhouse Racecourse Roller Skating Rinks Snooker Club Sports Centre with pool Sports Ground Sports Ground Building Sports Hall Squash Club Tennis Courts
Emergency Services	Ambulance Station Emergency Service Fire Station Lifeboat Station Police Station
Entertainment Halls	Auditorium Bingo Hall Casino Cinema Concert Hall Dancing School Entertainment Hall Theatre

Building Category	Types of Building
Fitness/ Health	Fitness Centre Gym Health Club
General Accommodation	Boarding/ Guest House Cadet Hut Holiday Accommodation Holiday Centre Junior Rank Accommodation Mess/ Officers - Accommodation Mess/ Officers - Accommodation & Catering Mess/ WOs & Sgts - Accommodation Mess/ WOs & Sgts - Accommodation & Catering Civilian Rooms Official Service Residence School Boarding House Service Families Accommodation Transient Accommodation
General Office	Adult education centre Air traffic control Bank Office Building Society Office Business Units Call Centre Central Government Office Commercial Office Conference Centre Courts Financial service office Flight Crew Facility Guardroom Law Facilities Legal/ Financial Services Local Government Office Office Showroom Office with industry Office Cellular Offices Open Plan Offices Professional/ Design Professional Services off street Public Sector Offices Simulator Studio Office Town Hall Warehouse Office

Building Category	Types of Building
General Retail	Amusement Arcade Beauty Salon Confectioners, newsagents, off licence Dry Cleaner Garden Centres Hairdressing Salon Indoor markets Laundrette Personal services Pet shops Petrol filling stations
High Street agency	Bank/ Building Society Betting Shop Estate Agents Insurance Brokers Legal/insurance/accountants high street premises Post Office Public services Travel Agent Undertakers
Hospital - clinical and research	General Acute Hospital Teaching/ Specialist Hospital
Hotel	Hotel
Laboratory or operating theatre	Laboratory Operating Theatre
Large food store	Supermarket
Large non-food store	Department Store General Stores Factory Shop Factory Showroom Hypermarket Large Shop Retail Showroom Retail - Warehouse Shop with Industry Showroom Superstore Vehicle showroom Warehouse shop Warehouse showroom

Building Category	Types of Building
Long Term Residential	Community and Mental Health Hospitals Detention Centres Home Hospital Hostel Nursing Home Nursing Residential Homes and hostels Prison Remand Centre Young Offenders institution
Public Buildings with light usage	Beach Huts Bus Depot Cemetery Church Parking building Place of Worship Public Lavatory Sacred place Scout or Guide Hut
Public Waiting or circulation	Bus/ Train Station /Seaport Terminal Dock, wharf Railway premise Railway Station Shopping centre mall
Restaurant	Café Canteen Eating Place Food Courts Mess - junior ranks - accommodation only Mess - junior ranks - catering only Mess - officers - catering only Mess - wos & sgts - catering only Motorway service area Restaurant Takeaway Restaurant

Building Category	Types of Building
Schools and Seasonal public buildings	Clubhouse Community Centre Community Facilities Community Meeting Place Creche Day centre Dogs racecourse Marina or sailing club Nursery or kindergarten Pre-school facility Primary and secondary teaching establishments Primary School Private School Reserves centres School Secondary School Social clubs Special School Speedway State primary school State school State secondary school Unlicensed club Village hall
Small Food Store	Corner food shop - butchers Corner food shop - grocers and delis
Storage Facility	Aircraft Wing - Store Garages Helicopters storage Road Haulage depot Storage Depot Vehicle Storage
Swimming Pool Centre	Swimming pool
Terminal	Airport Terminal Armoury Railway Mixed Use
University Campus	Classroom Lecture Hall University

Building Category	Types of Building
Workshop	Comms Facility Contractor Sheds Crematorium Aircraft Wing - Repair Manufacturing premises (excl process energy) Observatories Petrol Filling Station Railway Engine Shed Recording studio Ship/ submarine repair/ refit Sorting Office Telephone exchange Vehicle repair workshop Vehicle services Workshop Workshops/ maintenance depot



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