Lifespan SBEM User Manual v6.1.b

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Introduction

The National Calculation Model (NCM) is the agreed calculation methodology and procedure used to implement Building Regulations Compliance along with Energy Performance Certificates in Non-Domestic Buildings. The Simplified Building Energy Model (SBEM) is the calculation software, funded by the DCLG and developed by the BRE, used to implement the NCM. This calculation software does not have an integrated user interface and these have been developed by commercial entities, along with a basic free version provided by the BRE in the form of iSBEM.

Lifespan SBEM is graphical user interface (GUI) to the SBEM calculation engine which seeks to improve on the basic user interface funded by DCLG. It provides an intuitive and step by step approach to the energy assessment process which aims to make the whole process more accessible, straight forward and less error prone whilst being easily affordable.

As Lifespan SBEM is a graphical interface and undertakes very little in the way of calculation itself, this manual should be read in conjunction with the SBEM Technical Manual along with the NCM modelling guide and the iSBEM manual where relevant in order to fully understand the procedures and impact of each field. For the purpose of EPC generation, the user should be full conversant with the relevant Non-Domestic EPC conventions in force at the time of lodgement. Further details will be available from your accreditation scheme.

This manual will only cover the Lifespan SBEM software interface and not the SBEM calculation and methodologies.

Getting started with Lifespan SBEM

Pre-requisites

Lifespan SBEM is primarily aimed at the Energy Performance Certificate assessor. It is therefore recommended that you have undertaken a training course to become an Energy Assessor prior to using Lifespan SBEM in order to fully understand the calculation methodology and its requirements. There are many training courses available from commercial entities, many of whom will use Lifespan SBEM within their training. We would suggest that if you have used a basic SBEM interface within your training you will be more than ready to use Lifespan SBEM. If you have not undertaken a training course you will still be able to use Lifespan SBEM, however you may experience some difficulties.

Installation

Lifespan SBEM is entirely web based therefore there are no installation or project files to install or maintain. All files are kept within your account and can be downloaded any time you require. The software is compatible with any computer that is able to run a modern internet browser connected to the internet. The software will perform well on even the most basic PC, however if you currently

experience internet performance issues these are likely to be reflected in the performance of the software.

Registration

In order to use the software, you will need to register your details with us. In order to register, please visit www.lifespansbem.com/members/register.aspx or visit the relevant area of the parent website at www.lifespan-software.com.

The registration process will only take a minute and will give you the opportunity to provide your energy assessor details, where available. These will be verified by us at a later point; however it may be best to contact your scheme as we understand that some will issue you with a revised number for use with different software.

Once you have completed registration, please visit www.lifespansbem.com/members/login.aspx and use the username and password detailed during registration to log into the software. Once you have logged into the software you will be asked to add details of your Professional Indemnity Insurance cover. This is primarily for use when lodging Energy Performance Certificates therefore please ensure it is correct and matches the details held by your scheme if applicable. If you proceed to attempt lodgement in the future without correct details specified it is likely to cause issues and may lead to legal/ scheme conduct issues. If you are intending to use the software for training please specify dummy details, though please ensure these are revised if you expect to lodge in the future.

At this stage you will be able to access the SBEM interface using the 'View energy surveys' link on your Control Panel, however some functionality will be restricted.

Before you will be able to successfully lodge Energy Performance Certificates and be granted full functionality you will need to forward some details of your qualifications to our team. Full details of the requirements can be found at the 'Upgrade your training account to start lodging' link in the top of the 'Overview' area of your Control Panel.

The Control Panel

The control panel is the area of the software where you are able to manage the administrative aspects of your account. It has 3 main sections, 'Overview', 'My Account' and 'General Support/ Downloads'.

Overview

This contains links to access the interface software and related functionality.

'View energy surveys' opens up the interface software of the relevant version

'Import a survey' provides functionality to copy a survey from a linked company account.

‘Cancel an existing certificate’ provides functionality to cancel a certificate you have already lodged to the central government register. This is only available in certain circumstances.

‘Export property list’ exports a list of properties you have lodged through Lifespan SBEM.

‘Historic surveys’ opens up details of software and surveys lodged in previous versions of Lifespan SBEM.

My Account

‘Edit profile’ allows you to edit your name, company details and email address. Please ensure these are kept up to date as they will be attributed to the surveys you produce and used by us to contact you.

‘Account statement’ details the financial transactions undertaken at lodgement etc. ‘Add funds’ allows you to credit your account prior to any transactions.

‘Current fees’ details the current fees applicable to your account.

‘Manage professional indemnity insurance’ allows you to review and update the insurance details attributed to your account and surveys.

‘Set up new company account’ allows you to set up a company account to fund multiple assessor accounts.

‘Link to company account’ allows you to link your account to an already existing company account.

‘Please register your data gatherers’ allows you to register any data gatherers you use. These will be required to be recorded against any lodgements you have made where data gathers have been used.

‘Set up automatic lodgement’ allows you to link your Lifespan SBEM account to your accreditation scheme where applicable.

General Support/Downloads

This area provides general support details and any other information that may change over time.

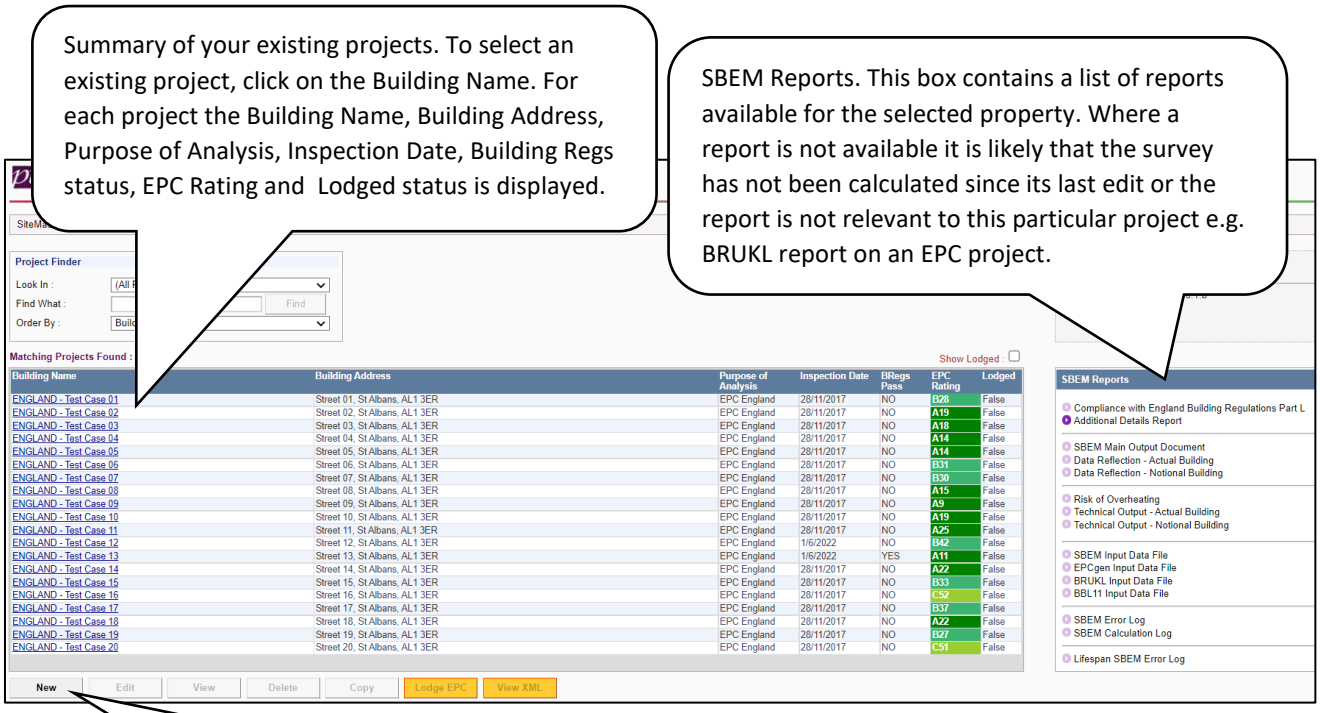
The Lifespan SBEM Interface

Clicking on the ‘View energy surveys’ button of the ‘Overview’ area in your Control Panel will open the Lifespan SBEM interface.

The Survey Summary Screen

The initial screen displays a summary of any surveys you have already undertaken along with providing access to relevant reports associated with them. It is also the area that grants access to other tools

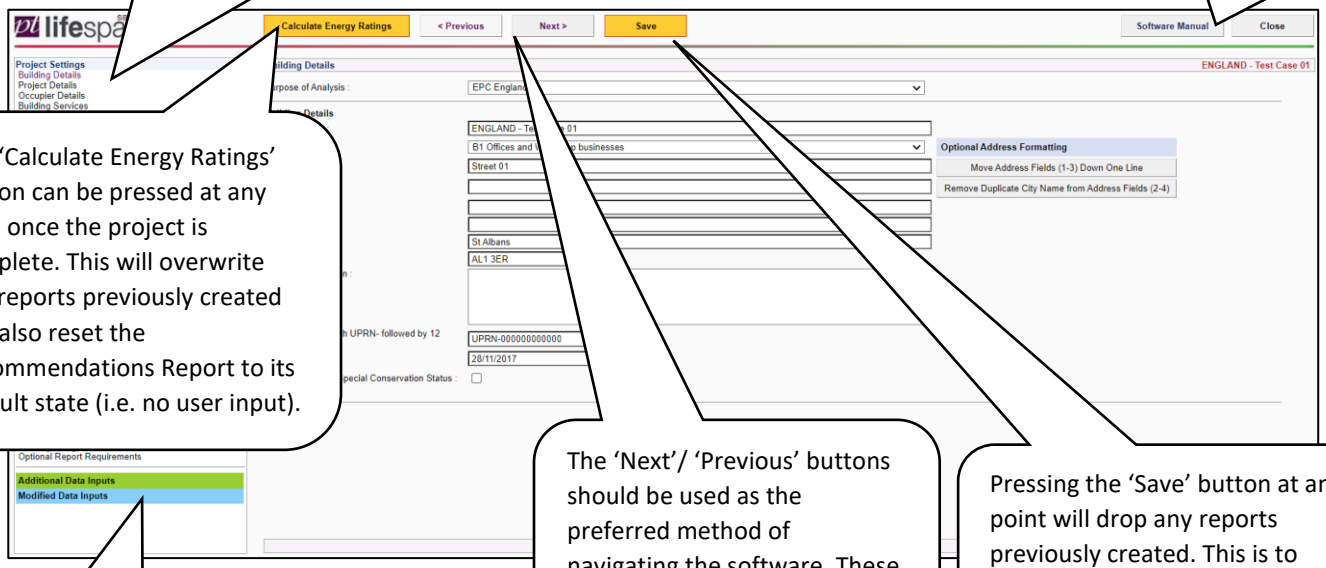
including integrated lodgement and summary tools specific to Lifespan along with providing access to your projects and new projects.



Lifespan SBEM Interface – General Overview

The pane on the left-hand side summarises the sections within Lifespan SBEM that must be completed for each project. You may navigate by clicking on each section directly in the pane or by using the 'Next'/ 'Previous' buttons at the bottom of the page. Ideally you should work from beginning to end however you are able to skip back and forth, though some features reference the library you create initially therefore this should be considered. The section you are currently in will be highlighted a different colour.

The software manual is available to download at all times.



The 'Calculate Energy Ratings' button can be pressed at any time once the project is complete. This will overwrite any reports previously created and also reset the Recommendations Report to its default state (i.e. no user input).

The 'Next'/ 'Previous' buttons should be used as the preferred method of navigating the software. These will validate data on the screen for errors/ omissions.

Pressing the 'Save' button at any point will drop any reports previously created. This is to prevent any reports from reflecting the data inaccurately.

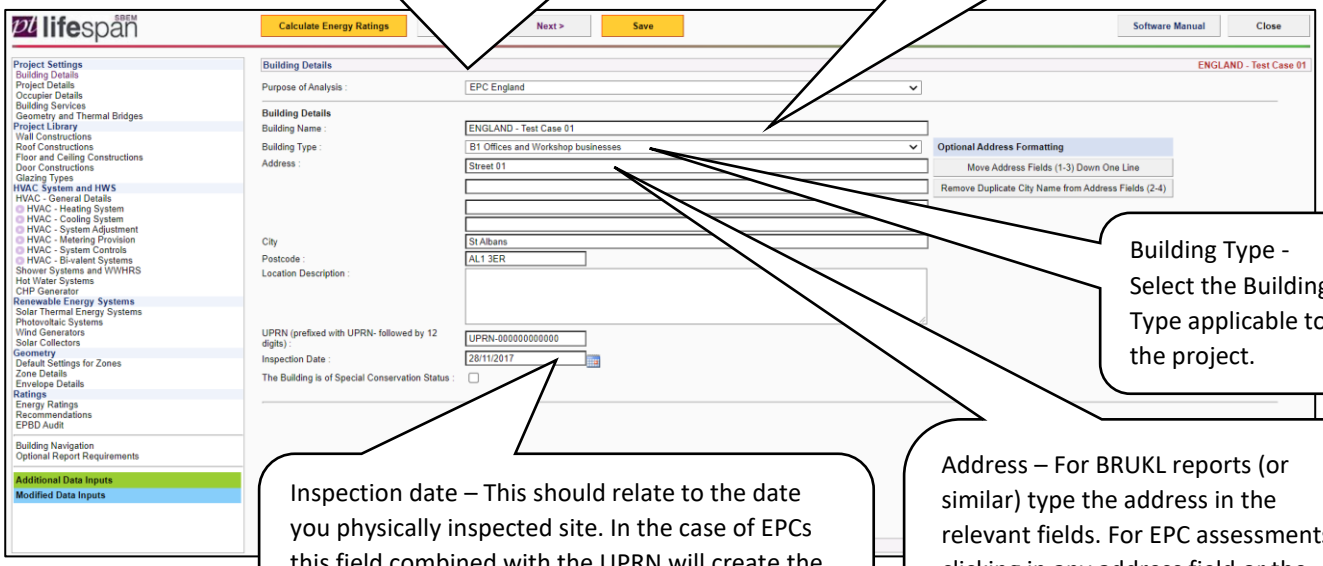
Any additional, or modified data inputs introduced in Lifespan SBEM v6.1.b will be highlighted lime green for additional data inputs or light blue for modified data inputs.

Project Settings

Building Details

Purpose of analysis – Select the relevant purpose of analysis from the drop down. This should relate to the purpose of the assessment you are undertaking and will dictate some of the reports generated. The selections available will be restricted according to the calculation engine version.

Building Name - Provide a building name for your reference.

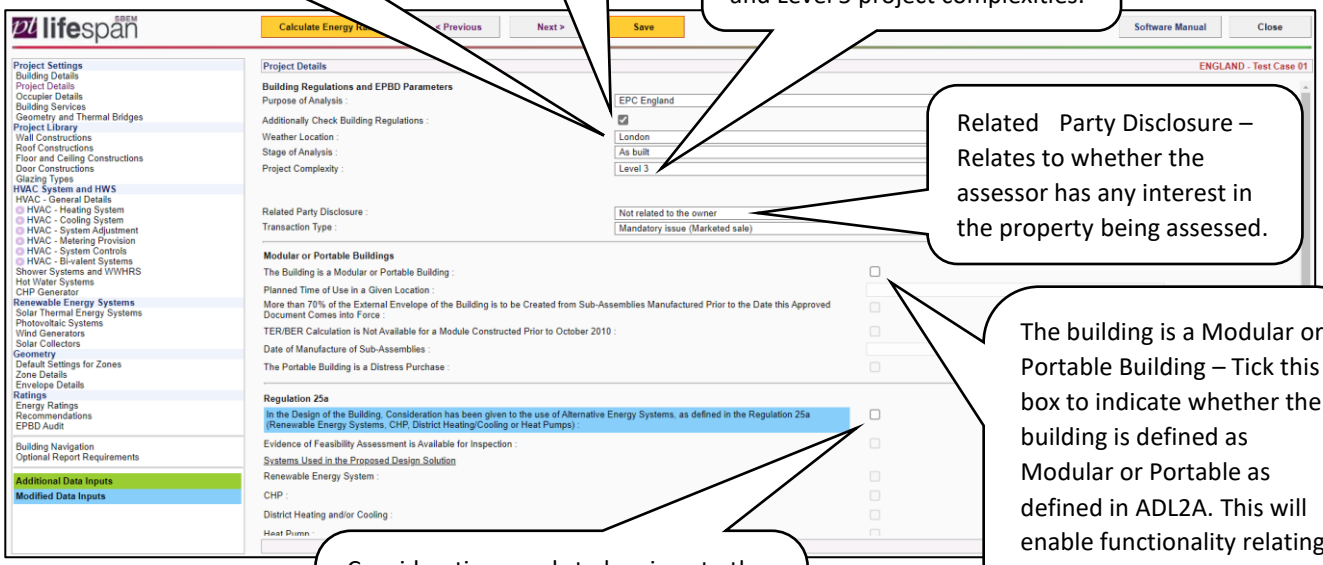


Building Type - Select the Building Type applicable to the project.

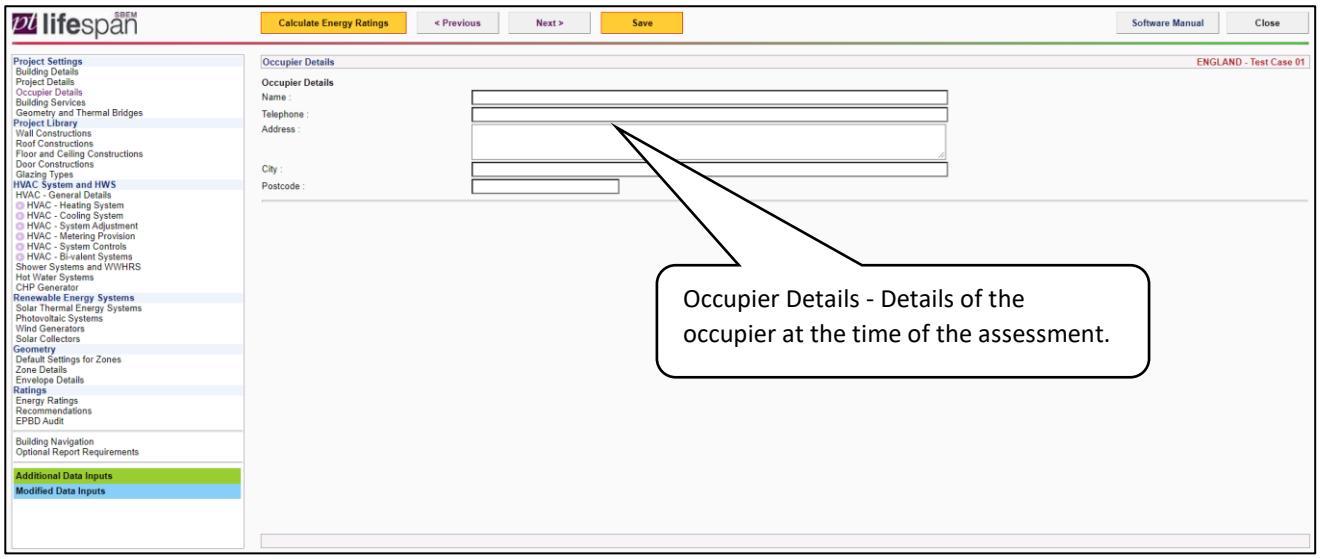
Inspection date – This should relate to the date you physically inspected site. In the case of EPCs this field combined with the UPRN will create the Report Reference Number (RRN) therefore no two submissions may have the same combinations.

Address – For BRUKL reports (or similar) type the address in the relevant fields. For EPC assessments, clicking in any address field or the UPRN field will open a pop- up box for the relevant address register. Details can be found in the address search area of the manual.

Project Details

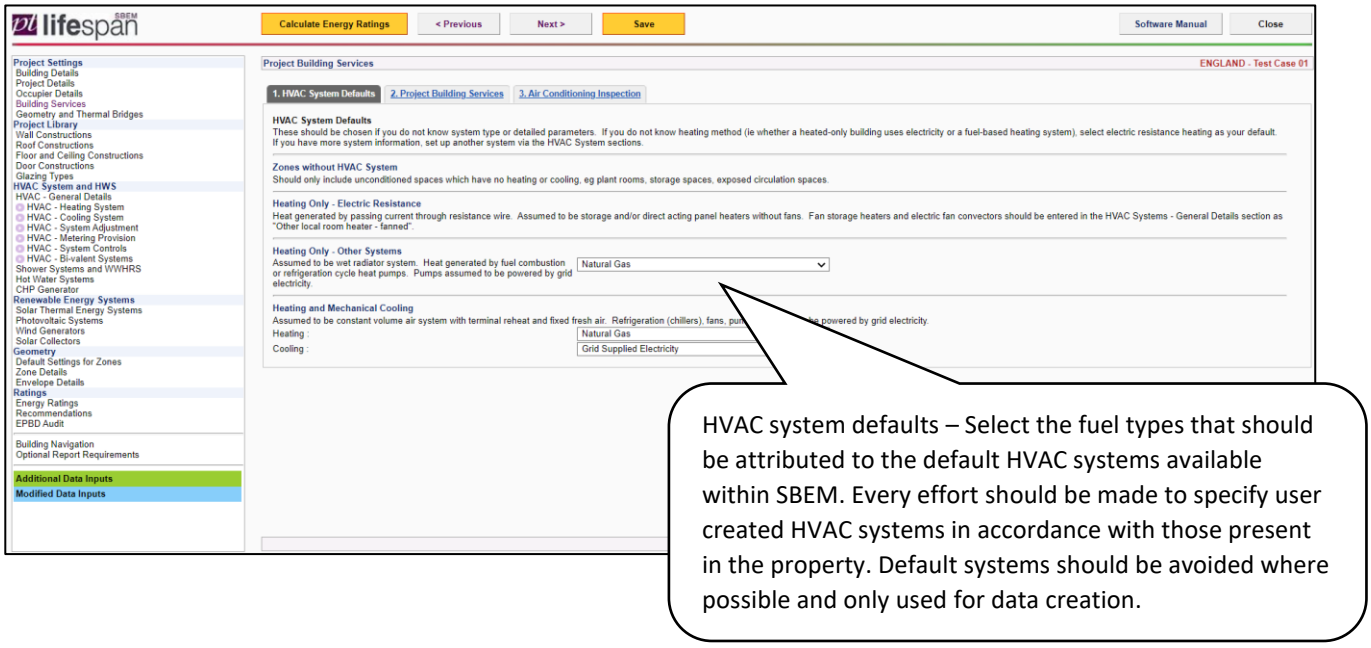


Occupier Details

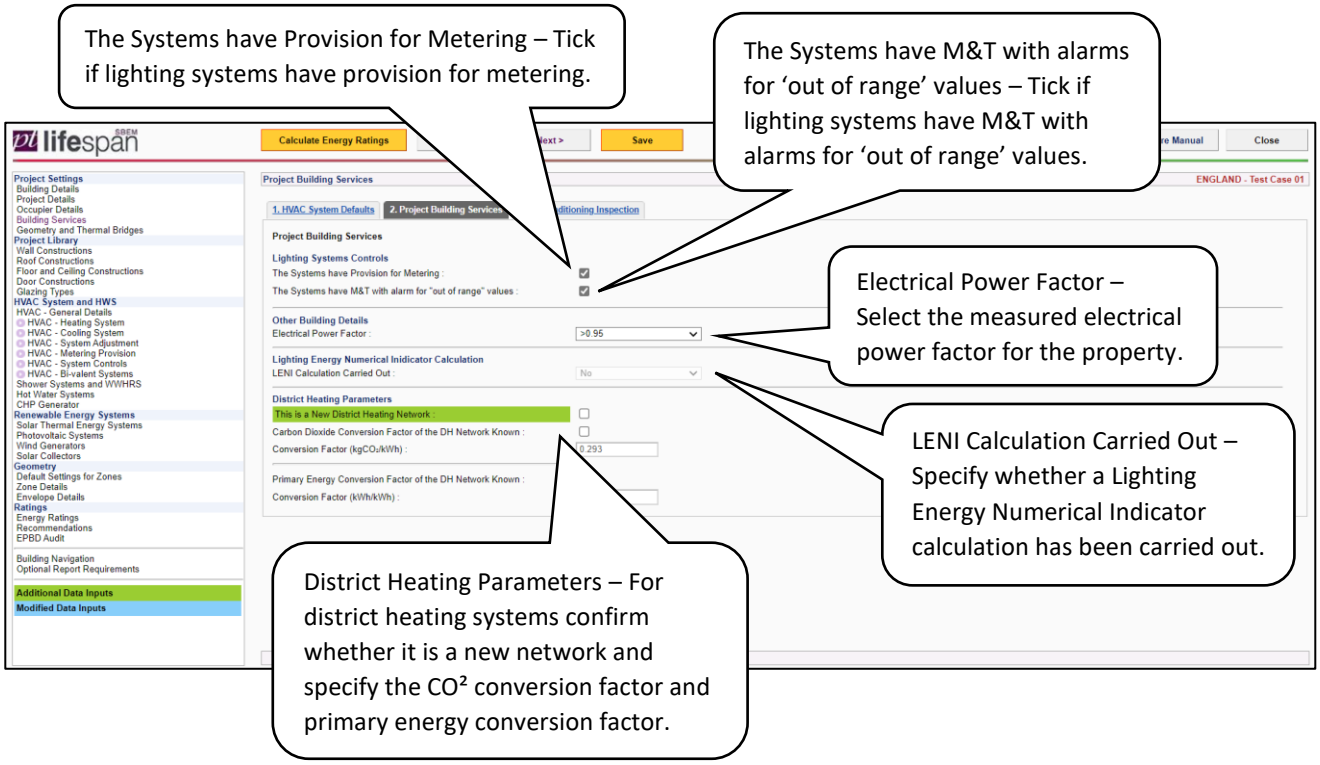


Building Services

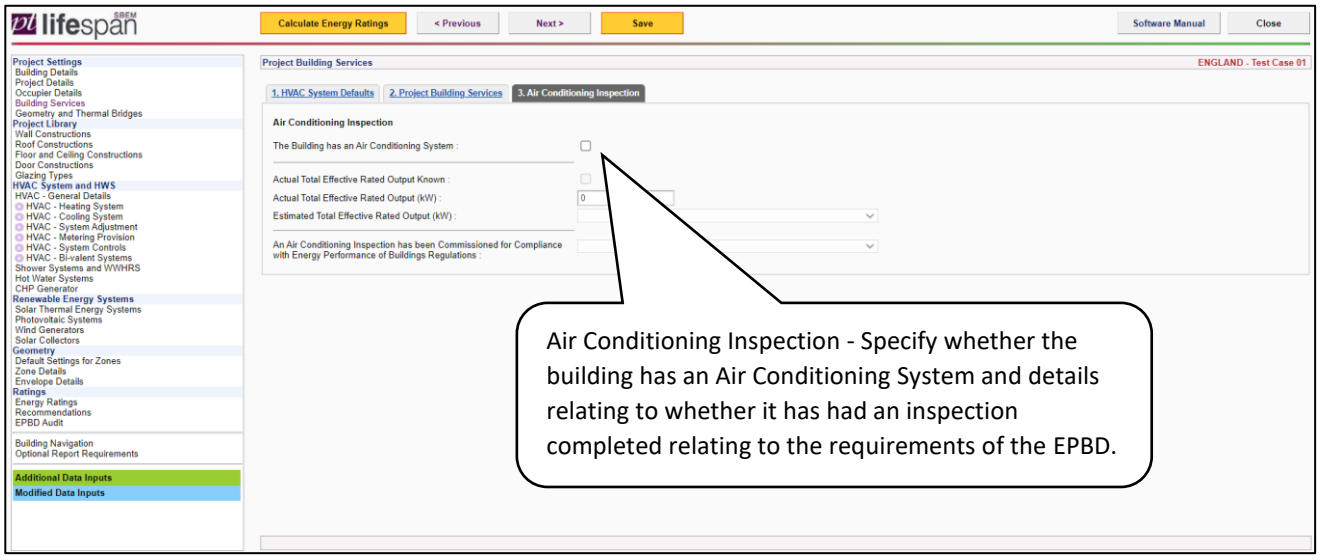
HVAC System Defaults



Project Building Services



Air Conditioning Inspection

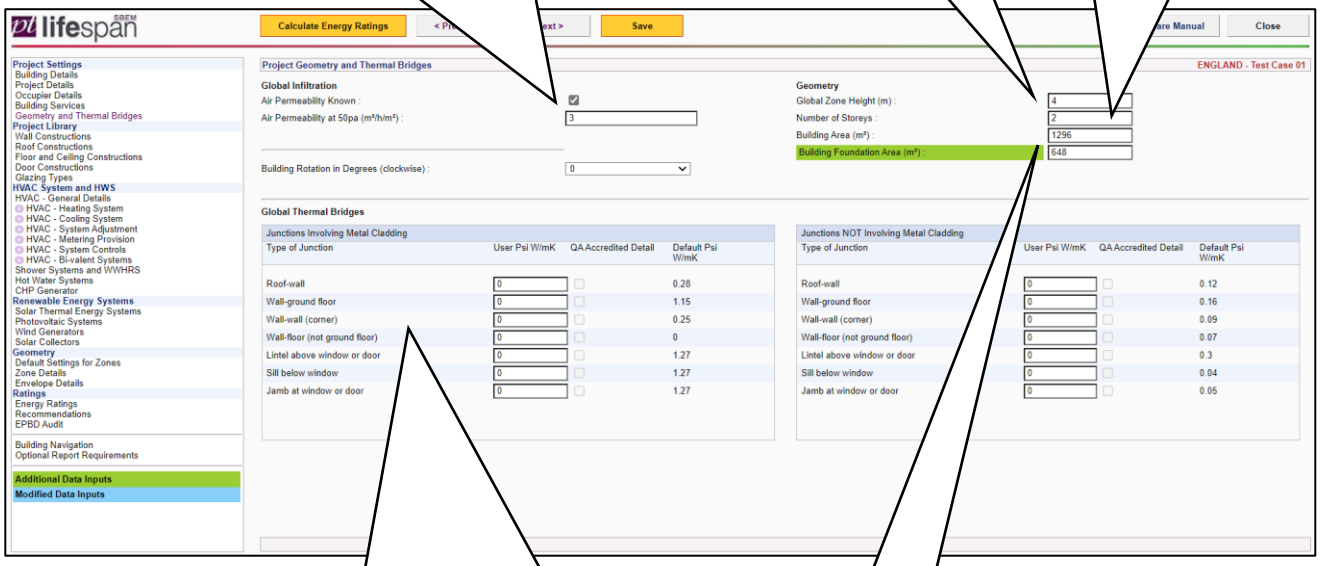


Project Geometry and Thermal Bridges

Global Zone Height – Specify the most commonly occurring Zone Height.

Number of storeys – Enter the maximum number of storeys in the building being assessed.

Air Permeability Known – Specify whether the Air Permeability is known and its value at 50pa.



Global Thermal Bridges – Where Global Thermal Bridges have been calculated they can be specified here. These must be calculated by a suitably qualified person in line with ADL2A.

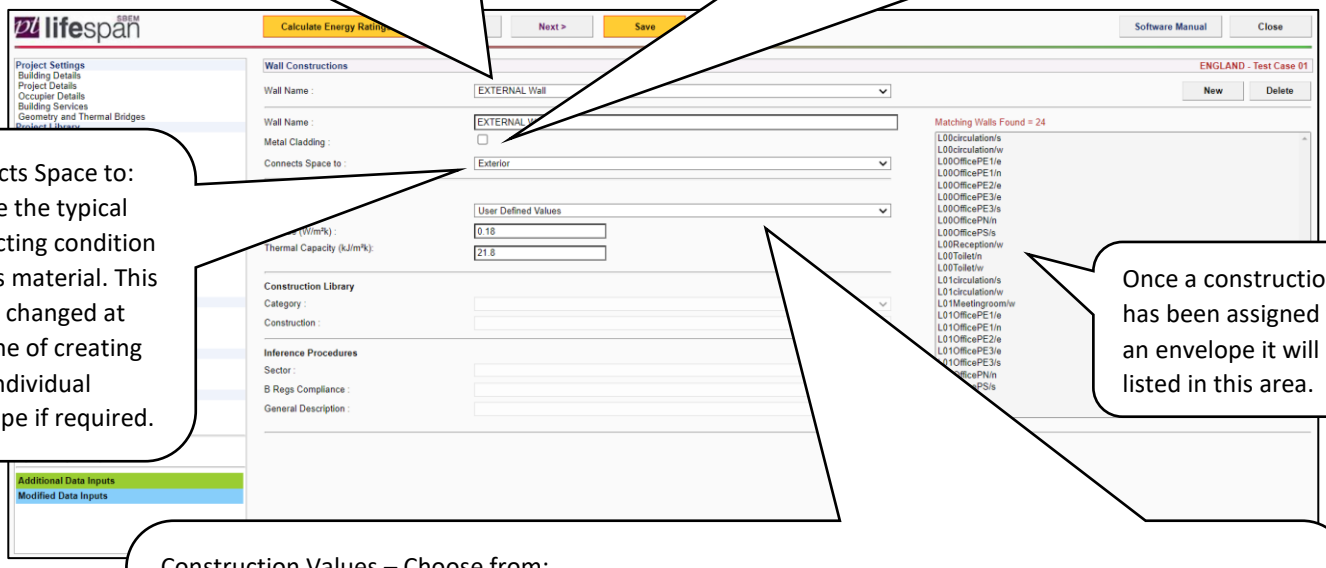
Area m² - Enter the total building and building foundation areas.

Project Library

Wall Constructions

Wall Name – Provide a wall name of your choosing. We recommend using a name or format that can be easily recognised when analysing information later.

Metal Cladding – For user defined values tick this box if the material incorporates metal cladding (not simply a rainscreen) and the U value has been calculated using the Combined Method (BS EN ISO 6946) for simple constructions. SBEM will make appropriate modifications to the U value entered to account for the more complex cladding calculation.



Connects Space to: Choose the typical connecting condition for this material. This can be changed at the time of creating each individual envelope if required.

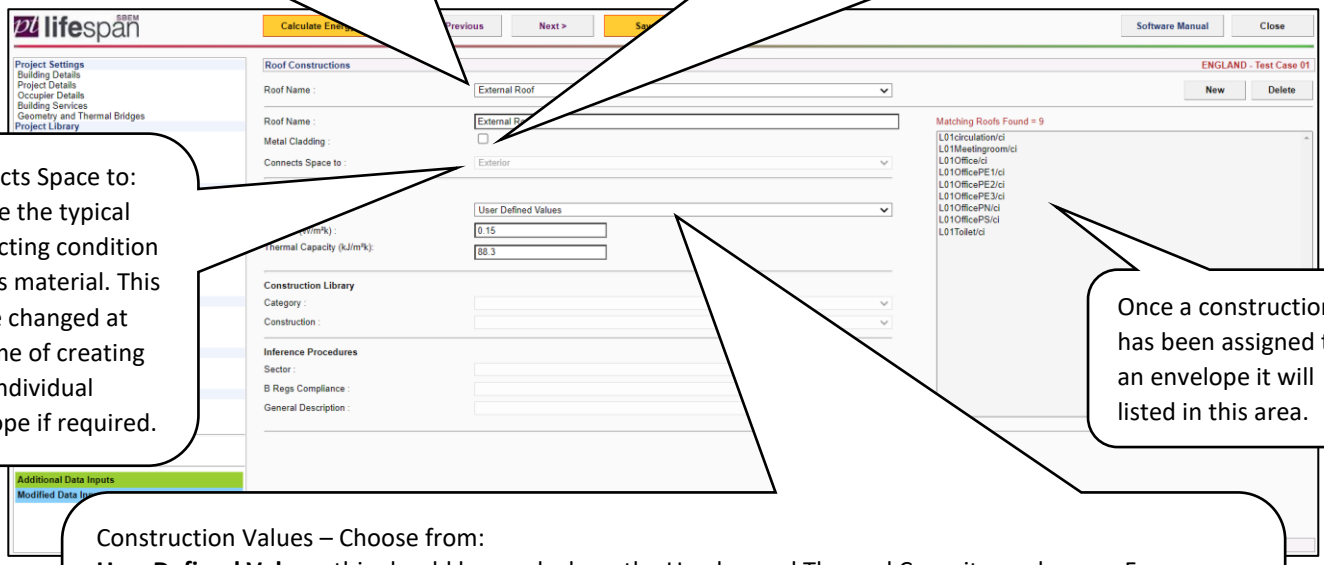
Once a construction has been assigned to an envelope it will listed in this area.

Construction Values – Choose from:
User Defined Values: this should be used where the U-value and Thermal Capacity are known. For building regulations applications values are expected to be known.
Construction Library: This will permit you to infer the values from the NCM Construction database by selecting from 2 descriptive fields.
Inference Procedures: This will permit you to infer values from the NCM Construction database according to Sector, the Building Regulations applicable at the time of construction along with a general description.

Roof Constructions

Roof Name – Provide a roof name of your choosing. We recommend using a name or format that can be easily recognised when analysing information later.

Metal Cladding – For user defined values tick this box if the material incorporates metal cladding (not simply a rainscreen) and the U value has been calculated using the Combined Method (BS EN ISO 6946) for simple constructions. SBEM will make appropriate modifications to the U value entered to account for the more complex cladding calculation.

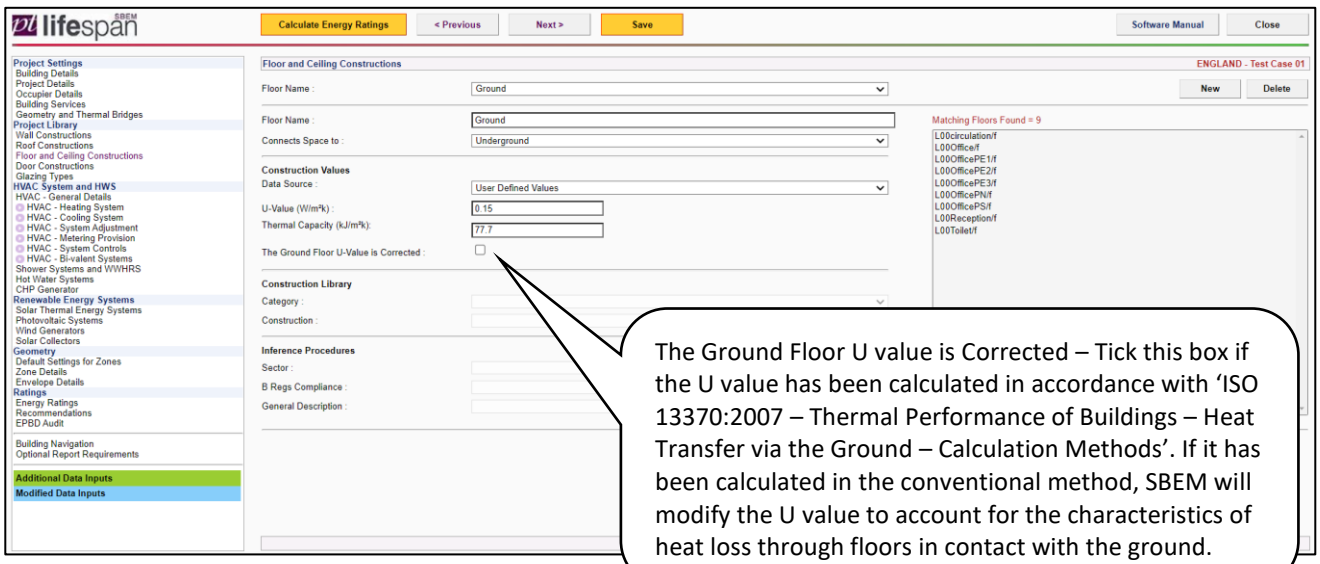


Connects Space to: Choose the typical connecting condition for this material. This can be changed at the time of creating each individual envelope if required.

Once a construction has been assigned to an envelope it will listed in this area.

Construction Values – Choose from:
User Defined Values: this should be used where the U-value and Thermal Capacity are known. For building regulations applications values are expected to be known.
Construction Library: This will permit you to infer the values from the NCM Construction database by selecting from 2 descriptive fields.
Inference Procedures: This will permit you to infer values from the NCM Construction database according to Sector, the Building Regulations applicable at the time of construction along with a general description.

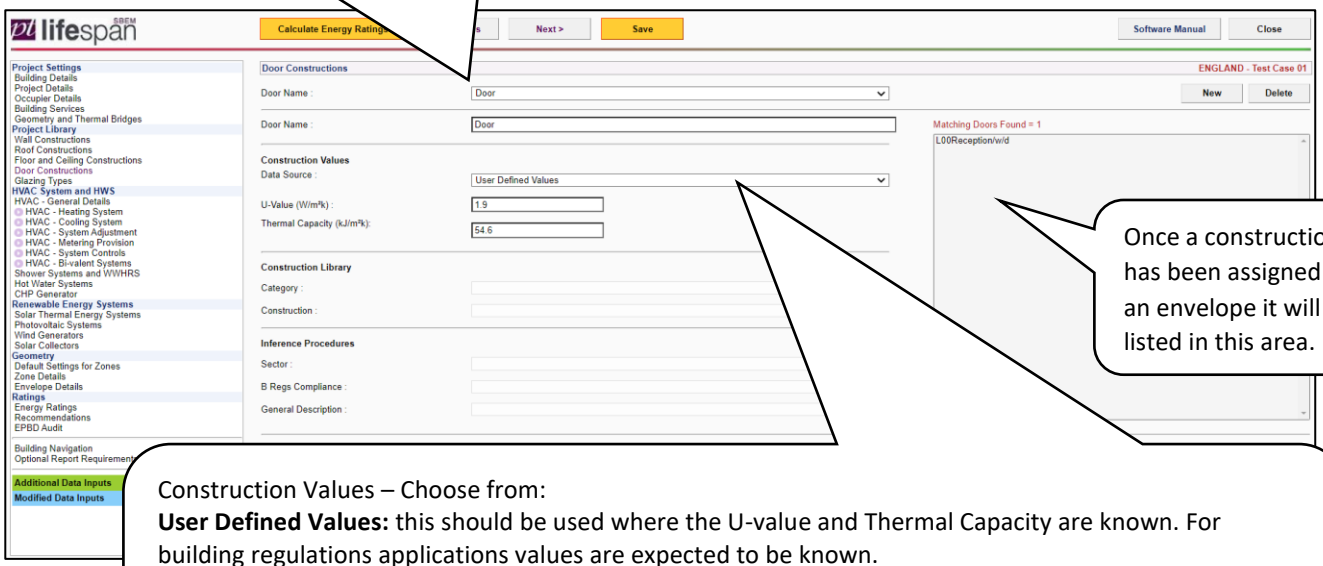
Floor and Ceiling Constructions



The Ground Floor U value is Corrected – Tick this box if the U value has been calculated in accordance with 'ISO 13370:2007 – Thermal Performance of Buildings – Heat Transfer via the Ground – Calculation Methods'. If it has been calculated in the conventional method, SBEM will modify the U value to account for the characteristics of heat loss through floors in contact with the ground.

Door Constructions

Door Name – Provide a door name of your choosing. We recommend using a name or format that can be easily recognised when analysing information later.

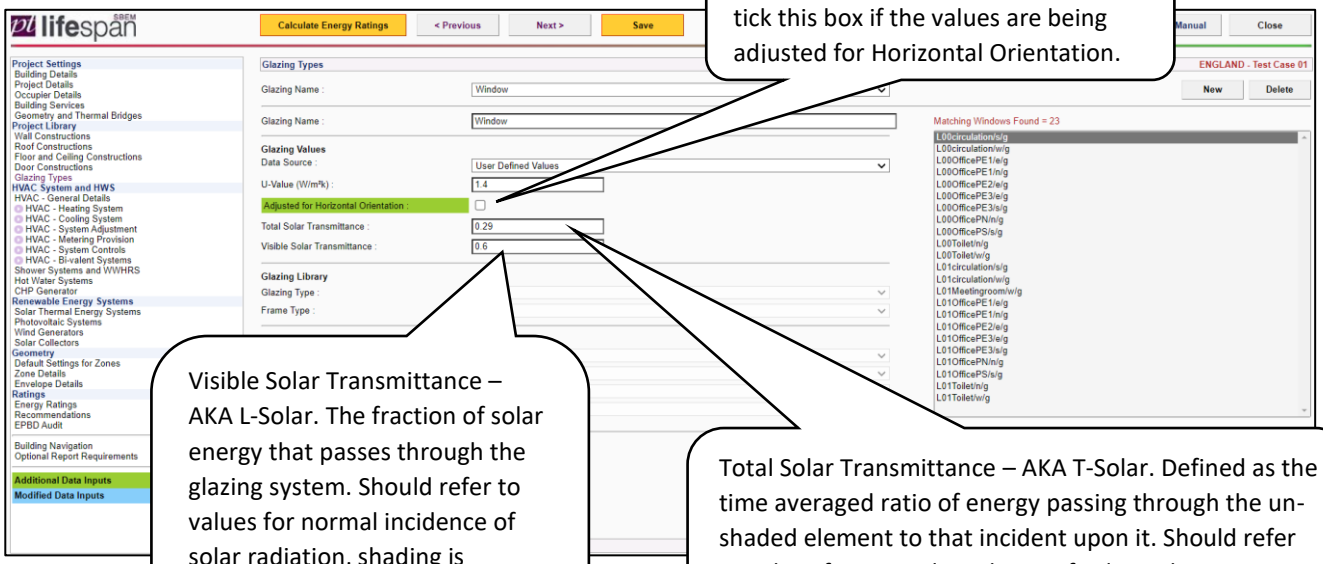


Once a construction has been assigned to an envelope it will listed in this area.

Construction Values – Choose from:
User Defined Values: this should be used where the U-value and Thermal Capacity are known. For building regulations applications values are expected to be known.
Construction Library: This will permit you to infer the values from the NCM Construction database by selecting from 2 descriptive fields.
Inference Procedures: This will permit you to infer values from the NCM Construction database according to Sector, the Building Regulations applicable at the time of construction along with a general description.

Glazing Types

Adjusted for Horizontal Orientation – tick this box if the values are being adjusted for Horizontal Orientation.

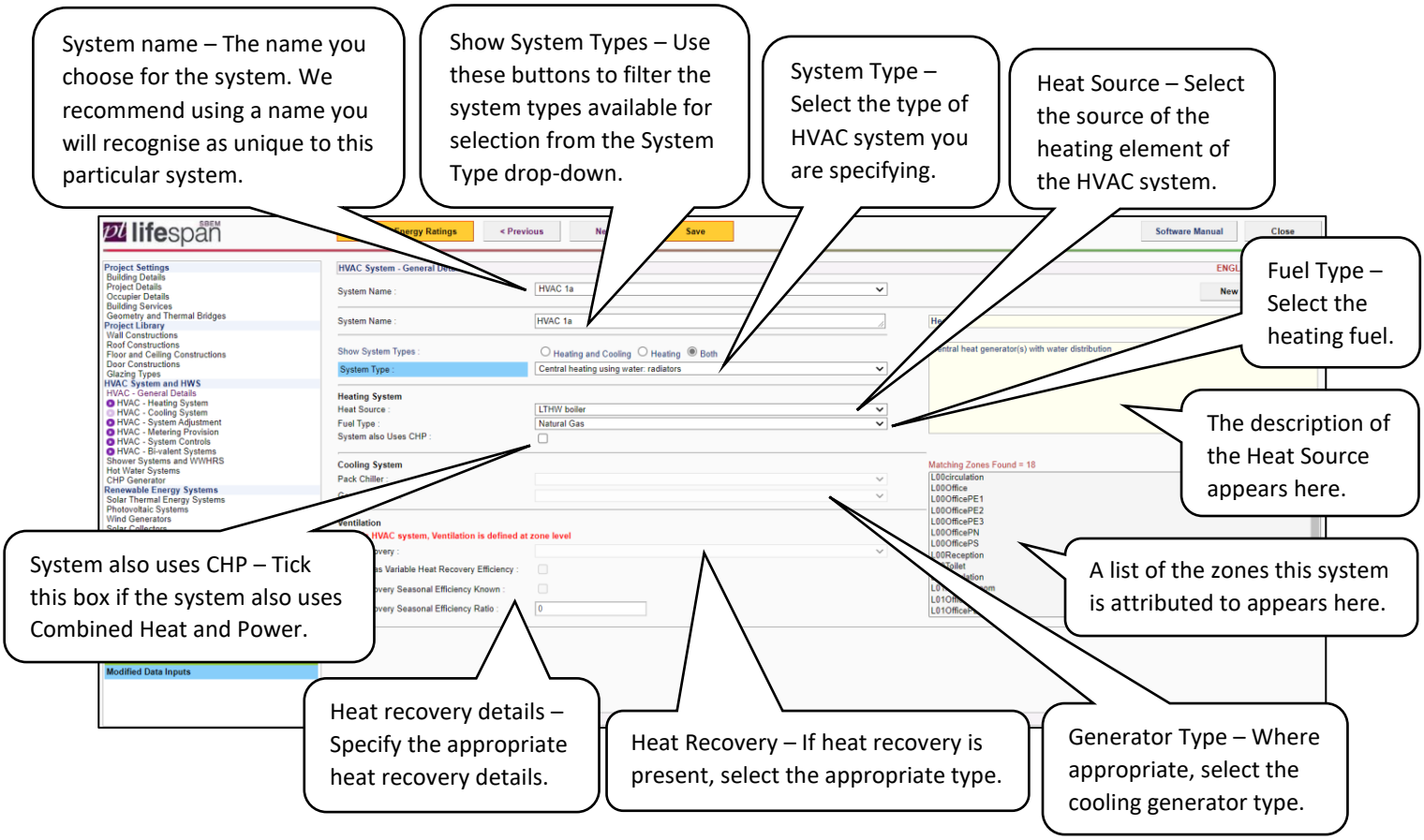


Visible Solar Transmittance – AKA L-Solar. The fraction of solar energy that passes through the glazing system. Should refer to values for normal incidence of solar radiation, shading is accounted for in the geometry section.

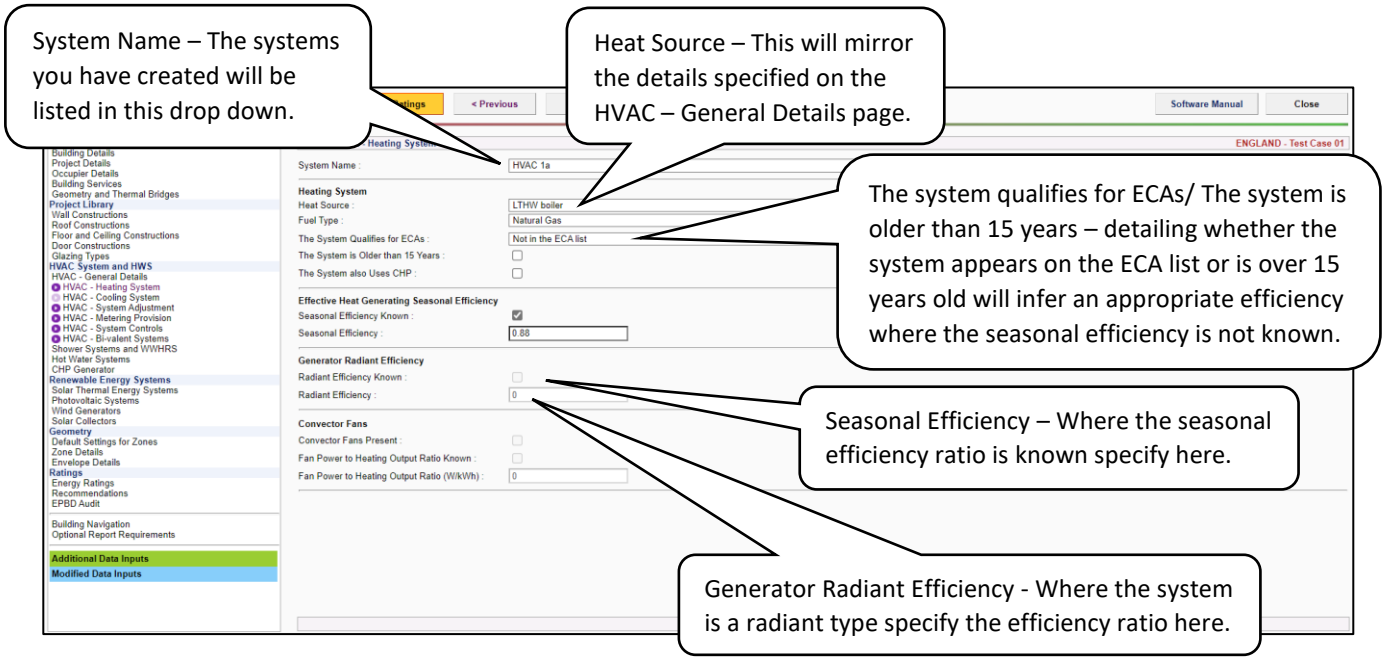
Total Solar Transmittance – AKA T-Solar. Defined as the time averaged ratio of energy passing through the un-shaded element to that incident upon it. Should refer to values for normal incidence of solar radiation, shading is accounted for in the geometry section.

HVAC System and HWS

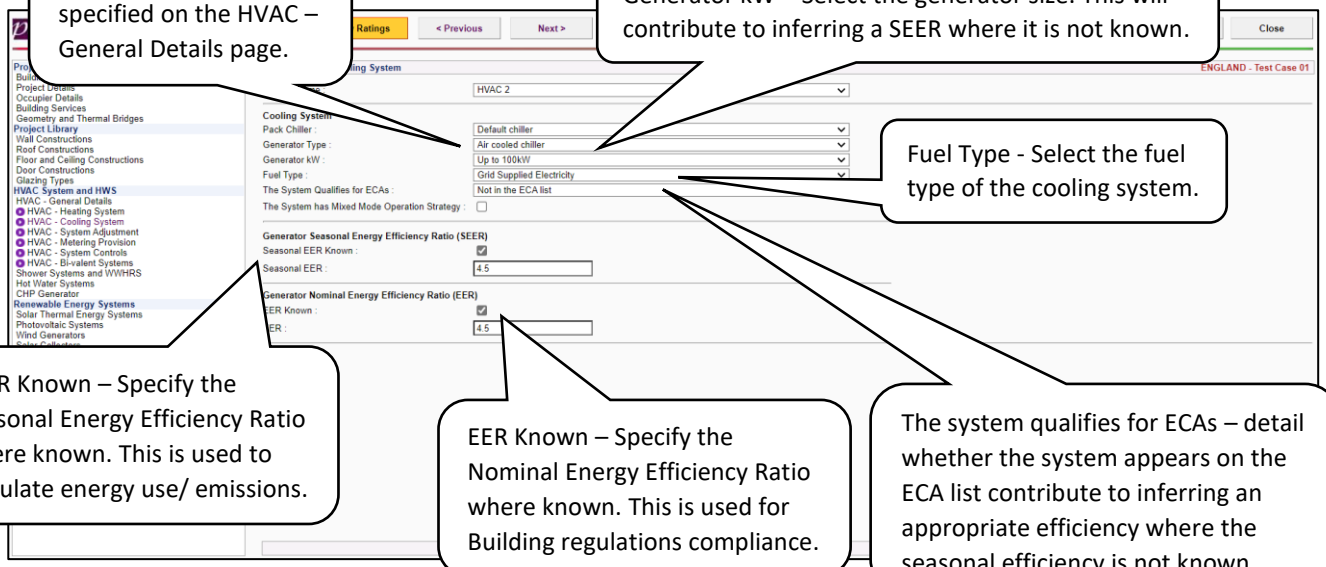
HVAC – General Details



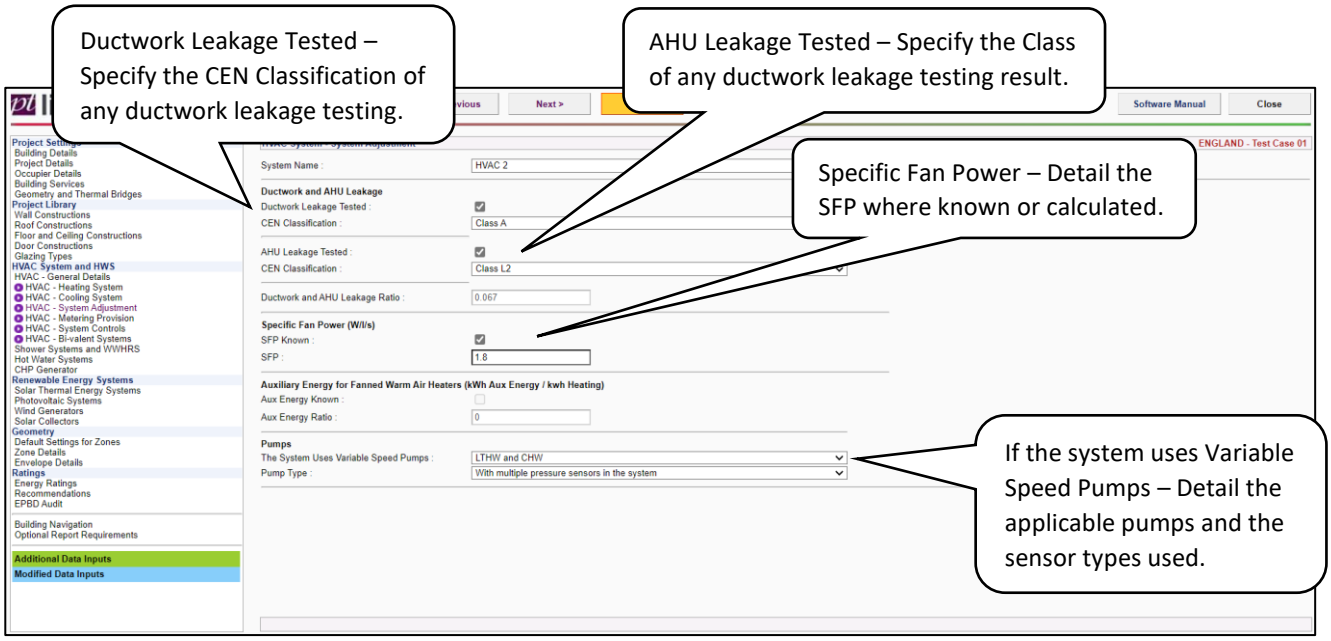
HVAC – Heating System



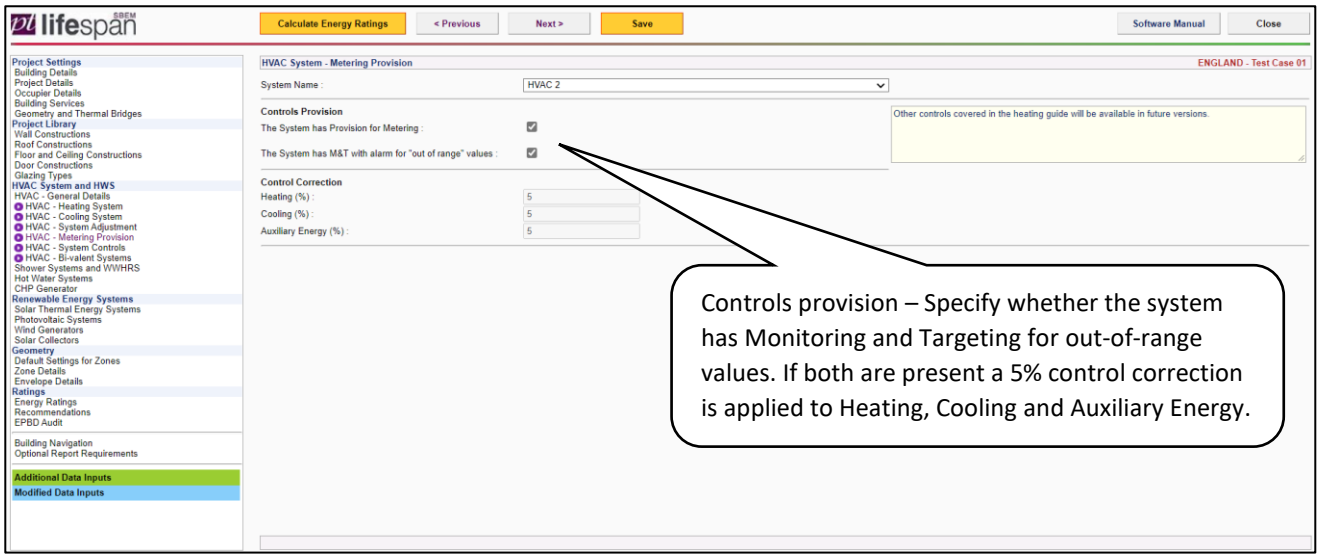
HVAC – Cooling System



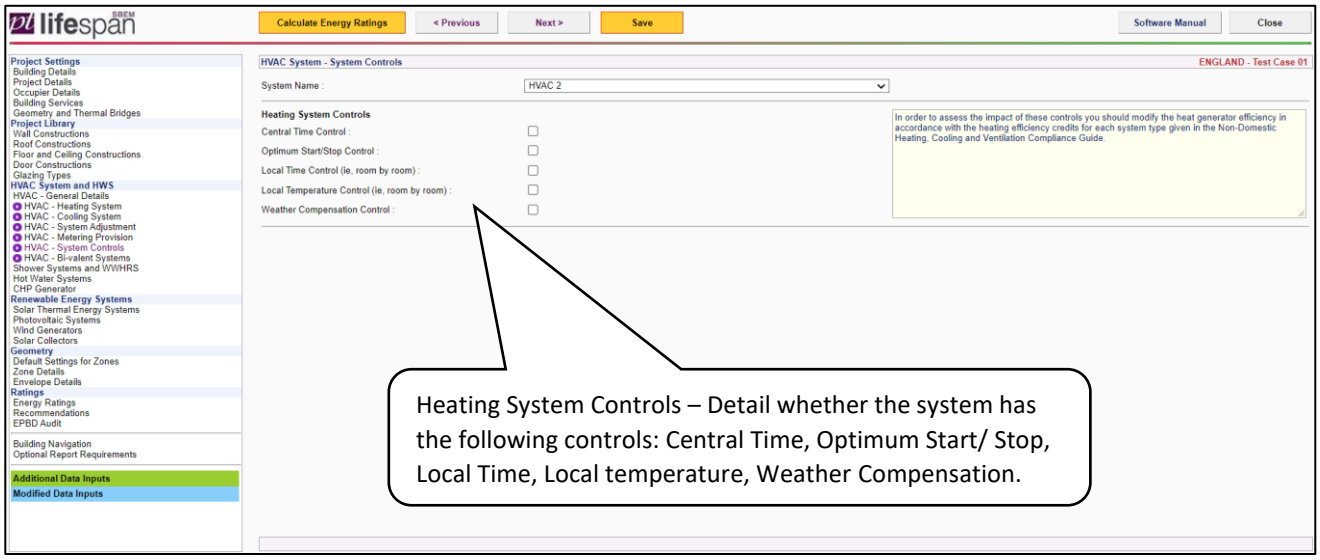
HVAC – System Adjustments



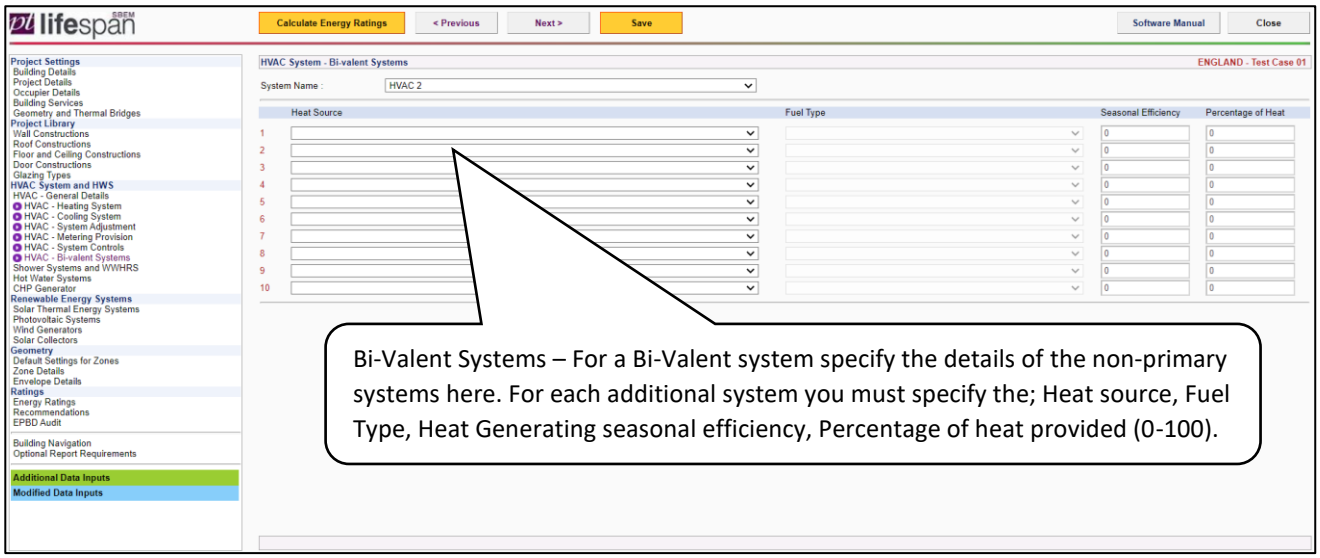
HVAC – Metering Provision



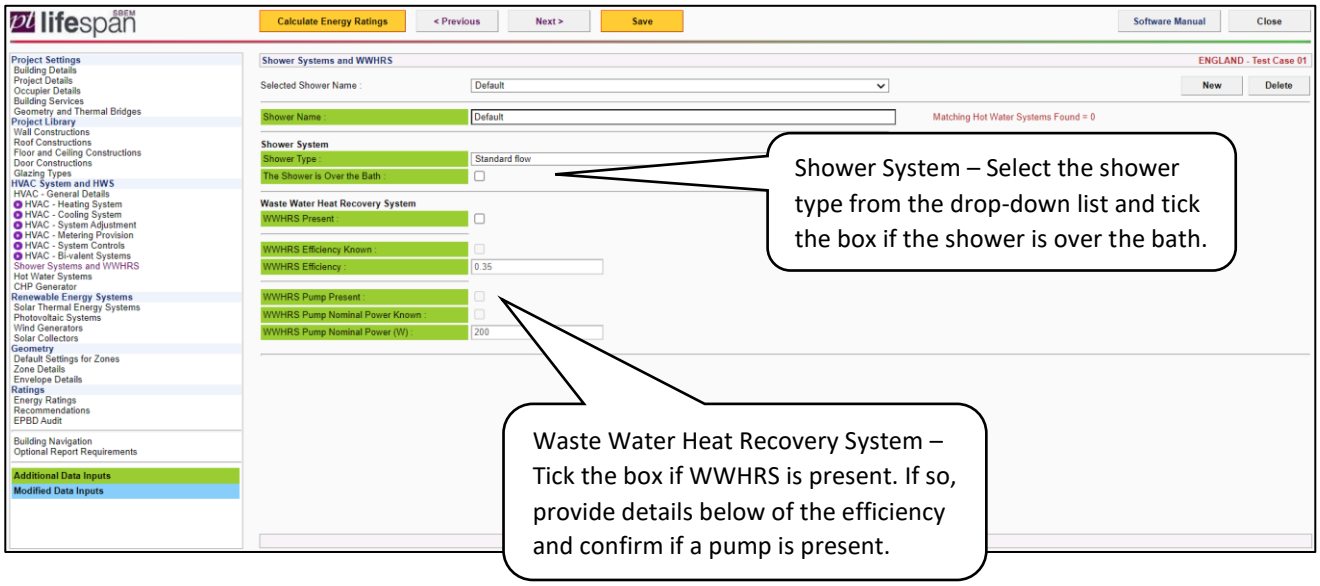
HVAC – System Controls



HVAC – Bi-valent Systems

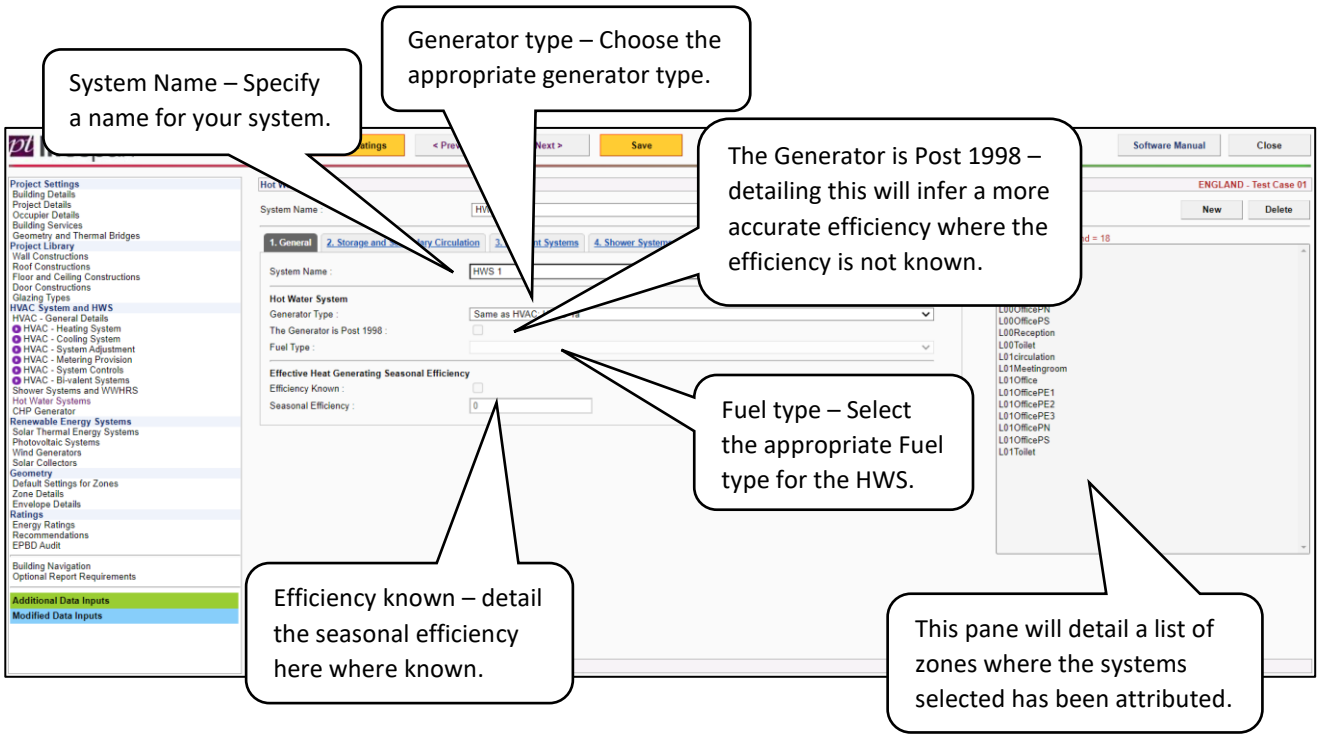


Shower Systems and WWHRS

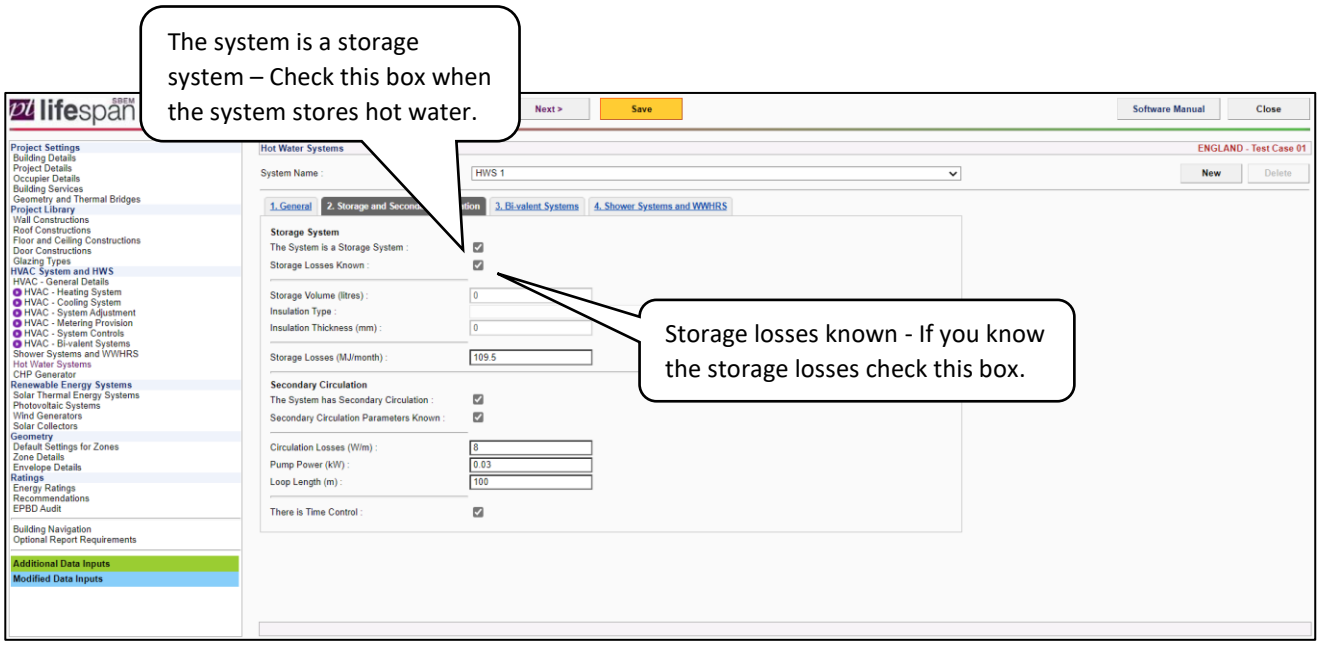


Hot Water Systems

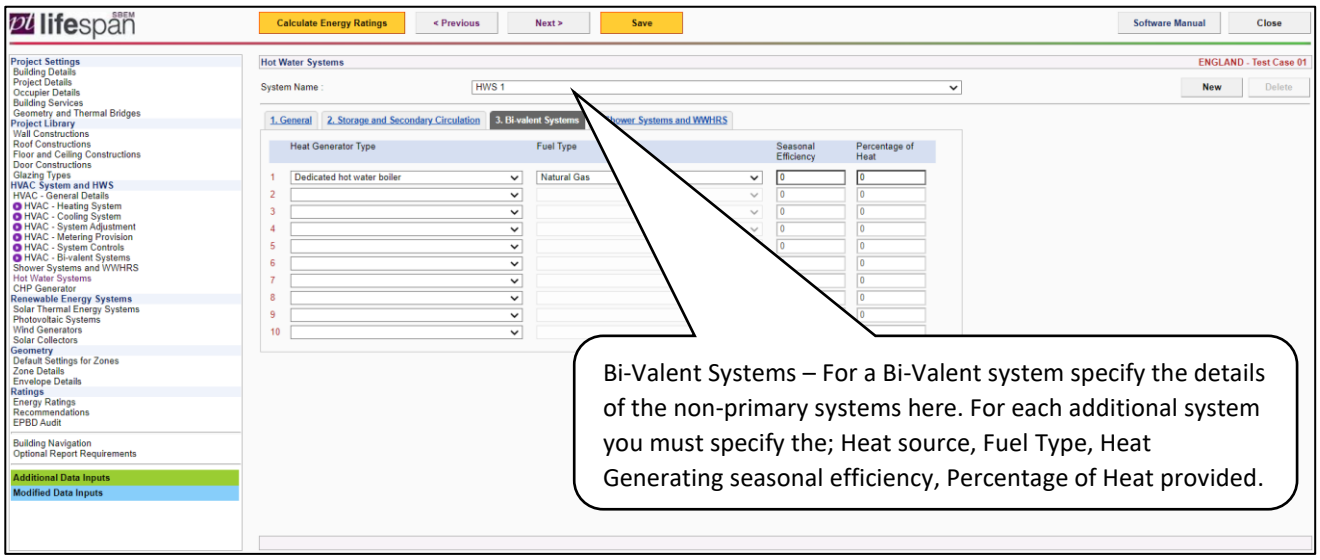
General



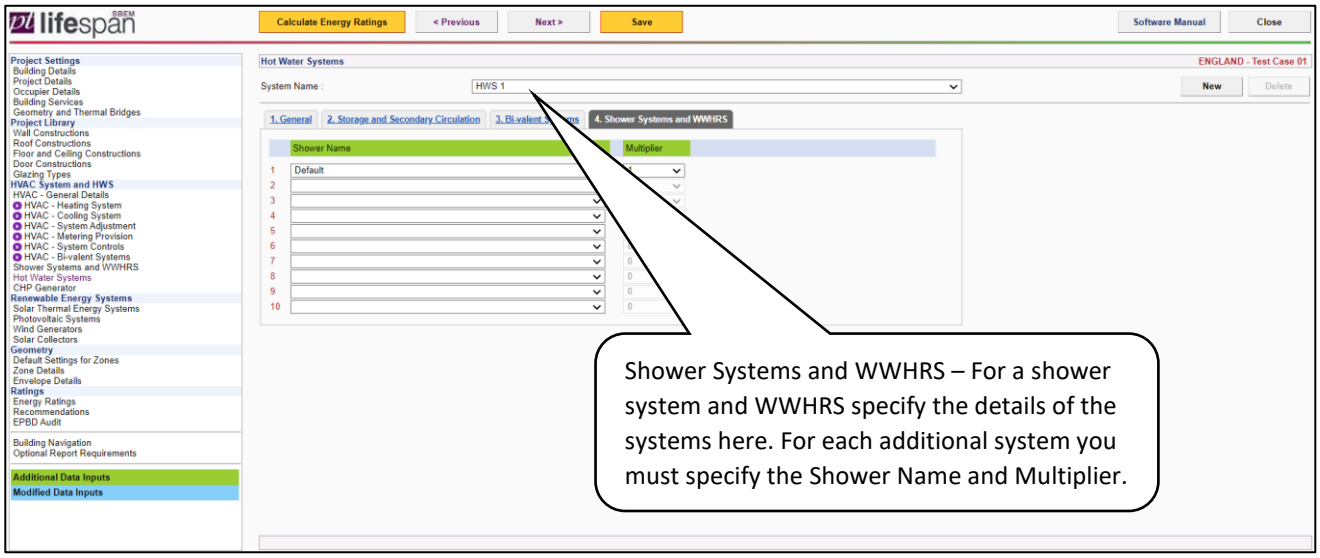
Storage and Secondary Circulation



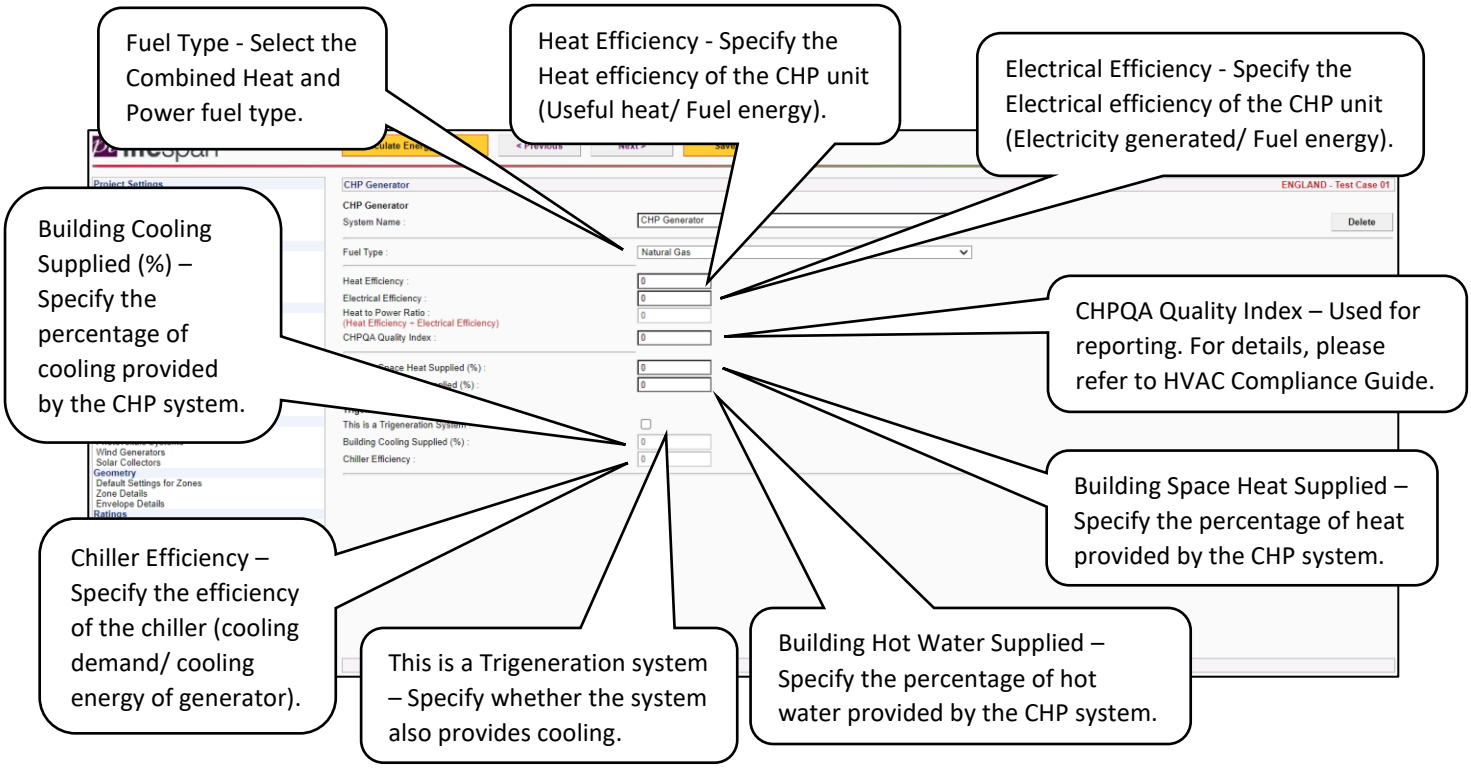
Bi-valent Systems



Shower Systems and WWHRS



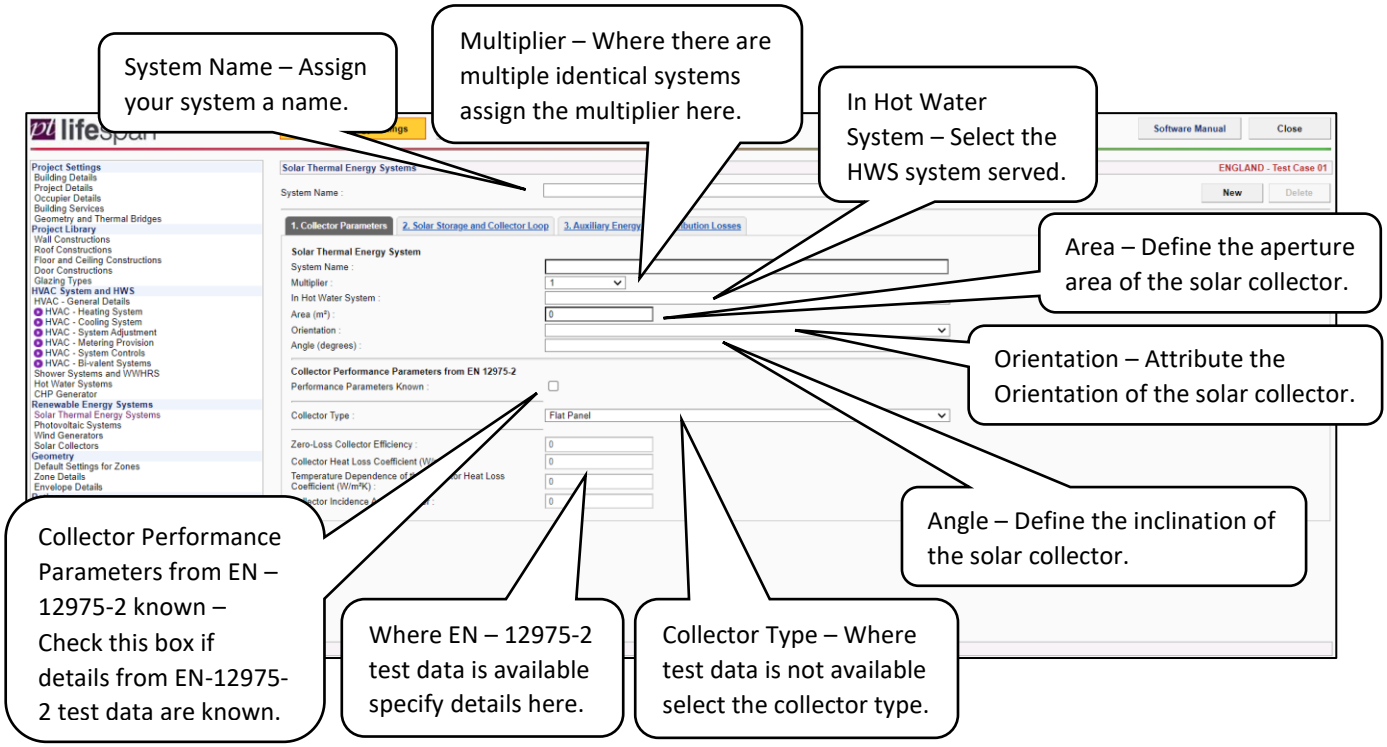
CHP Generator



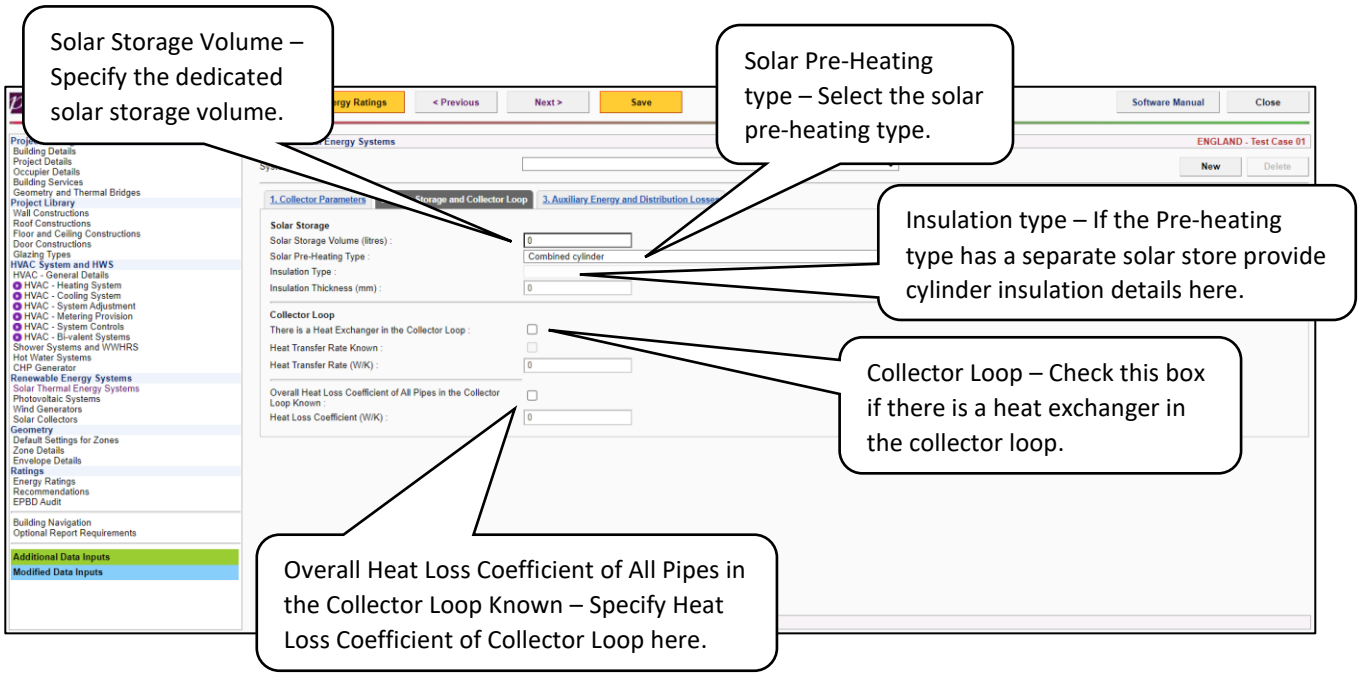
Renewable Energy Systems

Solar Thermal Energy Systems

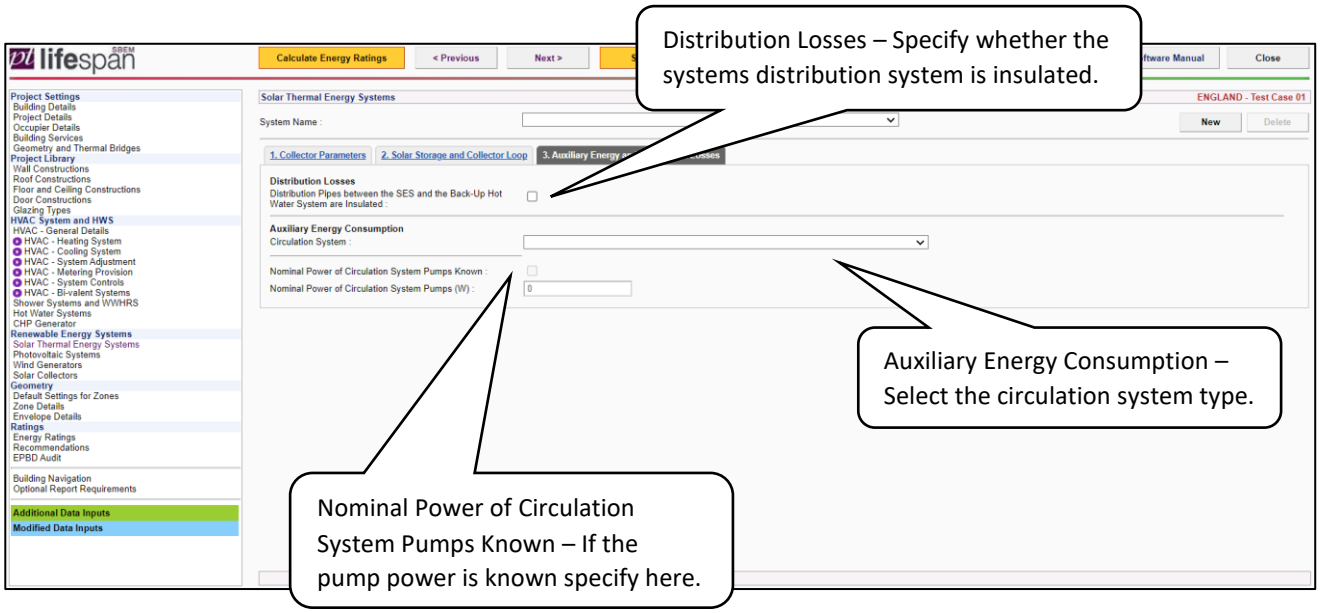
Collector Parameters



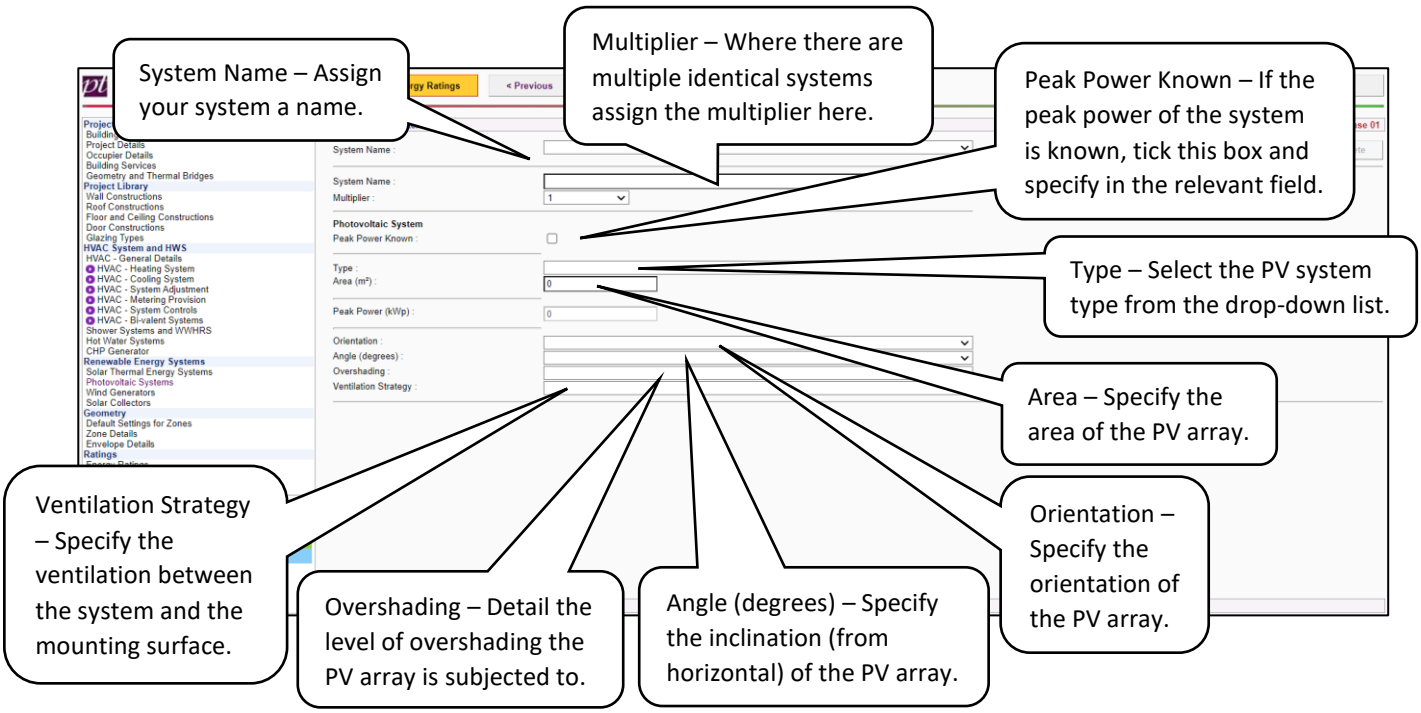
Solar Storage and Collector Loop



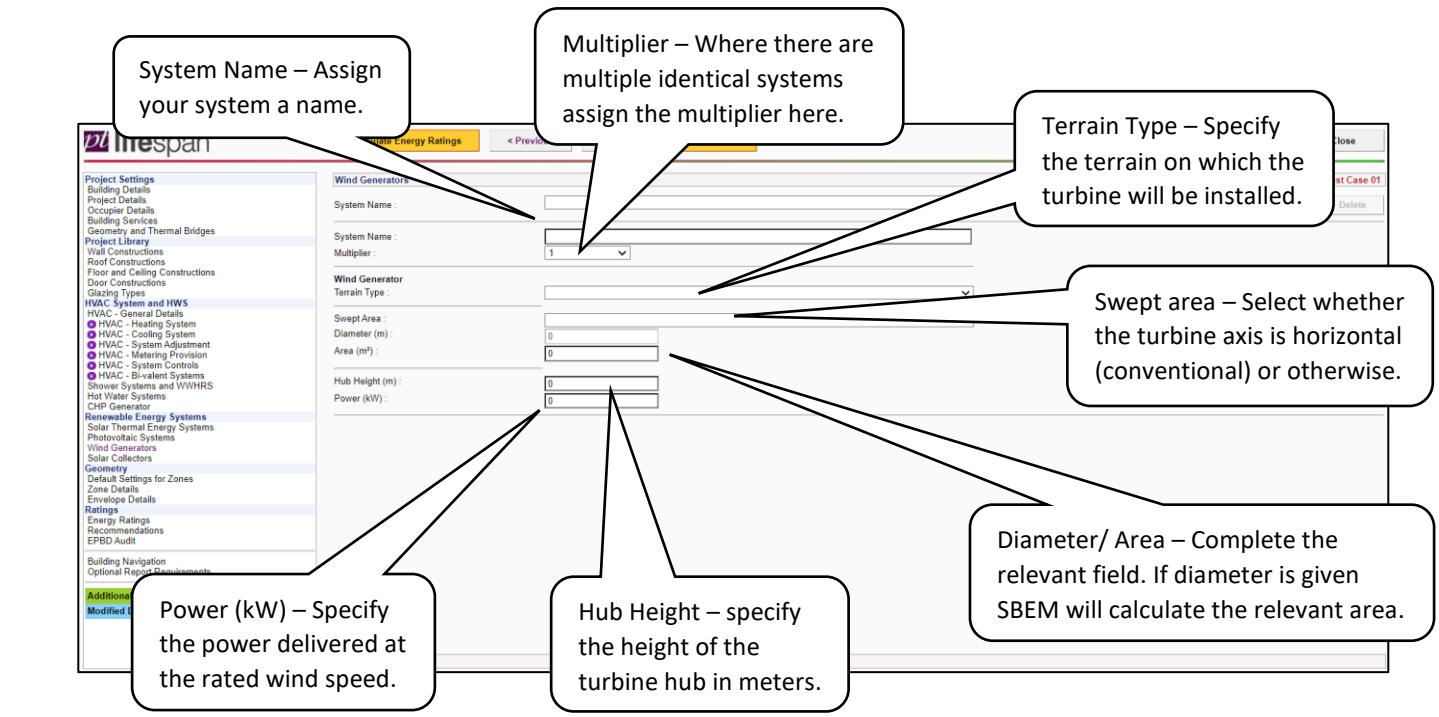
Auxiliary Energy and Distribution Losses



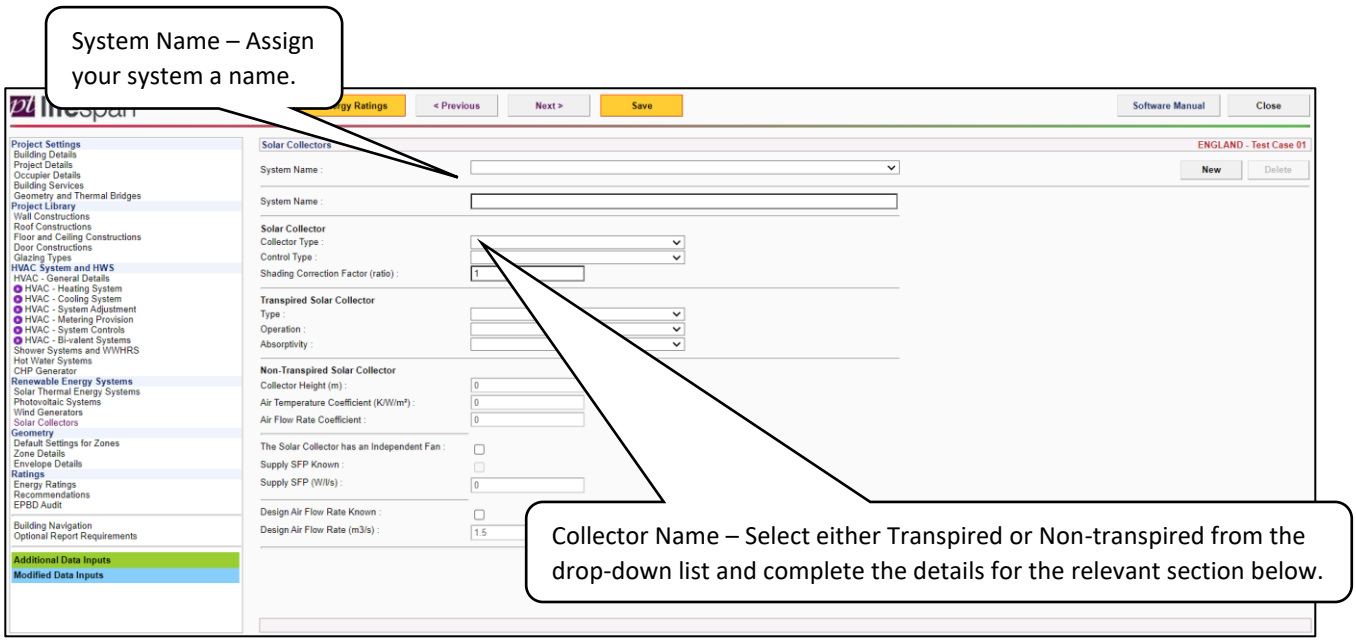
Photovoltaic Systems



Wind Generators



Solar Collectors



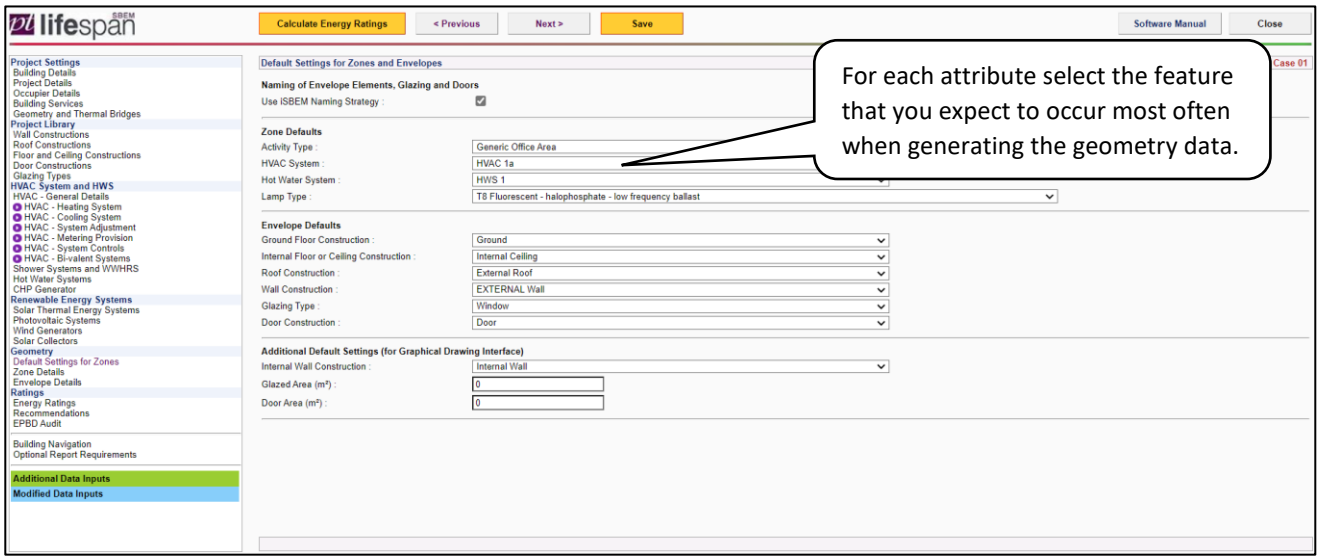
Geometry

Default Settings for Zones

The default settings for zones page is used to select the features that most commonly occur in your project. The features set here will be used to pre-populate some of the information when generating geometry information saving input time.

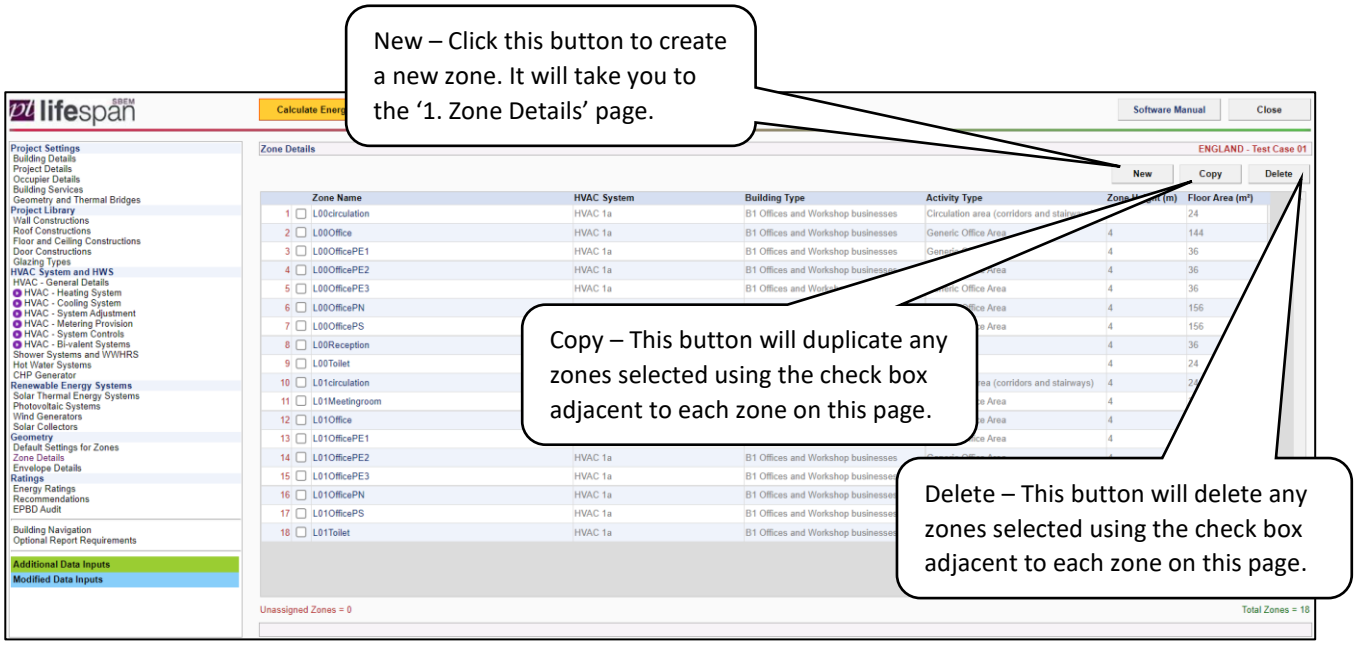
Wherever possible, user specified attributes should be selected.

If an attribute is deleted subsequent to its selection in 'Default settings for zones' a replacement will need to be selected to replace it before accessing the geometry information.

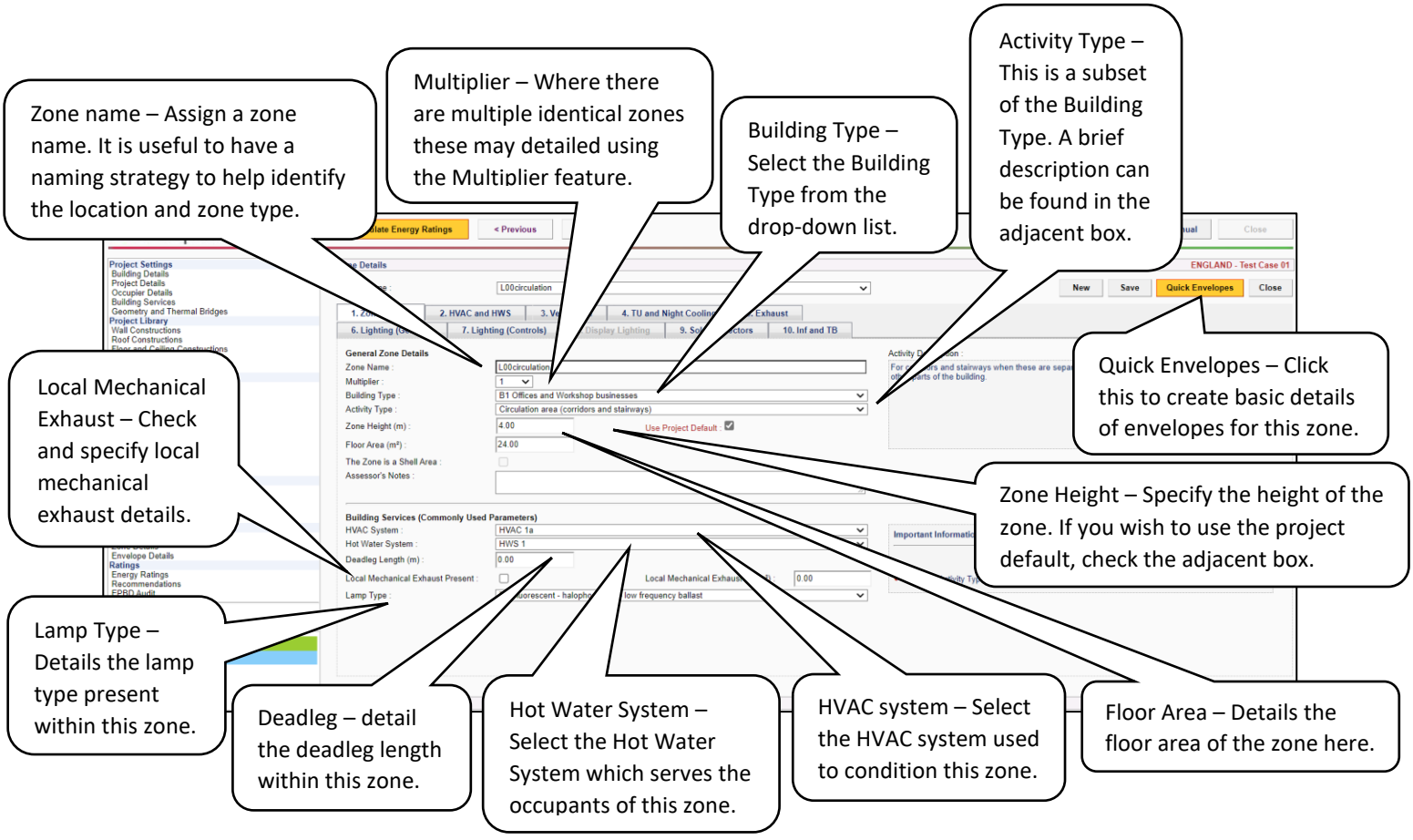


Zone Details

This page will list all of the zones created for this project along with some of their key details.

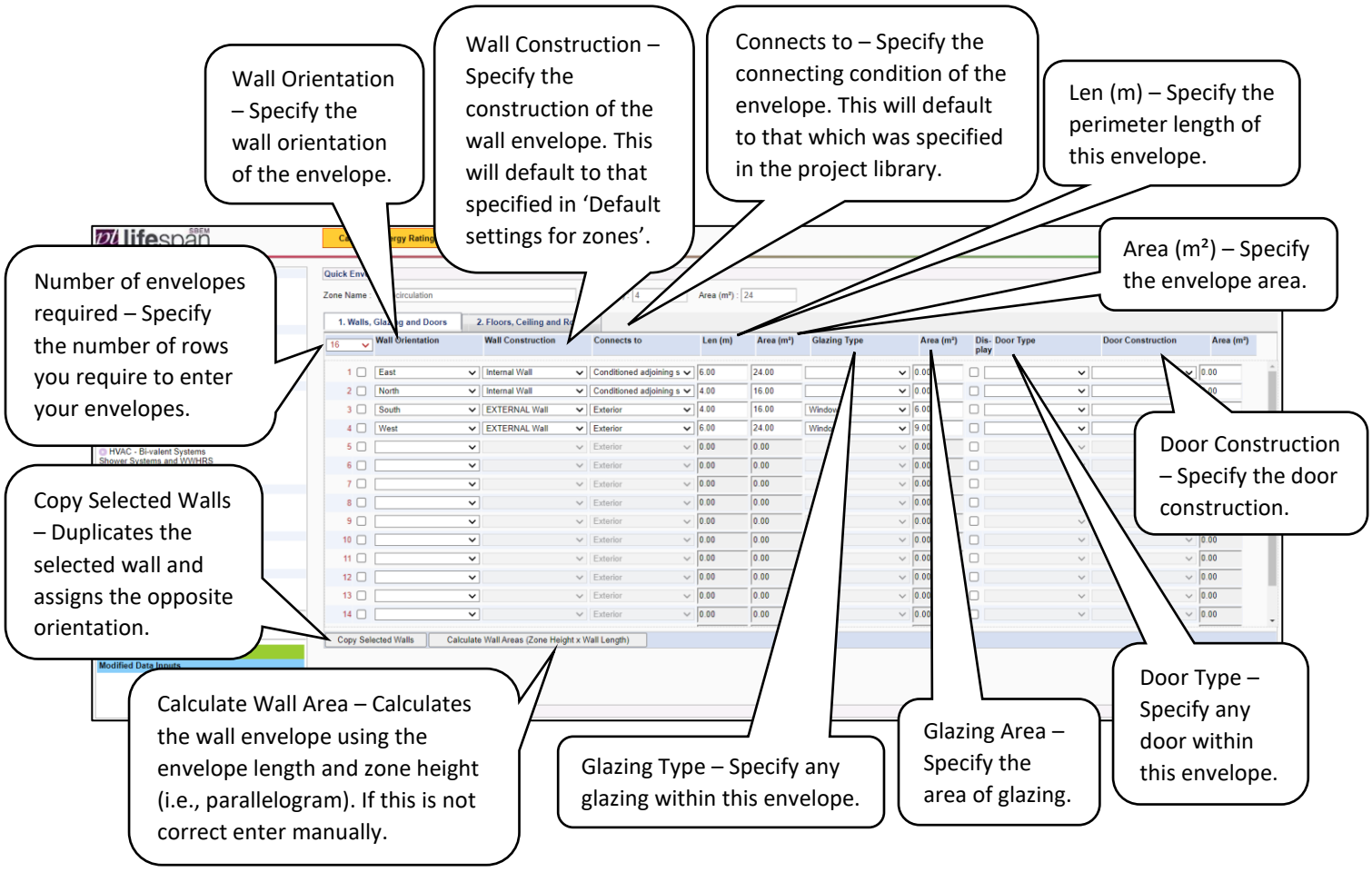


1. Zone Details

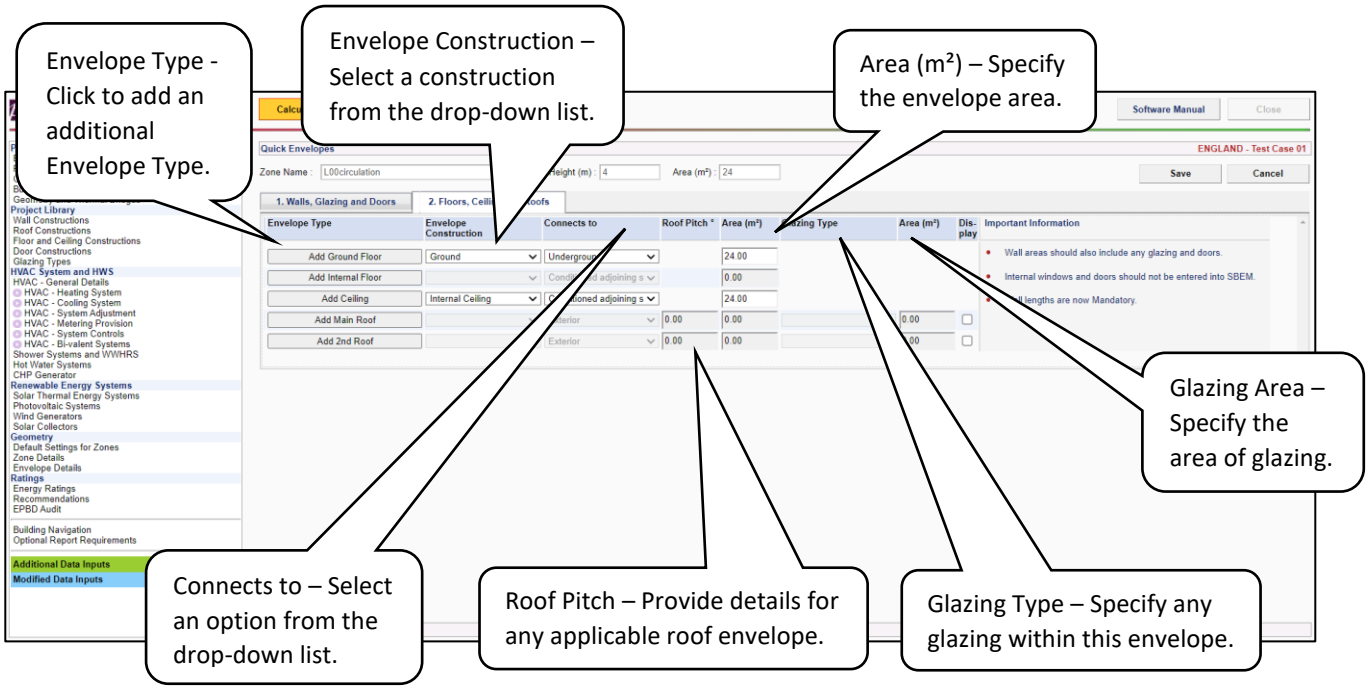


Quick Envelopes - 1. Walls, Glazing and Doors

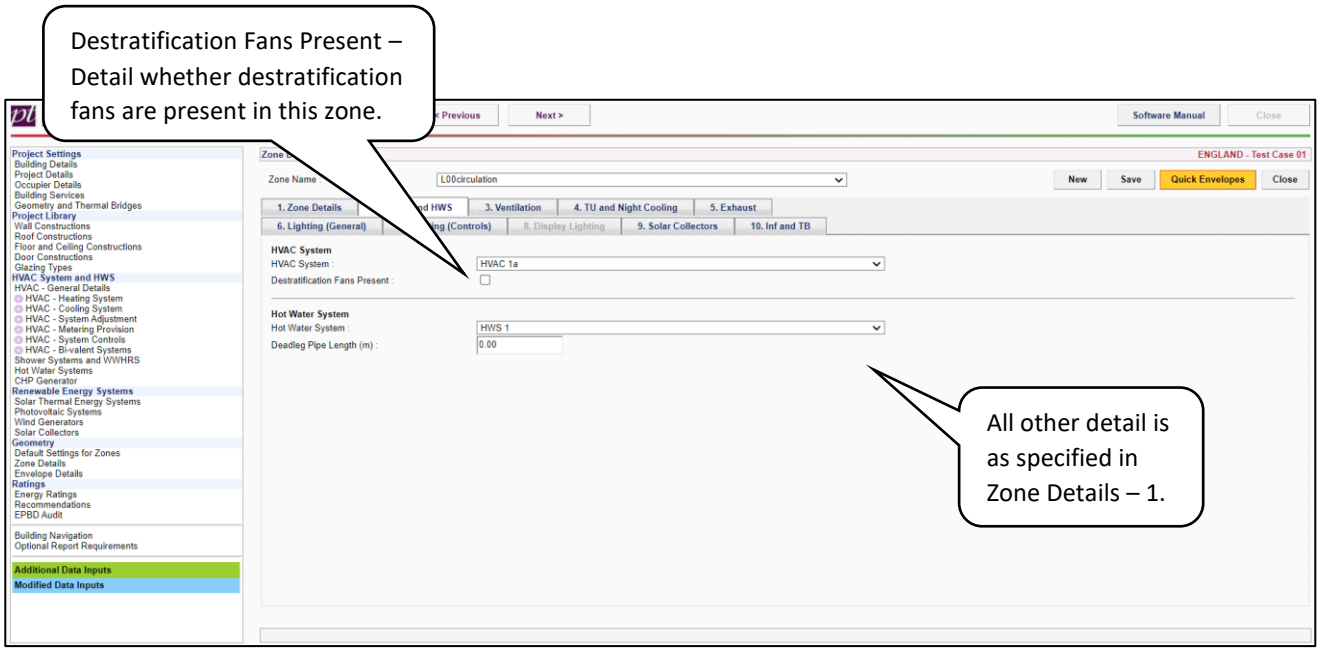
Quick Envelopes is a system we have created to assist in creating the geometry data required for each SBEM assessment quickly and easily. It is accessible through the Zone Details and Envelope Details area of the software and all details created will be generated as a subset of the zone it is accessed through. As 'Quick Envelopes' is intended to create the majority of your envelope information quickly and efficiently you may need to enter the 'Envelope Details' section separately to specify detail relating to each specific element. Details of this can be found later in this manual.



Quick Envelopes - 2. Floors, Ceiling and Roofs

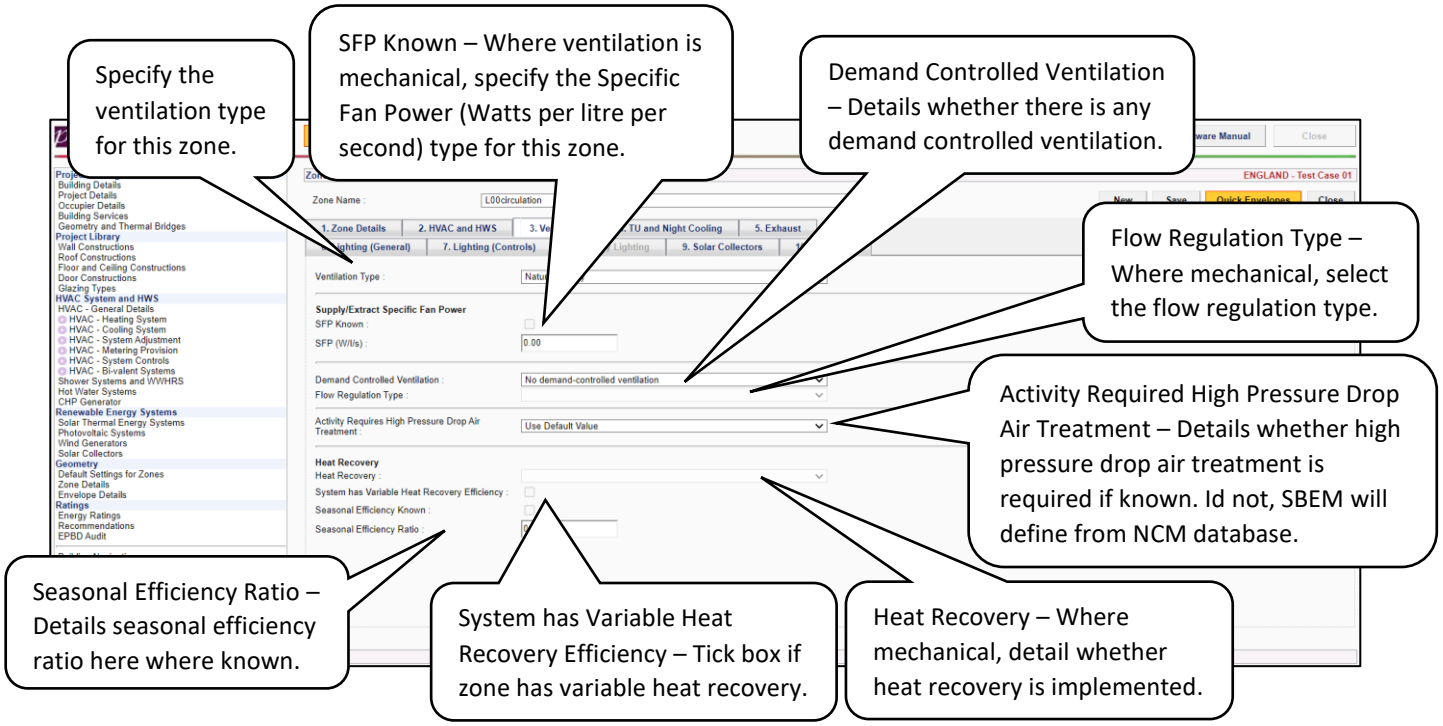


2. HVAC and HWS

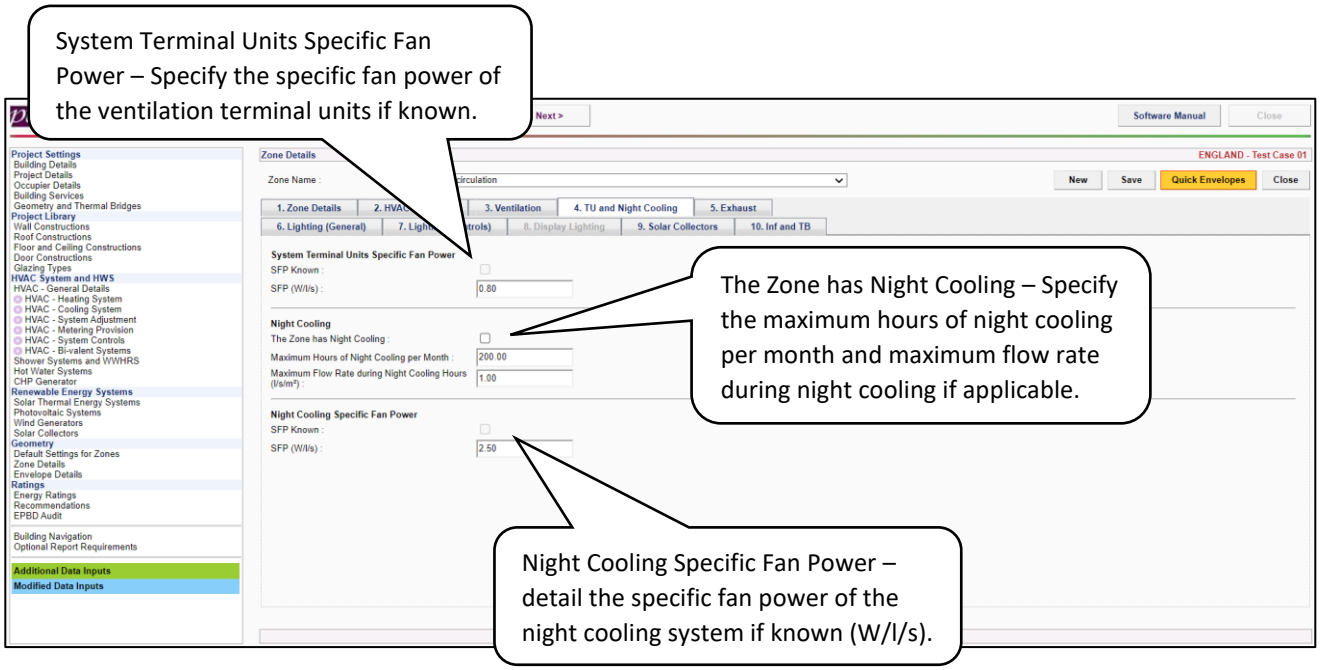


3. Ventilation

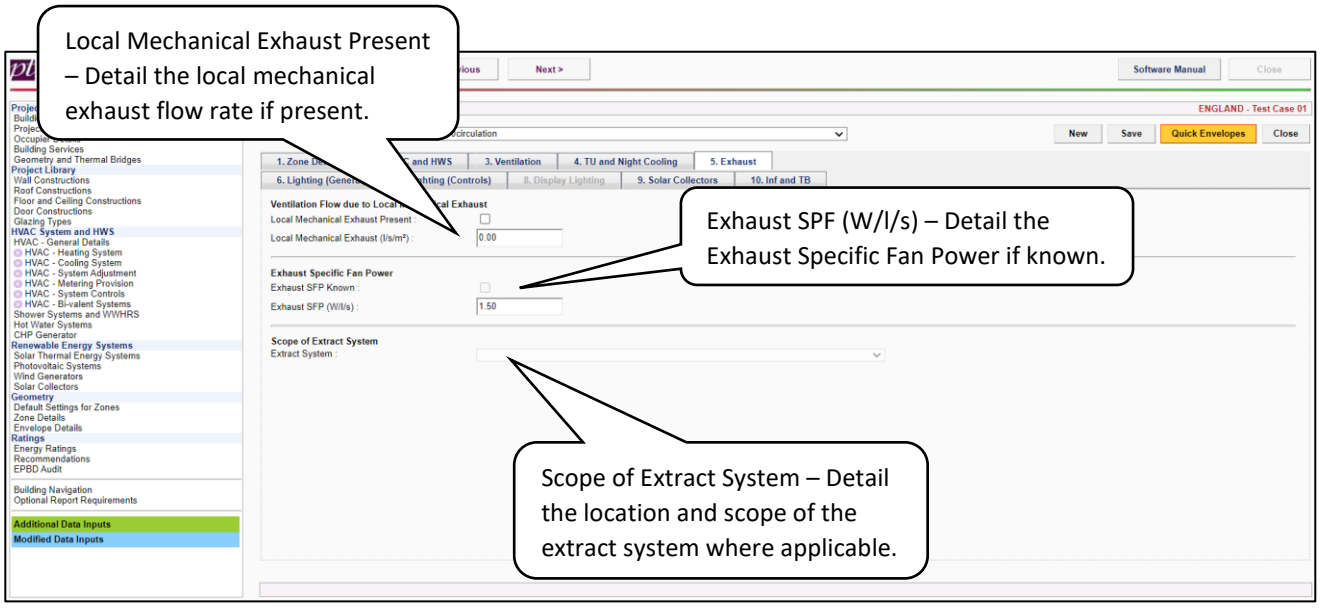
Details specified in this tab should relate to this zone specifically. Ventilation details for centralised plant should be detailed at project level in the 'HVAC Systems and HWS' area of the project library. If the centralised system incorporates terminal units in the zone these may be specified at zone level here.



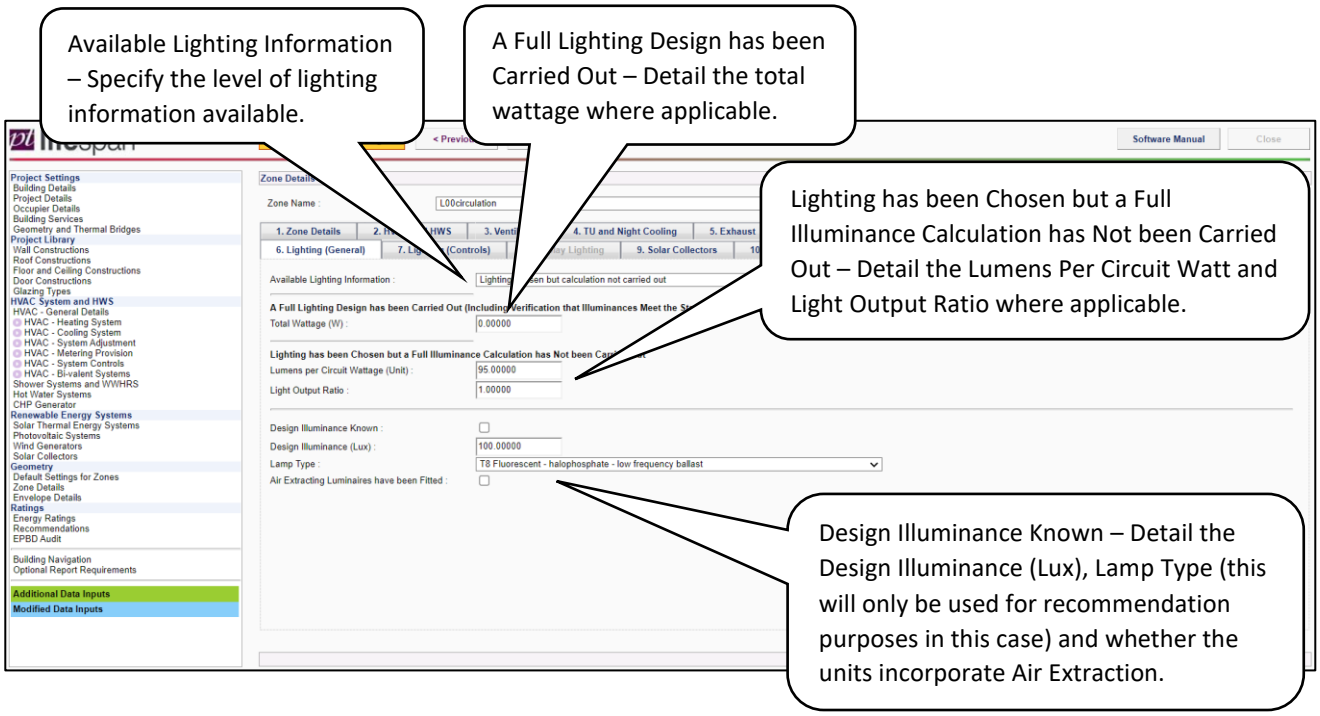
4. TU and Night Cooling



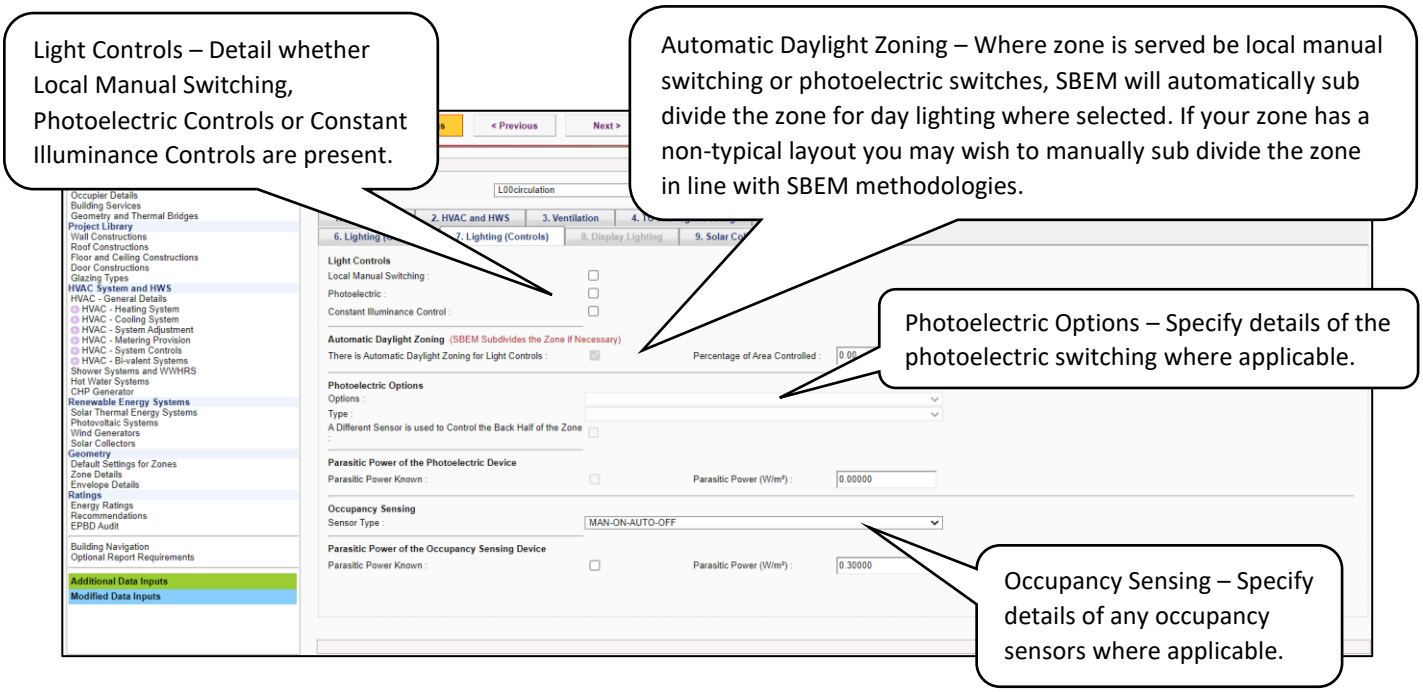
5. Exhaust



6. Lighting (General)

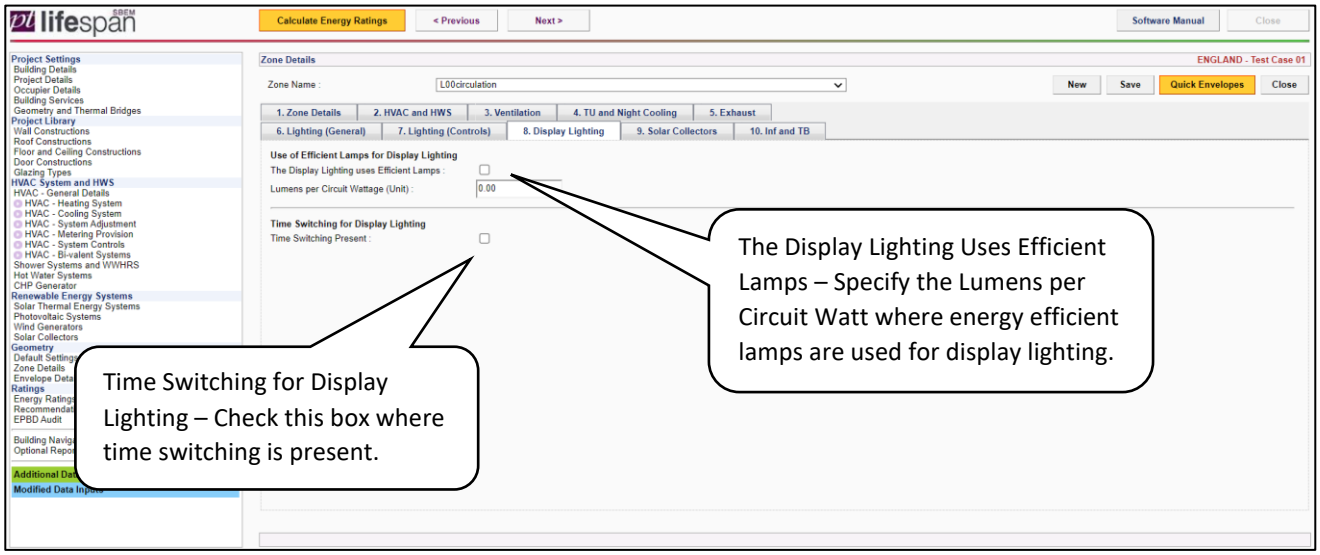


7. Lighting (Controls)

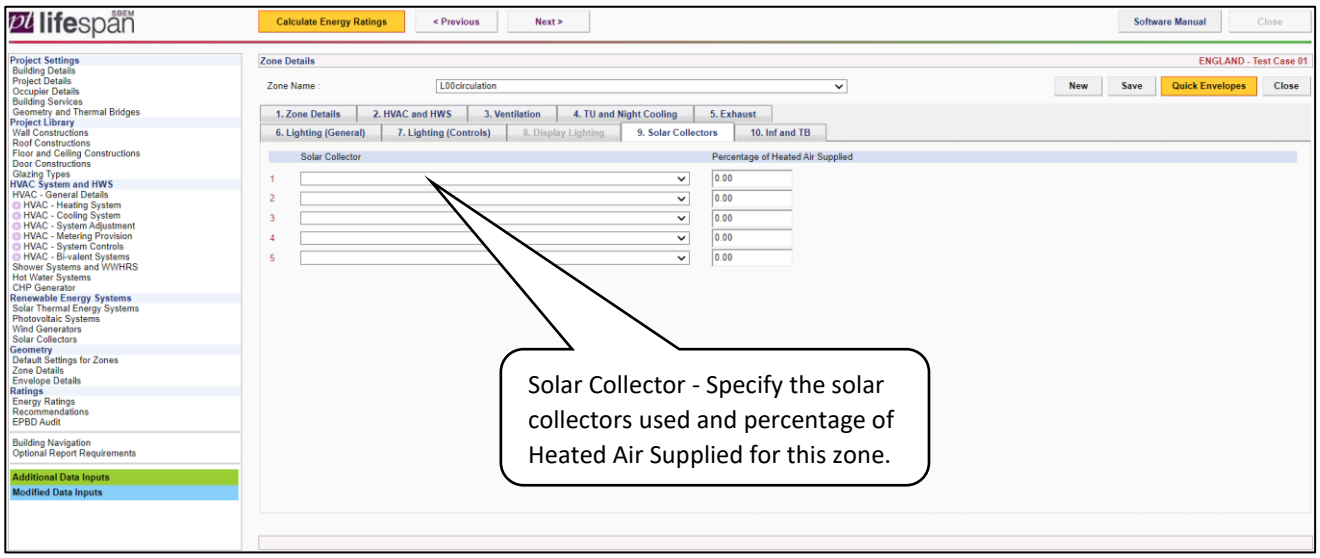


8. Display Lighting

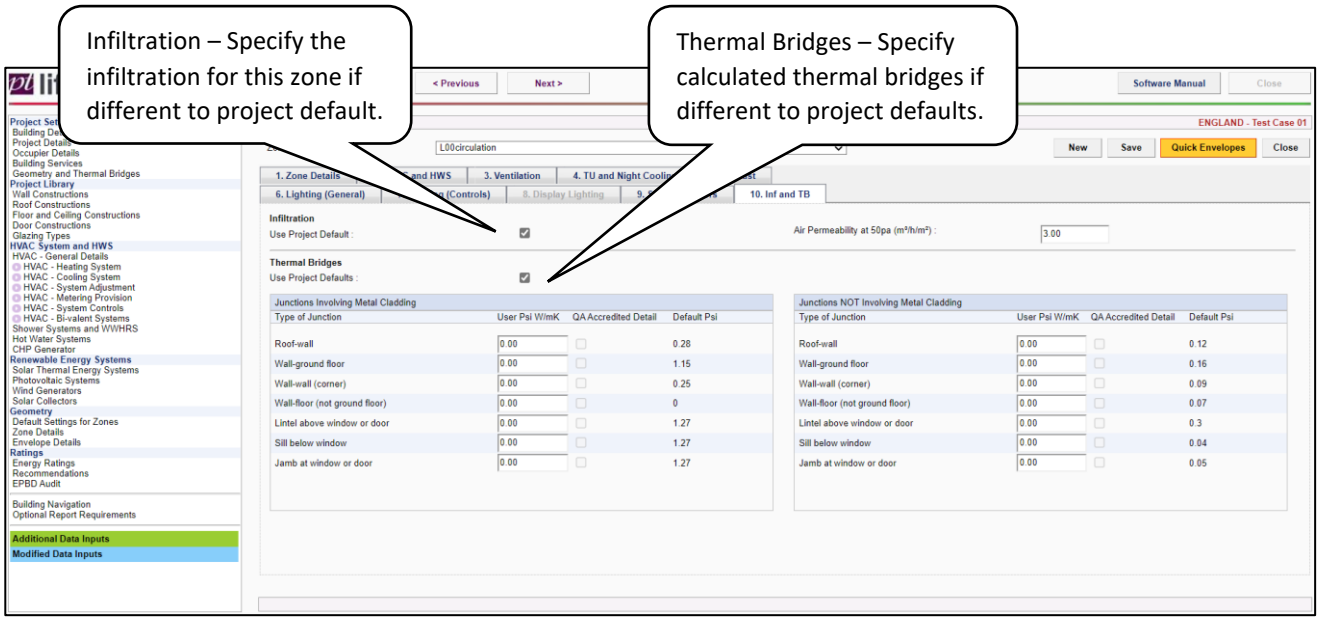
Display lighting is only available where relevant to the zone activity as defined in the NCM activities database.



9. Solar Collectors

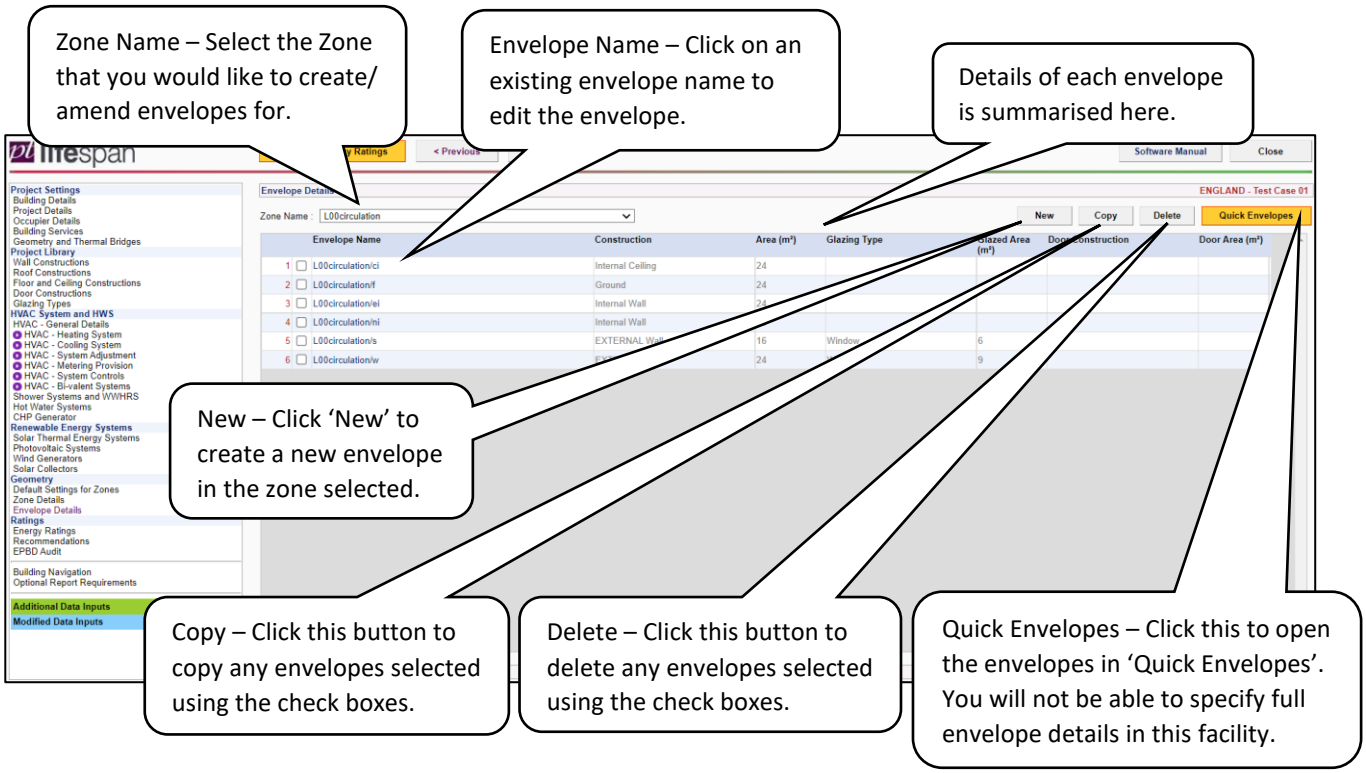


10. Infiltration and Thermal Bridging



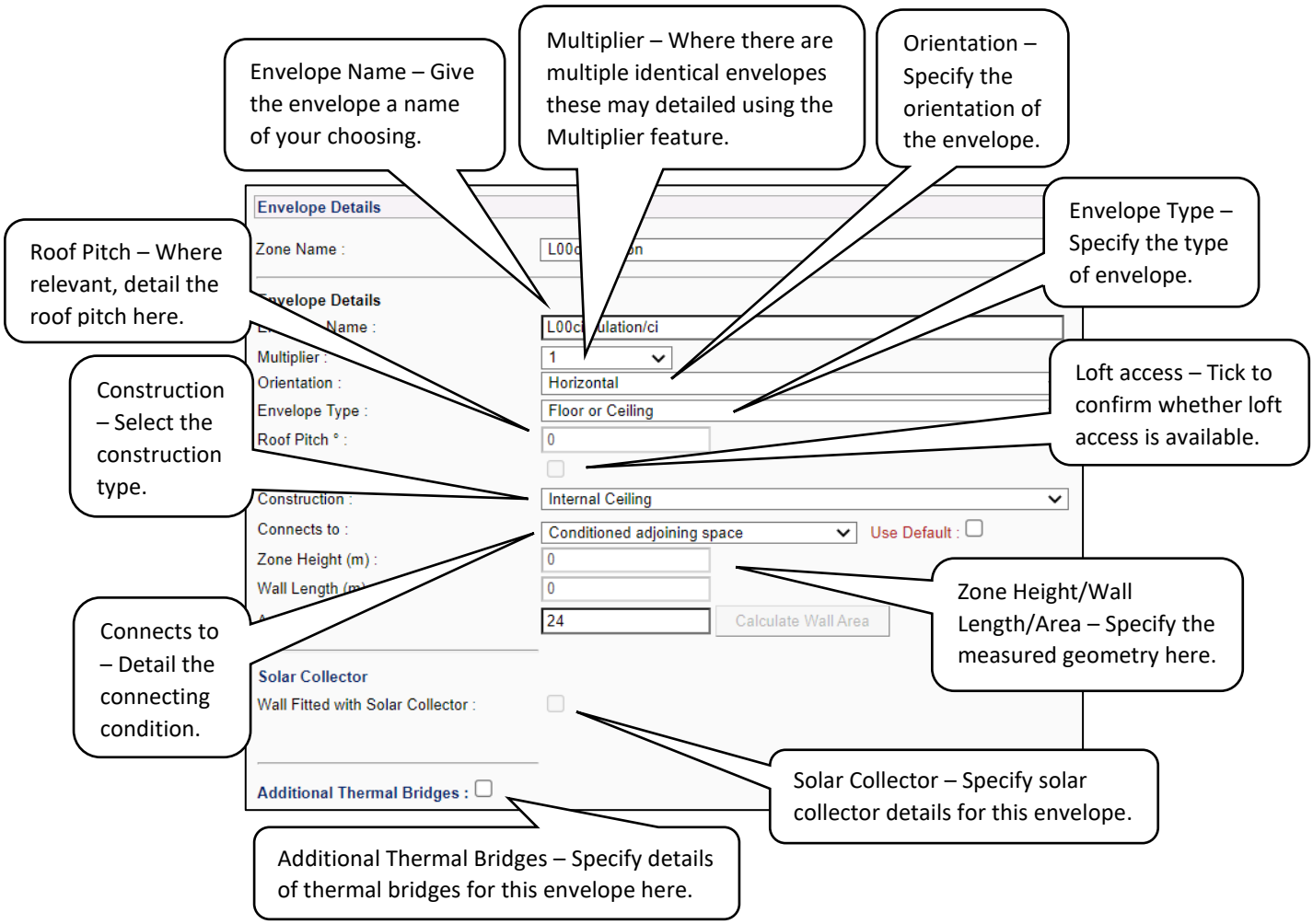
Envelope Details

Envelope details displays any envelopes created using ‘Quick envelopes’ (described earlier in this manual) and provides the ability to specify fully details of each along with the facility to create them from scratch. We recommend creating envelopes using the ‘Quick envelopes’ facility and making any amendments/ additions at a later time.

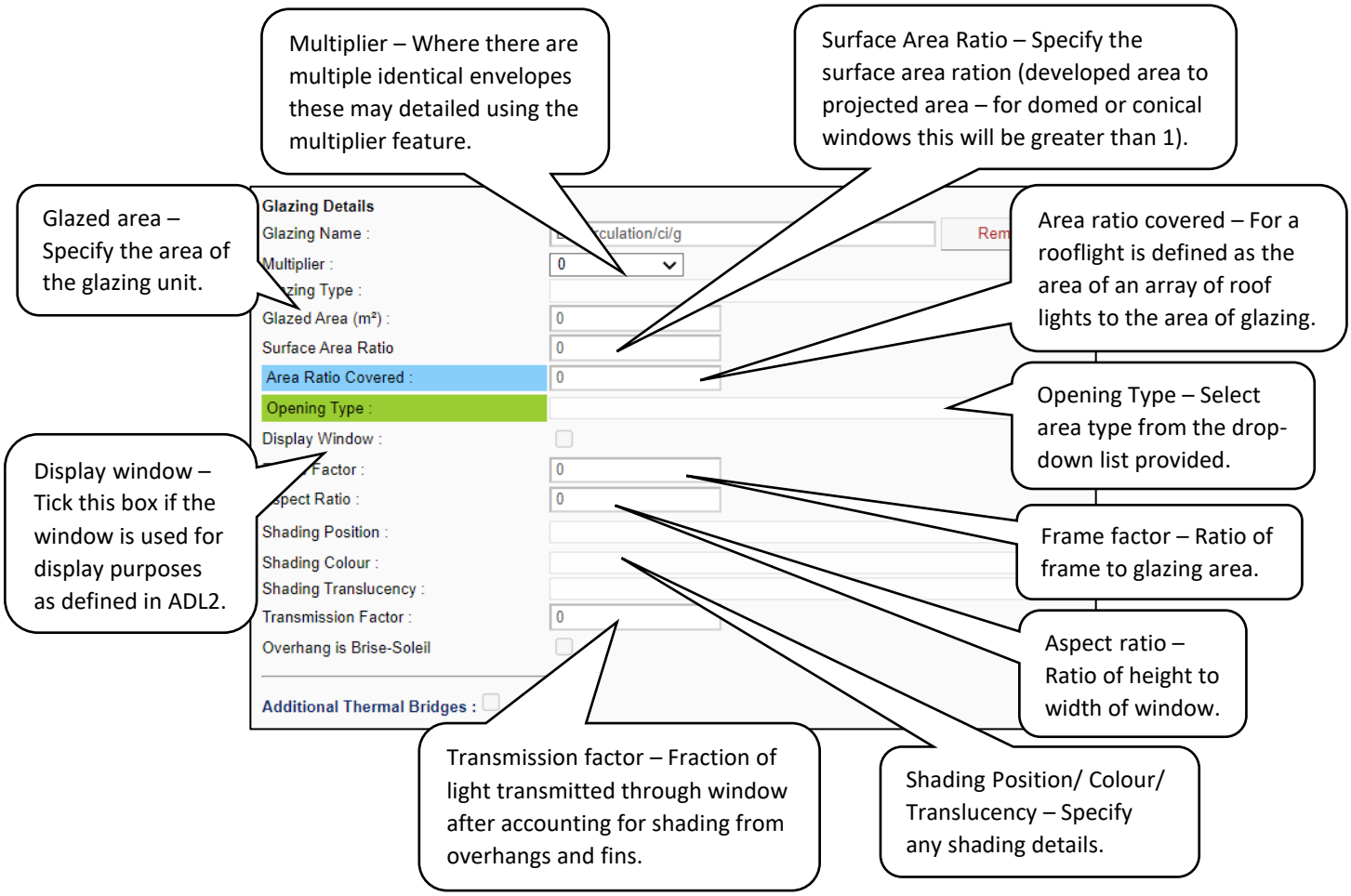


Edit Envelope Details

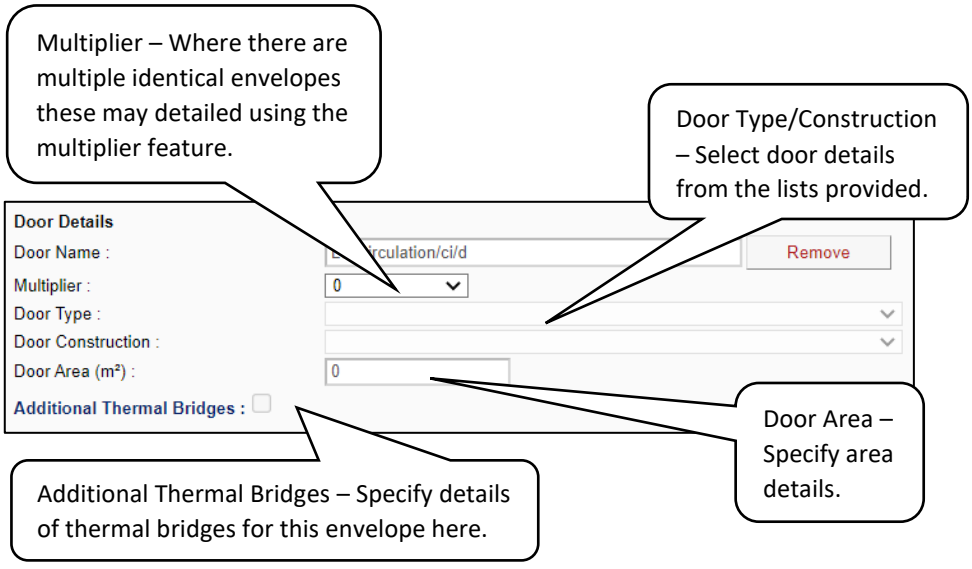
Envelope Details



Glazing Details



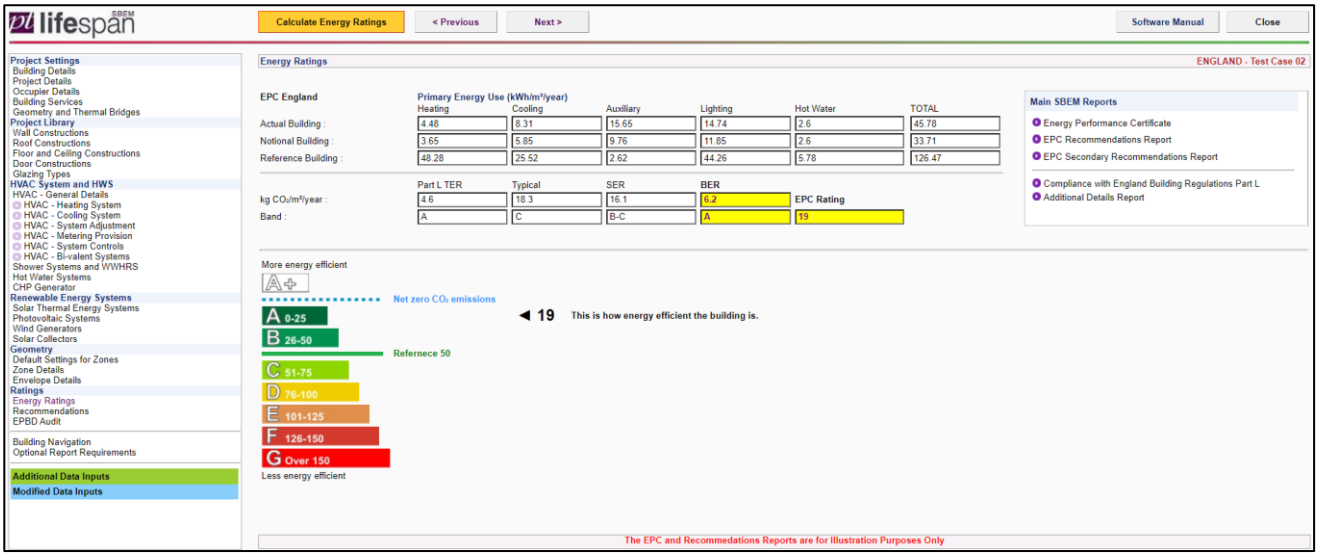
Door Details



Ratings

Energy Ratings

This page details the calculated results of SBEM after pressing the ‘Calculate Energy Ratings’ button. The results displayed will change depending on the assessment type. A limited number of relevant reports is also available.

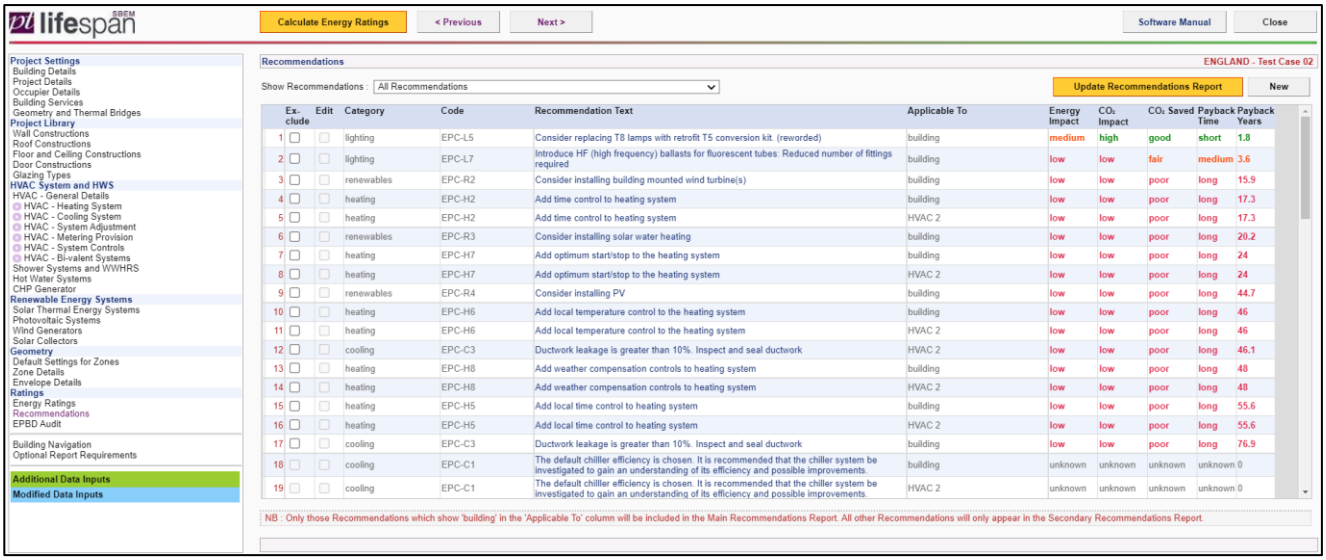


Recommendations

Once a project has been calculated all applicable SBEM generated recommendations will be listed along with their Energy and CO2 Impact, CO2 saved, Payback Time and Payback Years. Only those listed as applicable to the ‘building’ will appear on the lodged report that accompanies the EPC.

User recommendations can be added by clicking ‘New’. All fields must be completed in order for the recommendation to be successfully passed to the SBEM engine for inclusion in the report.

For any amendments (including ‘User’ recommendations) to be included in the Recommendations Report, the ‘Update Recommendations Report’ button must be the last button pressed before closing the project.

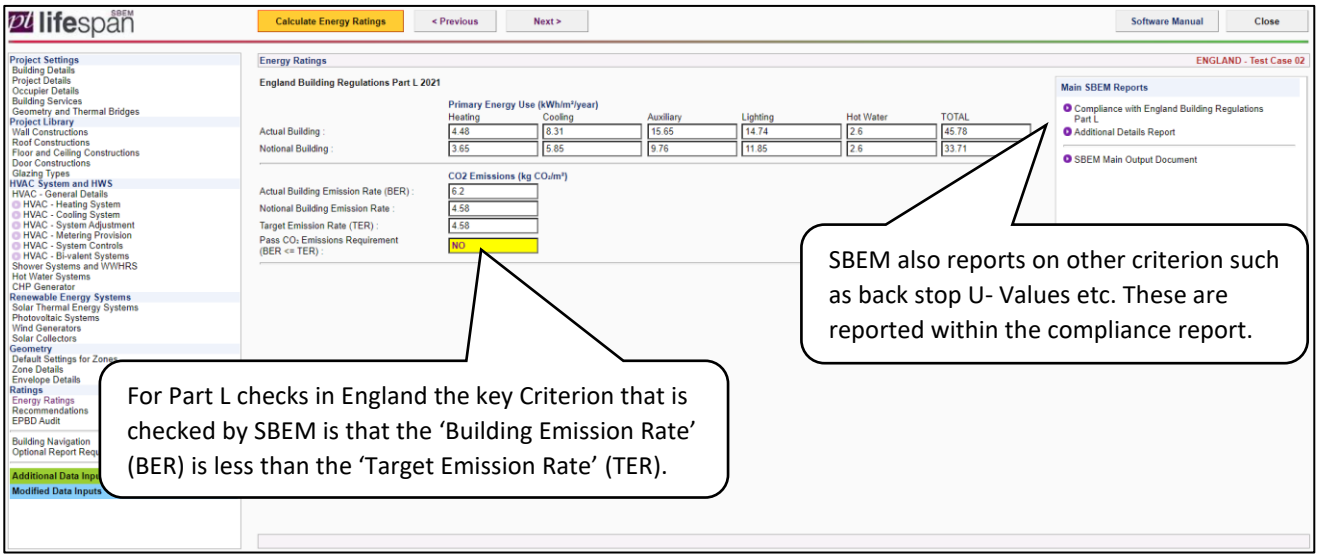


Building Regulations Compliance

If you have selected one of the Building Regulations Compliance selections from the 'Purpose of Analysis' drop down on the 'Building Details' page then the 'Energy Ratings' screen will not display the Asset Rating (EPC rating) of the property rather, it will display details relating to the compliance criteria required for Building Regulations in the region selected.

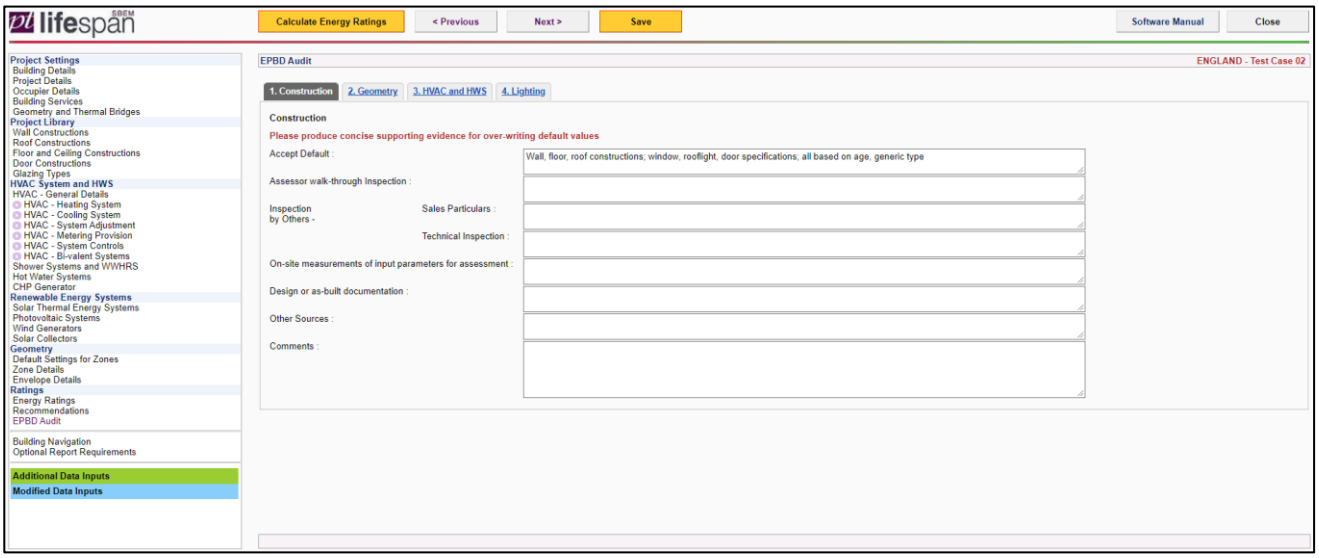
While SBEM reports on most aspects of Part L assessments, reference should be made to the relevant Regulations document to ensure all requirements are fulfilled.

Part L England



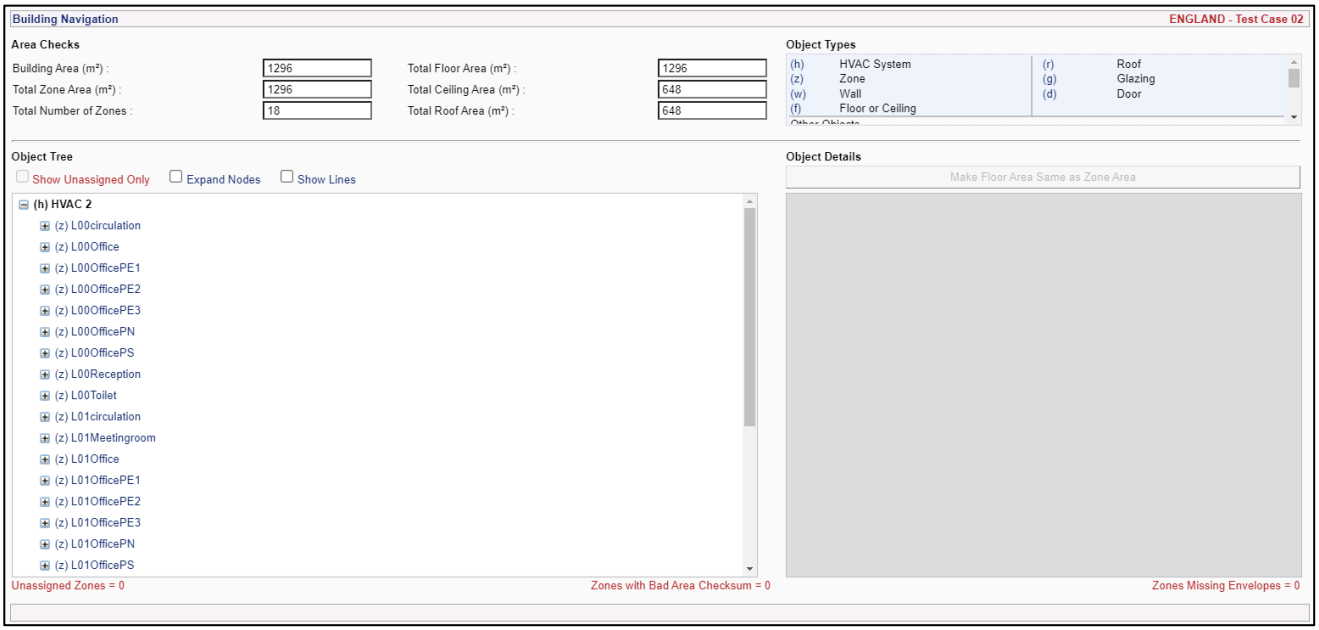
EPBD Audit

This area gives the assessor the opportunity to detail any notes they would like to record against their project and is specifically provided for auditors to reference against EPC lodgements. Although the detail is not mandatory it is of great benefit to any auditor.



Building Navigation

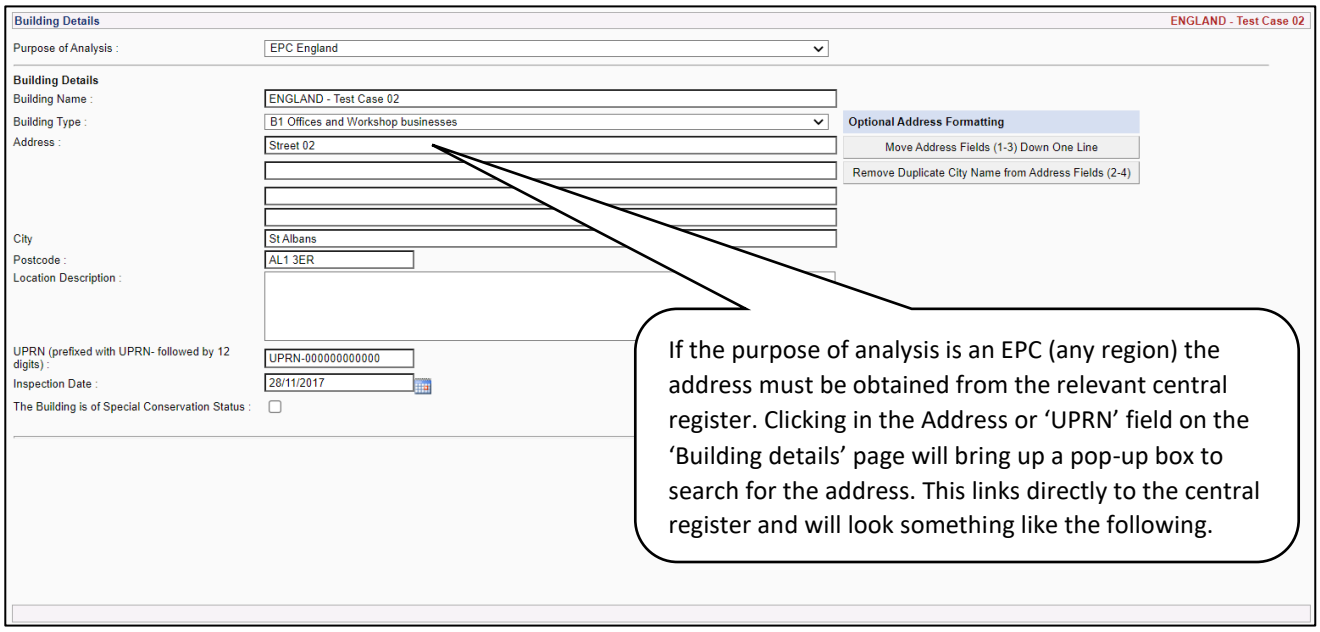
This page offers a summary of information entered into the project accessible in a single area.

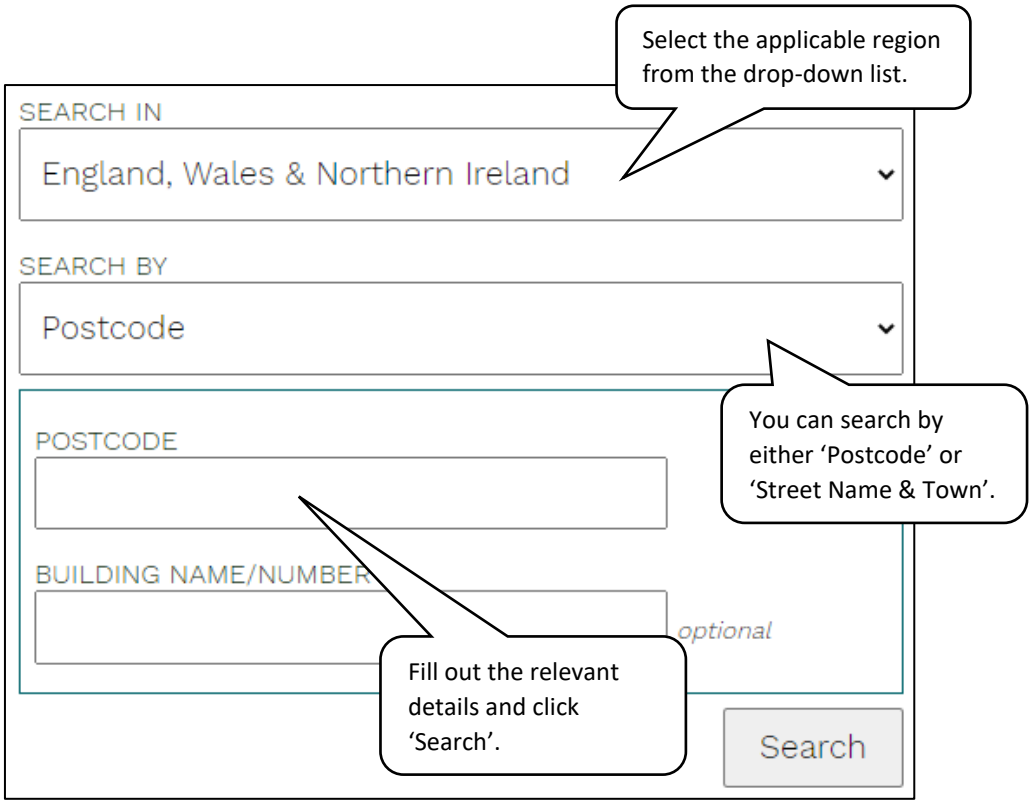


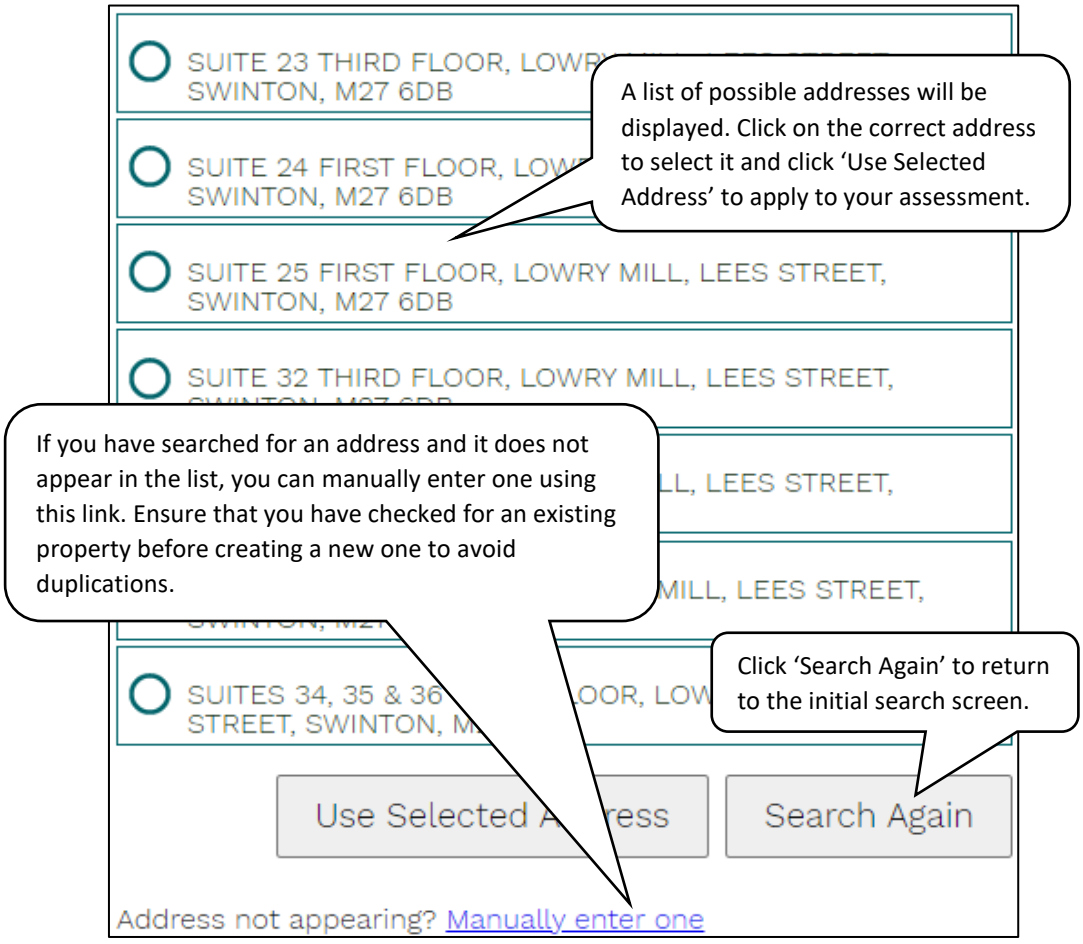
Optional Report Requirements

Please specify which reports you would like Lifespan SBEM to make available after the calculation. This must be specified before the calculation engine is run (i.e. before the 'Calculate Energy Ratings'/ 'Update Recommendations Report' button is pressed).

Address Search




Select the applicable region from the drop-down list.
SEARCH IN
England, Wales & Northern Ireland
SEARCH BY
Postcode
You can search by either 'Postcode' or 'Street Name & Town'.
POSTCODE
BUILDING NAME/NUMBER
optional
Fill out the relevant details and click 'Search'.
Search


SUITE 23 THIRD FLOOR, LOWR
SWINTON, M27 6DB
SUITE 24 FIRST FLOOR, LOW
SWINTON, M27 6DB
A list of possible addresses will be displayed. Click on the correct address to select it and click 'Use Selected Address' to apply to your assessment.
SUITE 25 FIRST FLOOR, LOWRY MILL, LEES STREET, SWINTON, M27 6DB
SUITE 32 THIRD FLOOR, LOWRY MILL, LEES STREET,
LL, LEES STREET,
MILL, LEES STREET,
If you have searched for an address and it does not appear in the list, you can manually enter one using this link. Ensure that you have checked for an existing property before creating a new one to avoid duplications.
SUITES 34, 35 & 36
STREET, SWINTON, M
OOR, LOW
Click 'Search Again' to return to the initial search screen.
Use Selected A ress
Search Again
Address not appearing? Manually enter one

Part L (Conservation of Fuel and Power) in Wales

There are various differences in the technical requirements under Part L in relation to dwellings between England and Wales.

A summary of the changes are provided below, however Energy Assessors should refer to the official Part L documents.

Summary of differences in Part L between England and Wales:

AD L2A

- Reference is made to enhanced energy management.
- In table 2 the TER factors for modular buildings are different.
- The guidance on building service controls has changed.
- There is a Regulation 25C(a) New Buildings – min energy requirements. This makes reference to the Welsh Ministers approval so would only apply in Wales.

AD L2B

- Consequential Improvements, the 1000m2 restriction has been removed.
- Table 1 for the 'U' values to walls and roofs, the values are slightly lower.
- More attention is given to air gaps in insulation etc.
- There is a new Table giving the 'U' values for replacement doors and windows.
- There is a new section giving guidance on new or replacements doors and windows.
- There is a new section giving guidance on non-exempt conservatories and porches.

Essential Reading

- SBEM Technical Manual
- NCM

Recommended Reading

- iSBEM Manual
- ND EPC Conventions
- HVAC Compliance Guide
- ADL2A
- ADL2B
- CIBSE Guide A