

DEAP 4.2.0

Case Study 1

DEAP 4.2.0 Inputs for Existing Simple Dwelling



How to use this Document

The information within this document is for use with DEAP 4.2.0 **Case Study 1**.

Included within this Guide

1. DEAP 4.2.0 Inputs

Section 1 contains all the inputs needed for completing the case study within DEAP 4.2.0 online tool. It follows the same structure as the tabs found in DEAP, which are as follows:

- > Building
- > Ventilation
- > Space Heating
- > Water Heating
- > Lighting
- > Renewables

Each section of this document will refer to the relevant tab in DEAP, which will indicate where you will be able to locate the corresponding inputs for the relevant section of the Case Study.

Note on Data Redaction in Supporting Evidence:

Certain information within the supporting evidence included within this Guide has been redacted to remove any personally identifiable information in relation to BER Assessors and in order to protect the identity of any service providers named within this documentation. Any reference made to dwellings such as the MPRN and dwelling address have been invented for training purposes.

SEAI has no affiliation with any of the brands named within this Guide and are used for training purposes only.

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DEAP 4.2.0 Inputs

Dwelling & Survey Details



Dwelling Details

| | | |
|----------------------|---------------------|---------------------------|
| MPRN | 0 | (or dummy MPRN) |
| BER no. | | no previous Ber published |
| Address Line 1 | 3 The Street | |
| County/City | Co. Cork | |
| Eircode | ABC1234 | |
| Dwelling Type | Semi-detached house | |
| Storeys | 2 | |
| Bedrooms | unknown | |
| Year of Construction | 2002 | |
| Extended | No | |

Survey Details

| | |
|----------------------|-------------------|
| Type of rating | Existing dwelling |
| Purpose | Other - training |
| Building regulations | None |
| Client review period | |
| Client name | |
| Client email | |
| Description | Case Study 1 |

Building

BUILDING

| | | | | | | |
|-----------------------|----------|-------|----------------|----------|------|---|
| Average Storey Height | Storey 1 | 2.44 | m | Storey 2 | 2.69 | m |
| Living Area | | 18.59 | m ² | | | |

Floors

| | | | | | |
|-------------------------------|----------------------|----------------------|------------------------|-------|-------------------|
| Floor 1 | Floor Location | Storey 1 | Area | 51.92 | m ² |
| | Floor Type | Ground Floor - Solid | Exposed Perimeter | 21.80 | m |
| | Age Band | 2000-2004 | <i>default</i> U-value | 0.41 | Wm ² K |
| | Description | Original Floor | Underfloor heating | | |
| | Insulation unknown | | In roof | | |
| | Insulation thickness | | | | |
| wall area (exposed to ground) | | | | | |
| Floor 2 | Floor Location | Storey 2 | Area | 50.46 | |
| | Floor Type | Non-heat loss floor | Exposed Perimeter | | |
| | Age Band | 2000-2004 | U-value | | |
| | Description | First Floor | Underfloor heating | | |
| | Insulation unknown | | In roof | | |
| | Insulation thickness | | | | |
| wall area (exposed to ground) | | | | | |

| | | | |
|----------------|----------------------------|--------|----------------|
| Results | Total Floor Area | 102.38 | m ² |
| | Total Heat Loss Floor Area | 51.92 | m ² |

Roofs

| | | | | | |
|--------|----------------------|----------------------|------------------------|-------|-------------------|
| Roof 1 | Roof Type | Insulated on ceiling | Area | 50.46 | m ² |
| | Description | Main Attic | <i>default</i> U-value | 0.26 | Wm ² K |
| | Insulation unknown | n/a | | | |
| | Insulation thickness | 150mm | | | |
| | AgeBand | 2000-2004 | | | |
| | | | | | |
| Roof 2 | Roof Type | Insulated on ceiling | Area | 1.46 | m ² |
| | Description | Over bay window | <i>default</i> U-value | 0.36 | Wm ² K |
| | Insulation unknown | yes | | | |
| | Insulation thickness | | | | |
| | AgeBand | 2000-2004 | | | |
| | | | | | |

| | | | |
|----------------|-----------------|-------|----------------|
| Results | Total Roof Area | 51.92 | m ² |
|----------------|-----------------|-------|----------------|

Walls

| | | | | | | |
|--------|-----------------------------|--------------|---|------|-------------------|----------------|
| Wall 1 | Wall Type | 300mm cavity | wall is semi-exposed default U-value | Area | 86.6 | m ² |
| | Age Band | 2000-2004 | | n/a | | |
| | Description | Main Walls | | 0.55 | Wm ² K | |
| | Include in compliance check | n/a | | | | |

| | | | |
|----------------|-----------------|------|----------------|
| Results | Total Wall Area | 86.6 | m ² |
|----------------|-----------------|------|----------------|

Rooms

Rooms are not being entered for this BER assessment. Rooms are optional for all assessments

Doors

| | | Door details (in library) | Survey details | |
|--------|------------------|---------------------------|----------------|---------------------|
| Door 1 | Add from library | Solid Exposed Door | no. of items | 1 |
| | U-value | 3 W/m ² K | Room | |
| | draught-stripped | yes | Area | 1.85 m ² |
| | | | Description | |

| | | | |
|----------------|-----------------|------|----------------|
| Results | Total Door Area | 1.85 | m ² |
|----------------|-----------------|------|----------------|

Windows

| Window 1 | Window details (in library) | Survey details |
|----------------------------|-----------------------------|----------------|
| | U-value 2.8 | no. of items 1 |
| Glazing double, air filled | Room | |
| Frame PVC | Area 7.35 | |
| Gap 12mm | Orientation Northwest | |
| Frame Factor 0.7 | Overshading Average | |
| Solar transmittance 0.76 | No. of openings 5 | |
| Description W05+W14+W15 | No. draught-stripped 5 | |
| | Blinds/curtains | |
| | Overhang | |
| | Roof window | |

| Window 2 | Window details (in library) | Survey details |
|----------------------------|-----------------------------|----------------|
| | U-value 3.1 | no. of items 1 |
| Glazing double, air filled | Room | |
| Frame PVC | Area 1.2 | |
| Gap 6mm | Orientation Northwest | |
| Frame Factor 0.7 | Overshading MTA | |
| Solar transmittance 0.76 | No. of openings 0 | |
| Description W02+W03 | No. draught-stripped 0 | |
| | Blinds/curtains | |
| | Overhang | |
| | Roof window | |

| Window 3 | Window details (in library) | Survey details |
|----------------------------|-----------------------------|----------------|
| | U-value 2.8 | no. of items 1 |
| Glazing double, air filled | Room | |
| Frame PVC | Area 4.40 | |
| Gap 12mm | Orientation Southeast | |
| Frame Factor 0.7 | Overshading Average | |
| Solar transmittance 0.76 | No. of openings 3 | |
| Description W07+W12+W13 | No. draught-stripped 3 | |
| | Blinds/curtains | |
| | Overhang | |
| | Roof window | |

Window 4

| Window details (in library) | |
|-----------------------------|--------------------------|
| U-value | 3.4 |
| Glazing | double, air filled, |
| Frame | Metal, 4mm thermal break |
| Gap | 12mm |
| Frame Factor | 0.8 |
| Solar transmittance | 0.76 |
| Description | W08 |

| Survey details | |
|----------------------|-----------|
| no. of items | 1 |
| Room | |
| Area | 3.49 |
| Orientation | Southeast |
| Overshading | Average |
| No. of openings | 1 |
| No. draught-stripped | 1 |
| Blinds/curtains | |
| Overhang | |
| Roof window | |

Window 5

| Window details (in library) | |
|-----------------------------|--------------------|
| U-value | 2.8 |
| Glazing | double, air filled |
| Frame | PVC |
| Gap | 12mm |
| Frame Factor | 0.7 |
| Solar transmittance | 0.76 |
| Description | W06 |

| Survey details | |
|----------------------|-----------|
| no. of items | 1 |
| Room | |
| Area | 0.82 |
| Orientation | Northeast |
| Overshading | Heavy |
| No. of openings | 0 |
| No. draught-stripped | 0 |
| Blinds/curtains | |
| Overhang | |
| Roof window | |

Window 6

| Window details (in library) | |
|-----------------------------|--------------------|
| U-value | 2.8 |
| Glazing | double, air filled |
| Frame | PVC |
| Gap | 12mm |
| Frame Factor | 0.7 |
| Solar transmittance | 0.76 |
| Description | W04+W09+W11 |

| Survey details | |
|----------------------|-----------|
| no. of items | 1 |
| Room | |
| Area | 2.10 |
| Orientation | Southwest |
| Overshading | Heavy |
| No. of openings | 2 |
| No. draught-stripped | 2 |
| Blinds/curtains | |
| Overhang | |
| Roof window | |

| | | | |
|----------------|-------------------|-------|----------------|
| Results | Total Window Area | 19.36 | m ² |
|----------------|-------------------|-------|----------------|

Global Factors

| | | |
|-----------------------|--------|---------|
| Thermal Mass Category | Medium | |
| Thermal Bridging | 0.15 | default |

Results

| | | | |
|------------------|-----------------|---------|-------------------|
| Heat Loss | Windows | 50.694 | W/K |
| | Plane Elements | 138.806 | W/K |
| | Fabric | 170.554 | W/K |
| | Total heat Loss | 235.40 | W/K |
| | HLI | 2.299 | W/Km ² |

Ventilation

VENTILATION

Infiltration due to openings

Is there a draught lobby on main entrance

| | | | |
|----------------------------|--------------------------------|------|--------------------|
| No. of chimneys | <input type="text" value="1"/> | Room | <i>leave blank</i> |
| No. of open flues | <input type="text" value="0"/> | | |
| Passive, non-closable vent | <input type="text" value="1"/> | | |
| No. of intermittent fans | <input type="text" value="4"/> | | |

Structural air-tightness

| | | | |
|------------------------------------|---------------------------------|------------------|----------------------|
| Is there an air-tightness test | <input type="text" value="No"/> | (leave unticked) | <input type="text"/> |
| Air-permeability test result | <input type="text"/> | | |
| Structure type | Masonry | | |
| Is there a suspended timber floor | <input type="text" value="No"/> | | |
| No. of sheltered sides | <input type="text" value="3"/> | | |
| Attic hatch draught-proofed | <input type="text" value="0"/> | | |
| Attic hatch without draft proofing | <input type="text" value="1"/> | | |

Ventilation method

| | |
|------------------------------|--|
| Method | <input type="text" value="Natural Ventilation"/> |
| Specific Fan Power | <input type="text"/> |
| Heat Exchanger Efficiency | <input type="text"/> |
| Manufacturer | <input type="text"/> |
| Model | <input type="text"/> |
| No. of wet rooms | <input type="text"/> |
| External uninsulated ducting | <input type="text"/> |

Space Heating

SPACE HEATING

Individual heating

Heating System Properties

| | |
|-------------------------|---|
| Heating System Category | Central Heating System with radiators or underfloor heating |
| Sub Category 1 | Gas and oil boiler |
| Sub Category 2 | Gas boilers(including LPG) 1998 or later |
| Heating System | Regular non-condensing with automatic ignition |
| Heat Emitter Type | Radiators |
| Heating System Controls | Programmer, TRVs (likely to include bypass) |

Boiler interlock
 Delayed start thermostat present
 Integrated thermal store present

Pumps and Fans

| | number present | room stat | inside |
|--|--------------------------------|---------------------------------|----------------------------------|
| Central Heating Pump | <input type="text" value="1"/> | <input type="text" value="no"/> | <input type="text" value="yes"/> |
| Oil Boiler Pump | <input type="text" value="0"/> | <input type="text" value="no"/> | <input type="text" value="no"/> |
| Gas Boiler Flue Fan | <input type="text" value="1"/> | | |
| Warm air heating or fan coil radiators present | | <input type="text" value="no"/> | |

Heat Sources

| Primary | Product details (in library) | survey details |
|-----------------------------------|---|--|
| Type | <input type="text" value="Gas and oil boiler"/> | Heat % <input type="text" value="100"/> |
| Manufacturer | <input type="text" value="Baxi"/> | Fuel <input type="text" value="Mains gas"/> |
| Model | <input type="text" value="System 35/80 IE"/> | Heats water <input type="text" value="yes"/> |
| Seasonal Space Heating Efficiency | <input type="text" value="78.7"/> | |
| Efficiency Adjustment Factor | <input type="text" value="0.95"/> | design flow temp <input type="text"/> |
| | | daily operation <input type="text"/> |
| | | back up space heater fuel <input type="text"/> |
| | | back up space heater efficiency <input type="text"/> |
| | | back up water heater fuel <input type="text"/> |
| | | back up water heater efficiency <input type="text"/> |

| Secondary | Product details (in library) | survey details |
|-----------------------------------|--|--|
| Type | <input type="text" value="Room Heater"/> | Heat % <input type="text" value="10"/> |
| Manufacturer | <input type="text" value="n/a"/> | Fuel <input type="text" value="Smokeless"/> |
| Model | <input type="text" value="n/a"/> | Heats water <input type="text"/> |
| Seasonal Space Heating Efficiency | <input type="text" value="30"/> | |
| Efficiency Adjustment Factor | <input type="text" value="n/a"/> | design flow temp <input type="text"/> |
| | | daily operation <input type="text"/> |
| | | back up space heater fuel <input type="text"/> |
| | | back up space heater efficiency <input type="text"/> |
| | | back up water heater fuel <input type="text"/> |
| | | back up water heater efficiency <input type="text"/> |

Summer Internal Temp

Effective air change rate for summer period [ac/h]
 Summer mean external temperature *default*

Water Heating

WATER HEATING

Shower and Baths

| | | |
|----------|--------------------------------------|---|
| Bath | <input type="checkbox" value="yes"/> | |
| Shower 1 | | Type <input type="text" value="Mixer"/> |
| | | Mixer Type <input type="text" value="Vented Hot Water"/> |
| | | Flow rate <input type="text" value="7"/> <i>default</i> |
| | | Flow restrictor <input type="checkbox" value="no"/> |
| | | waste water heat recovery efficiency <input type="text"/> |
| | | waste water heat recovery utilisation factor <input type="text"/> |

Options

| | | | |
|---------------------|--------------------------------------|-----------------------------|-------------------------------------|
| Distribution losses | <input type="checkbox" value="yes"/> | Supplementary water heating | <input type="checkbox" value="no"/> |
| Storage losses | <input type="checkbox" value="yes"/> | Combi boiler | <input type="checkbox" value="no"/> |

Storage

| | | |
|---|---|--|
| Hot water storage indoors | <input type="checkbox" value="yes"/> | |
| Cylinder type | <input type="text" value="Cylinder, indirect"/> | |
| Storage volume | <input type="text" value="95"/> | |
| Is manufacturer's declared loss available | <input type="checkbox" value="no"/> | Insulation type <input type="text" value="Factory insulated"/> |
| Make and model | <input type="text"/> | Insulation thickness <input type="text" value="20"/> |
| Declared Loss | <input type="text"/> | |

| | |
|---------------------------|--|
| Primary circuit loss type | <input type="text" value="Boiler with uninsulated pipework and no cylinder thermostat"/> |
|---------------------------|--|

| | |
|---|-------------------------------------|
| Cylinder thermostat | <input type="checkbox" value="no"/> |
| Cylinder heated by boiler having separate time control of DHW | <input type="checkbox" value="no"/> |
| Is there a separate timer for heating the store | <input type="text"/> |
| Is store in an airing cupboard | <input type="text"/> |
| Low water usage (<125 l/p/d) | <input type="checkbox" value="no"/> |

Solar

Not applicable

Heat Source

Baxi System 35/80 IE Automatically filled from space heating

Lighting

LIGHTING

| | |
|----------------------------|----|
| Default linear fluorescent | 1 |
| Default Incandescent | 1 |
| Default Halogen Lamp | 3 |
| Default LED/CFL | 15 |

Renewables

RENEWABLES

There are no renewable entries for this survey

Evidence

| EVIDENCE (required) | |
|---|--|
| Survey Origin | Evidence Item |
| General | |
| 1 General - Letter of engagement | Letter of engagement |
| 2 General - Survey form, external pictures | Photo of front, rear, survey form, calculations, floor plans |
| Building | |
| 3 Building - Floors | N/A |
| 4 Building - Roofs | Photo of attic insulation |
| 5 Building - Rooms | N/A |
| 6 Building - Walls | Photo of wall cavity |
| 7 Building - Doors | Photo of front |
| 8 Building - Windows | Photo of glazing gap |
| 9 Building - Global Factors | |
| Ventilation | |
| 10 Ventilation - infiltration due to openings | Photo of chimney, intermittent fan, permanent vent, cooker extract |
| 11 Ventilation - structural airtightness | Photo of attic hatch draught-stripping |
| 12 Ventilation - Method | |
| Space Heating | |
| 13 Space Heating - Control and responsiveness | Photos of timer and TRV |
| 14 Space Heating - Pumps and Fans | Photo of flue fan |
| 15 Space Heating - Heat Sources | Photos of gas boiler, boiler plate and open fire |
| Water Heating | |
| 16 Water heating - options and storage | Photos of shower, bath, HW cylinder, HW cylinder insulation |
| 17 Water heating - solar | N/A |
| 18 Water heating - heat sources | N/A |
| Lighting | |
| 19 Lighting | Photos of lighting |
| Renewables | |
| 20 Renewables | N/A |

Results

RESULTS

Dwelling Dimensions

| | Area | Height | Volume |
|------------------|-----------------------------|----------------|-----------------------|
| Storey 1 | 51.92 m ² | 2.44 m | 126.69 m ³ |
| Storey 2 | 50.46 m ² | 2.69 m | 135.74 m ³ |
| Total | 102.38 m² | | |
| Living rm | 18.59 m² | 18.16 % | |

Building Fabric

| | Area | | Heat Loss |
|--------------|-----------------------------|----------------|-------------------------------|
| Floors | 51.92 m ² | Windows | 50.694 W/K |
| Roofs | 51.92 m ² | Plane Elements | 138.806 W/K |
| Walls | 86.6 m ² | Fabric | 170.554 W/K |
| Doors | 1.85 m ² | Total | 235.34 W/K |
| Windows | 19.36 m ² | | |
| Total | 211.65 m² | HUI | 2.299 W/Km² |

Results Tab

| | | |
|---------------|----------------------------------|----------------|
| [Building] | Fabric Heat Loss | 170.55 W/K |
| [Ventilation] | Ventilation Heat Loss | 64.79 W/K |
| [Water] | Output from main water heater | 2,282.88 kWh/y |
| [Lighting] | Annual energy used for lighting | 256.28 kWh/y |
| [Gains/Loses] | Annual space heating requirement | 7,918.61 kWh/y |

BER Results

| | Delivered Energy | Primary Energy | CO2 Emissions |
|--|------------------|----------------|---------------|
| Main Space Heating System, kWh/y | 9,532 | 10,485 | 1,935 |
| Secondary Space Heating System, kWh/y | 2,657 | 3,189 | 1,042 |
| Main Water Heating System, kWh/y | 3,053 | 3,359 | 620 |
| Supplementary Water Heating System, kW | 784 | 1,631 | 321 |
| Pumps, Fans, Electric Showers, kWh/y | 535 | 1,113 | 219 |
| Energy for Lighting, kWh/y | 256 | 533 | 105 |
| Total, kWh/y | 16,819 | 20,310 | 4,241 |
| per m² | 164.28 | 198.38 | 41.42 |

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