Lifespan SBEM User Manual v5.4b

What is Lifespan SBEM?

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 modeling 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 lodgment. 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 softwares.

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

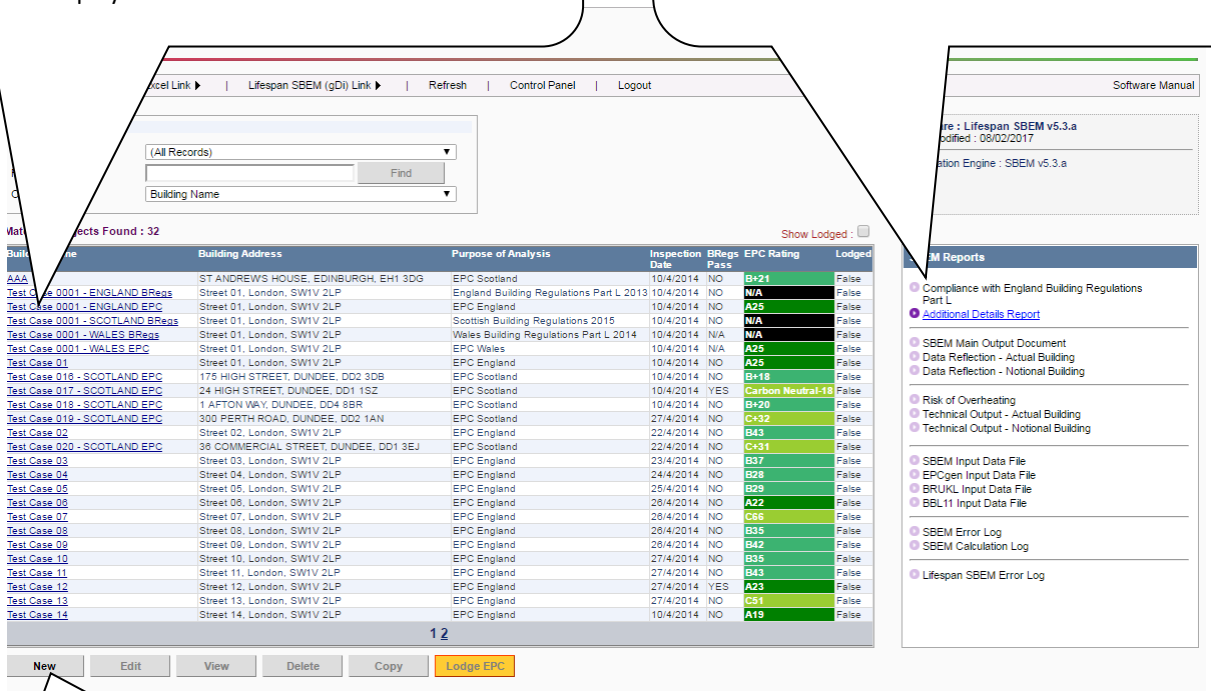
Clicking on the 'View energy surveys' button of the 'Overview' area in your Control Panel will open the Lifespan SBEM interface.

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.

Summary of your existing projects. To select an existing project click on the Building Name. For each project the Building Name, Building address, Inspection date, Building Regs status, EPC status, lodged status and whether gDi has been used is displayed.

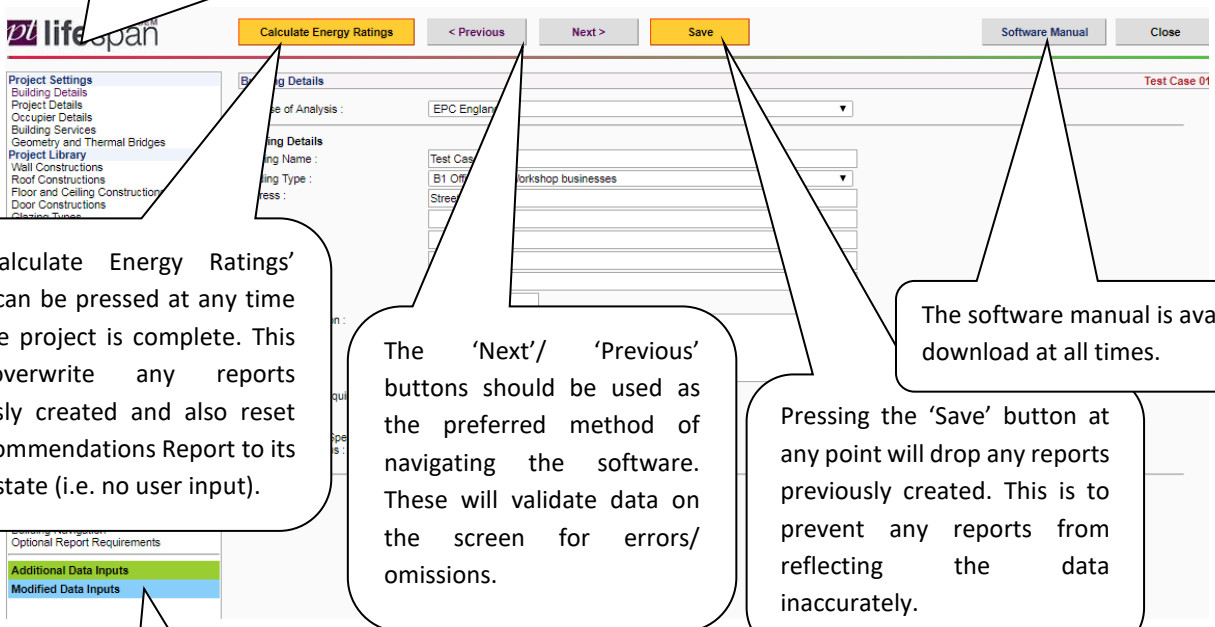
SBEM Reports. This box contains a list of reports available for the selected property. Where a report is not available it is likely that the survey has not been calculated since its last edit or the report is not relevant to this particular project e.g. BRUKL report on an EPC project



The buttons at the bottom of the page are used to create a 'New' project, or 'Edit', 'View' or 'Delete' an existing project. Where you are seeking to manipulate an existing project it must first be selected by clicking on the Building Name. The 'View' differs from 'Edit' in that 'View' cannot be used to make alterations (i.e. a safeguard)

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 '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.

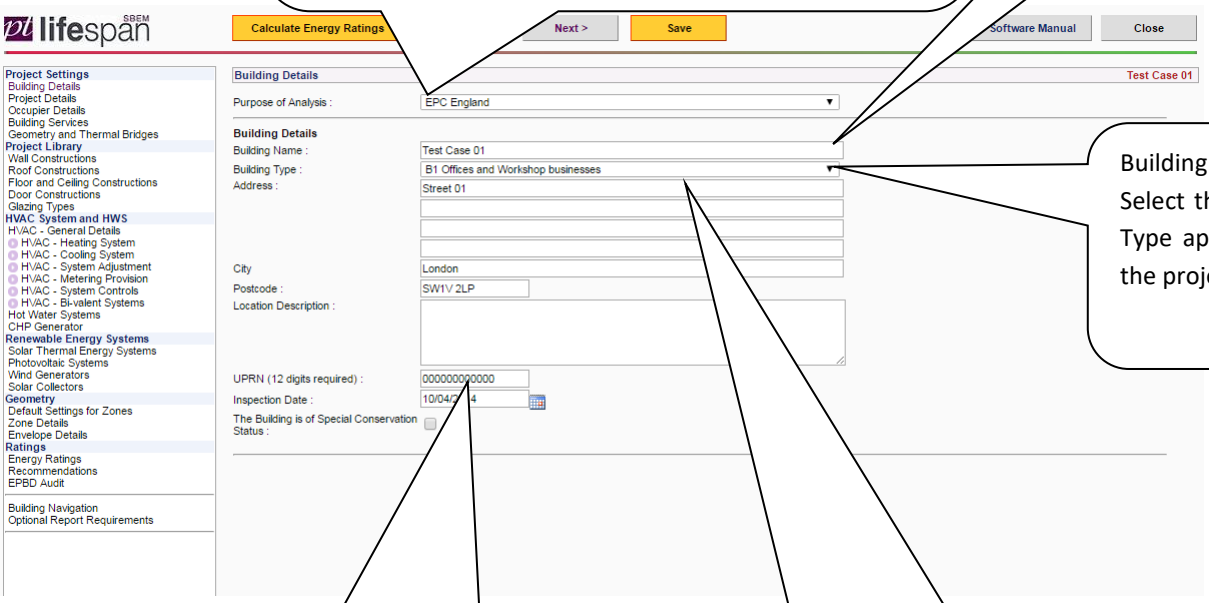
The software manual is available to download at all times.

Any additional, or modified data inputs introduced in Lifespan SBEM v5.4a 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.

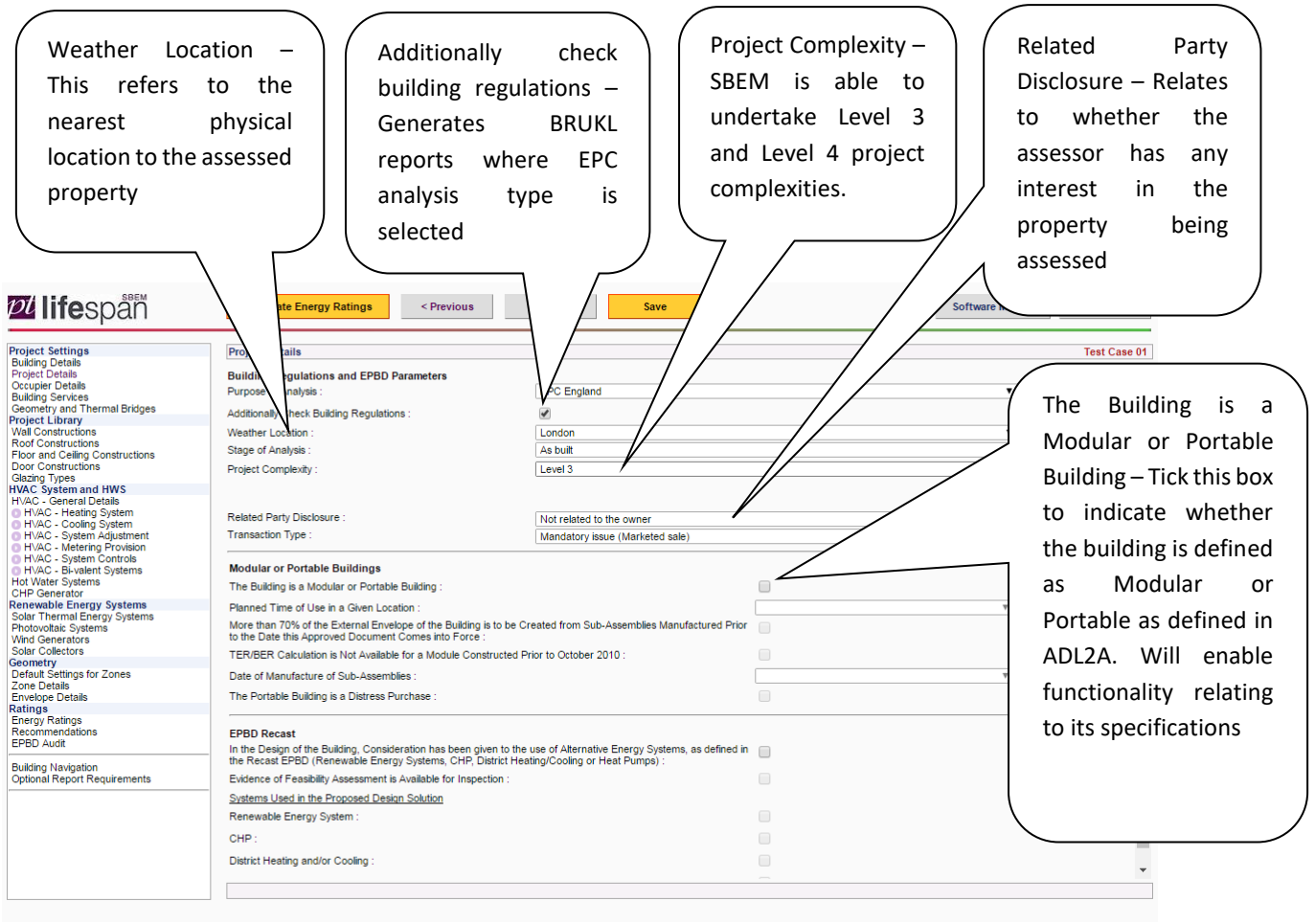
Building Name - Provide a building name for your reference

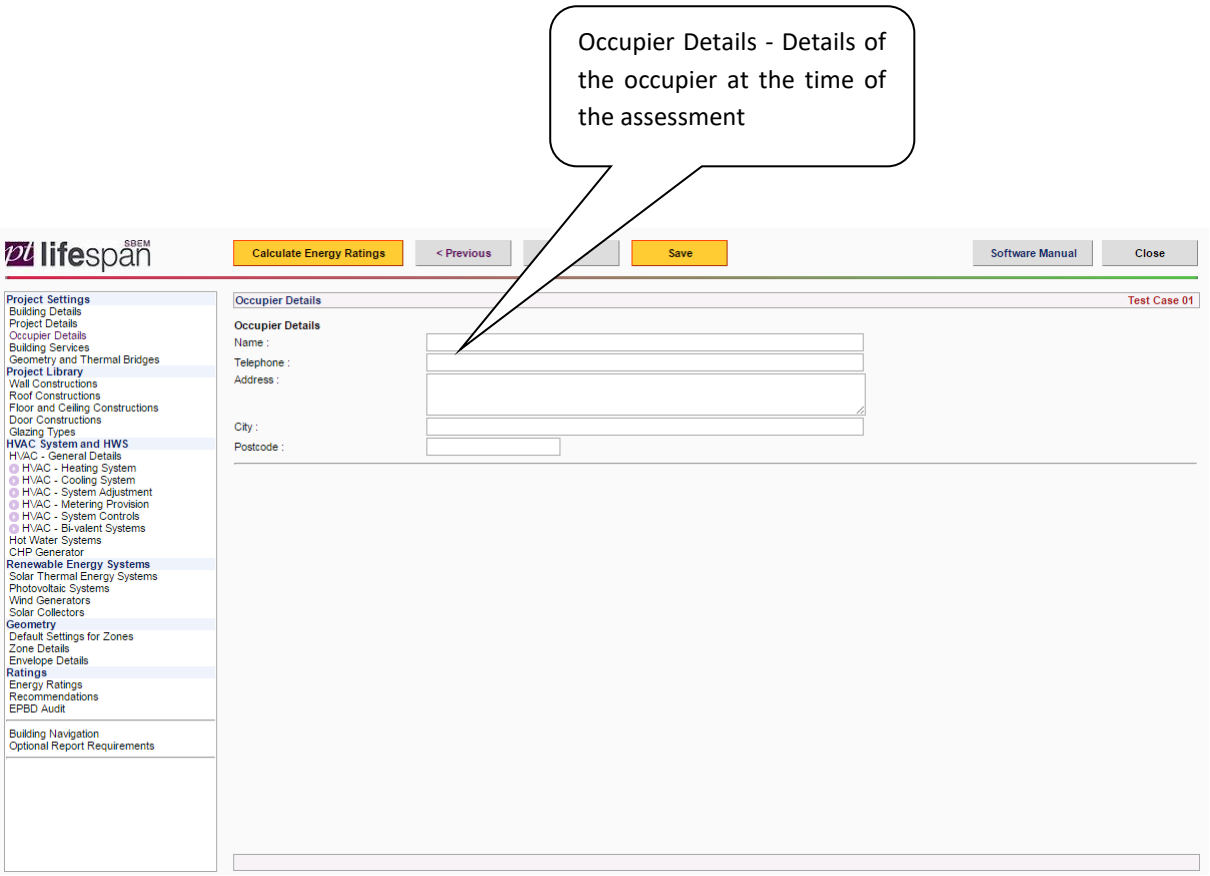


Building Type - Select the Building Type applicable to the project.

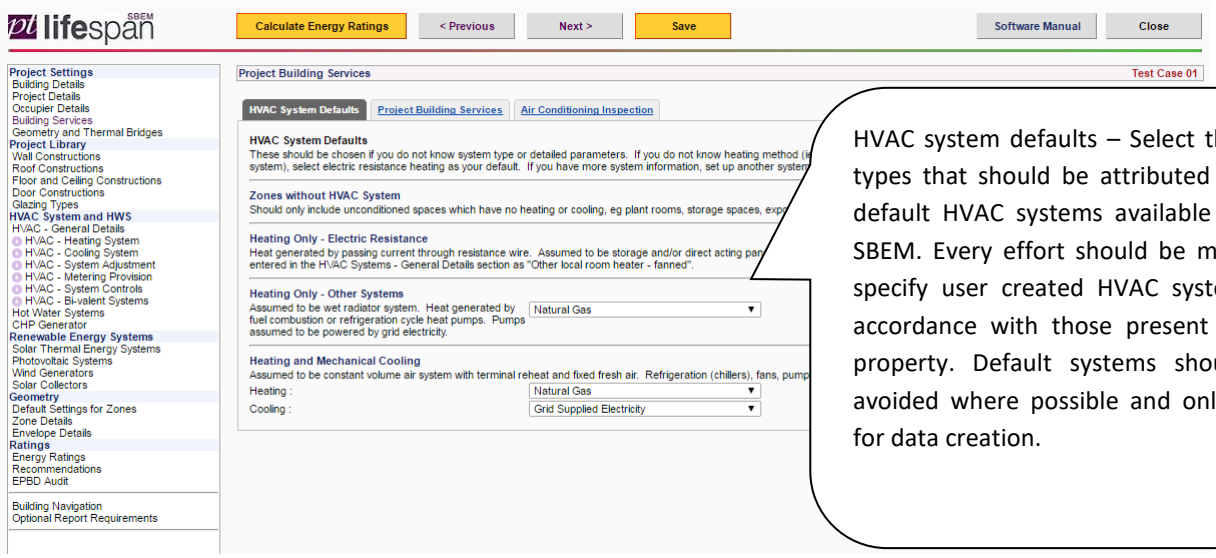
Inspection date – This should relate to the date you physically inspected site. In the case of EPCs this field combined with the UPRN will create the Report Reference Number (RRN) therefore no two submissions may have the same combinations.

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.

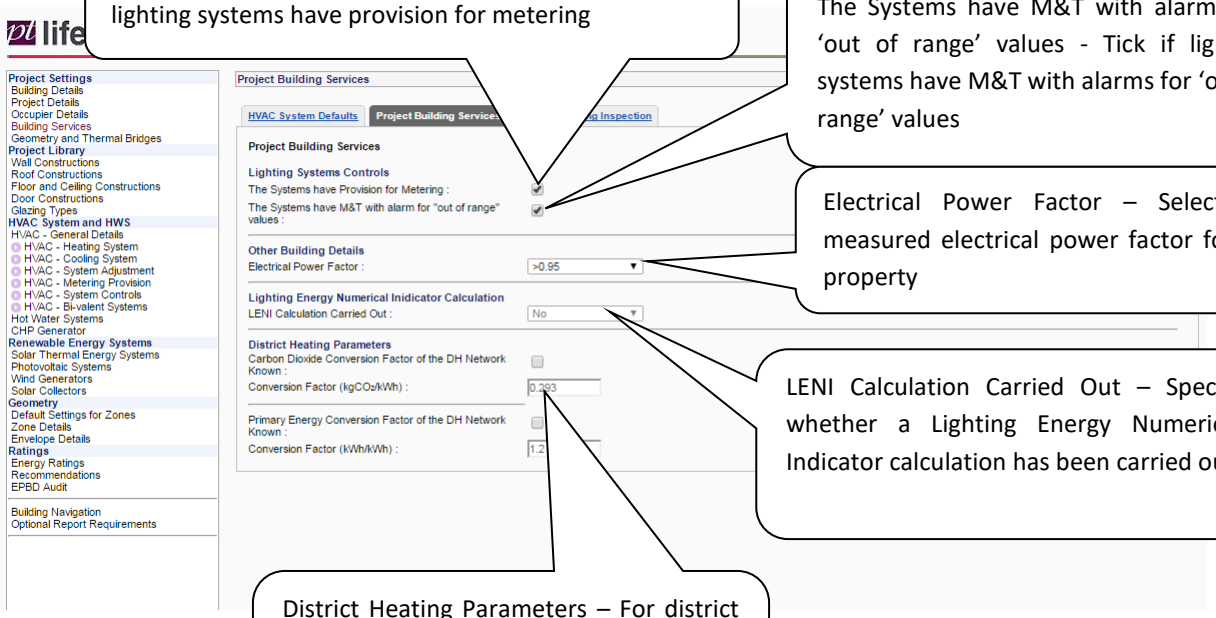

Weather Location – This refers to the nearest physical location to the assessed property
Additionally check building regulations – Generates BRUKL reports where EPC analysis type is selected
Project Complexity – SBEM is able to undertake Level 3 and Level 4 project complexities.
Related Party Disclosure – Relates to whether the assessor has any interest in the property being assessed
The Building is a Modular or Portable Building – Tick this box to indicate whether the building is defined as Modular or Portable as defined in ADL2A. Will enable functionality relating to its specifications
lifespan SBEM
< Previous
Save
Project Settings
Building Details
Project Details
Occupier Details
Building Services
Geometry and Thermal Bridges
Project Library
Wall Constructions
Roof Constructions
Floor and Ceiling Constructions
Door Constructions
Glazing Types
HVAC System and HWS
HVAC - General Details
HVAC - Heating System
HVAC - Cooling System
HVAC - System Adjustment
HVAC - Metering Provision
HVAC - System Controls
HVAC - Bi-valent Systems
Hot Water Systems
CHP Generator
Renewable Energy Systems
Solar Thermal Energy Systems
Photovoltaic Systems
Wind Generators
Solar Collectors
Geometry
Default Settings for Zones
Zone Details
Envelope Details
Ratings
Energy Ratings
Recommendations
EPBD Audit
Building Navigation
Optional Report Requirements
Test Case 01
Regulations and EPBD Parameters
Purpose of Analysis :
PC England
Additionally Check Building Regulations :
Weather Location :
London
Stage of Analysis :
As built
Project Complexity :
Level 3
Related Party Disclosure :
Not related to the owner
Transaction Type :
Mandatory issue (Marketed sale)
Modular or Portable Buildings
The Building is a Modular or Portable Building :
Planned Time of Use in a Given Location :
More than 70% of the External Envelope of the Building is to be Created from Sub-Assemblies Manufactured Prior to the Date this Approved Document Comes into Force :
TER/BER Calculation is Not Available for a Module Constructed Prior to October 2010 :
Date of Manufacture of Sub-Assemblies :
The Portable Building is a Distress Purchase :
EPBD Recast
In the Design of the Building, Consideration has been given to the use of Alternative Energy Systems, as defined in the Recast EPBD (Renewable Energy Systems, CHP, District Heating/Cooling or Heat Pumps) :
Evidence of Feasibility Assessment is Available for Inspection :
Systems Used in the Proposed Design Solution
Renewable Energy System :
CHP :
District Heating and/or Cooling :


Occupier Details - Details of the occupier at the time of the assessment
lifespan SBEM
Calculate Energy Ratings
< Previous
Save
Software Manual
Close
Project Settings
Building Details
Project Details
Occupier Details
Building Services
Geometry and Thermal Bridges
Project Library
Wall Constructions
Roof Constructions
Floor and Ceiling Constructions
Door Constructions
Glazing Types
HVAC System and HWS
HVAC - General Details
HVAC - Heating System
HVAC - Cooling System
HVAC - System Adjustment
HVAC - Metering Provision
HVAC - System Controls
HVAC - Bi-valent Systems
Hot Water Systems
CHP Generator
Renewable Energy Systems
Solar Thermal Energy Systems
Photovoltaic Systems
Wind Generators
Solar Collectors
Geometry
Default Settings for Zones
Zone Details
Envelope Details
Ratings
Energy Ratings
Recommendations
EPBD Audit
Building Navigation
Optional Report Requirements
Occupier Details
Test Case 01
Occupier Details
Name :
Telephone :
Address :
City :
Postcode :

PROJECT SETTINGS – PROJECT BUILDING SERVICES



HVAC system defaults – Select the fuel types that should be attributed to the default HVAC systems available within SBEM. Every effort should be made to specify user created HVAC systems in accordance with those present in the property. Default systems should be avoided where possible and only used for data creation.



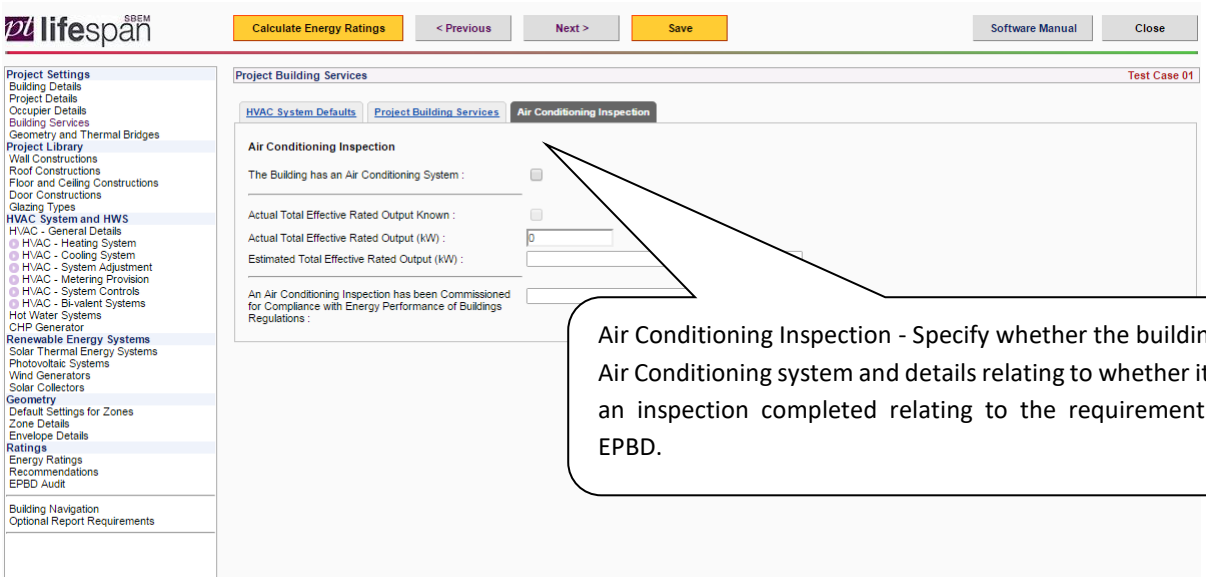
The Systems have Provision for Metering – Tick if lighting systems have provision for metering

The Systems have M&T with alarms for 'out of range' values - Tick if lighting systems have M&T with alarms for 'out of range' values

Electrical Power Factor – Select the measured electrical power factor for the property

LENI Calculation Carried Out – Specify whether a Lighting Energy Numerical Indicator calculation has been carried out

District Heating Parameters – For district heating systems specify the CO2 conversion factor and Primary Energy Conversion Factor

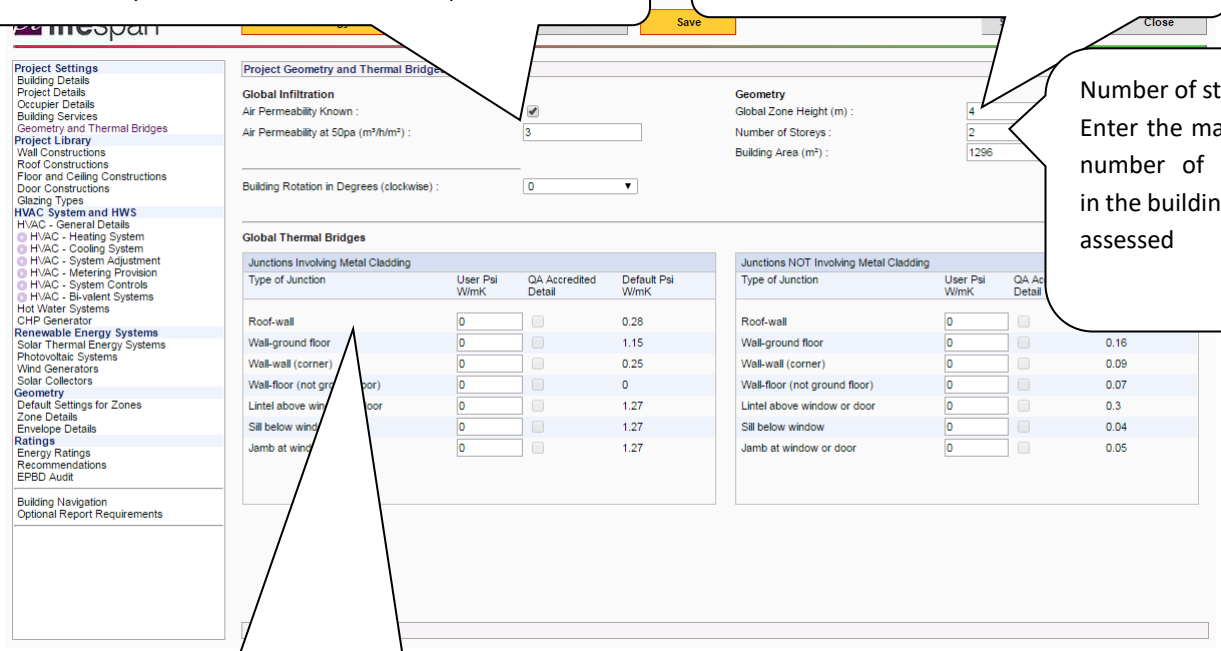


Air Conditioning Inspection - Specify whether the building has an Air Conditioning system and details relating to whether it has had an inspection completed relating to the requirements of the EPBD.

PROJECT SETTINGS –PROJECT GEOMETRY AND THERMAL BRIDGES

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

Global Zone Height – Specify the most commonly occurring Zone Height

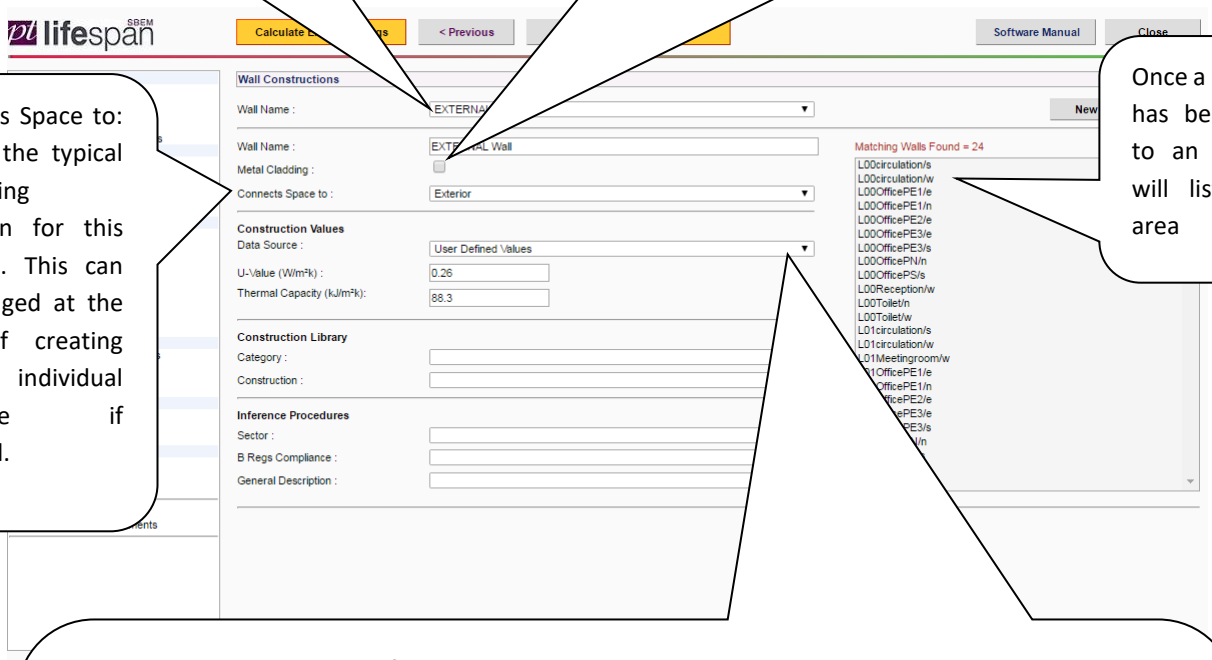


Number of storeys – Enter the maximum number of storeys in the building being assessed

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.

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

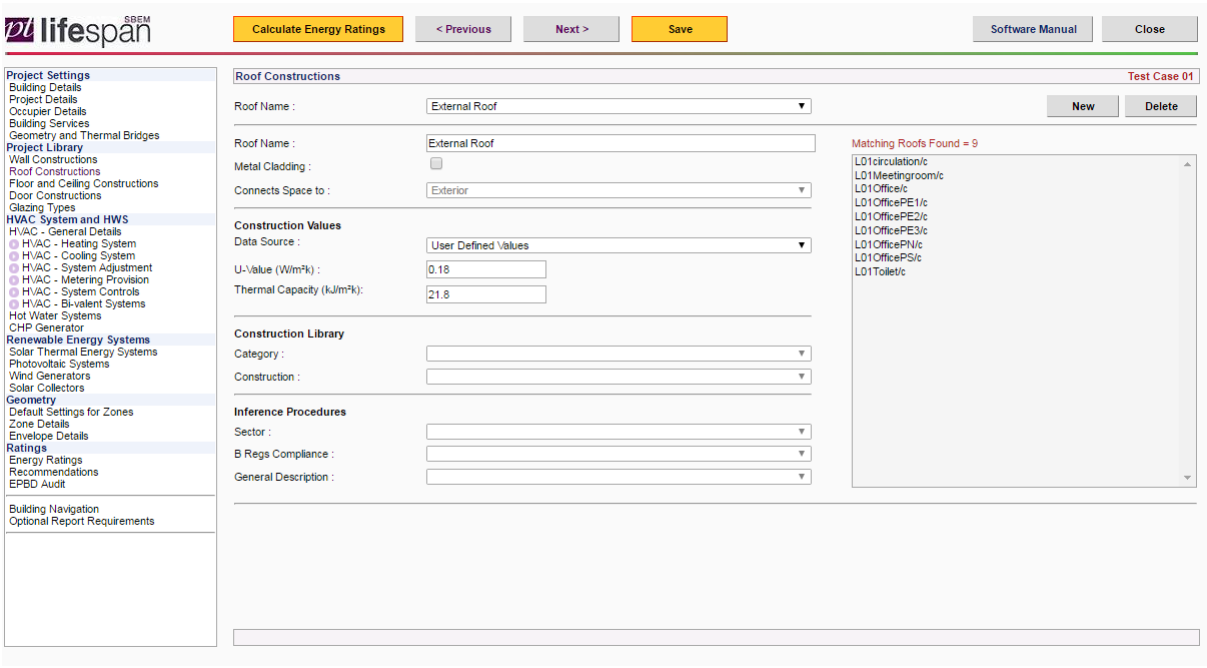
Construction Values – Choose from

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.

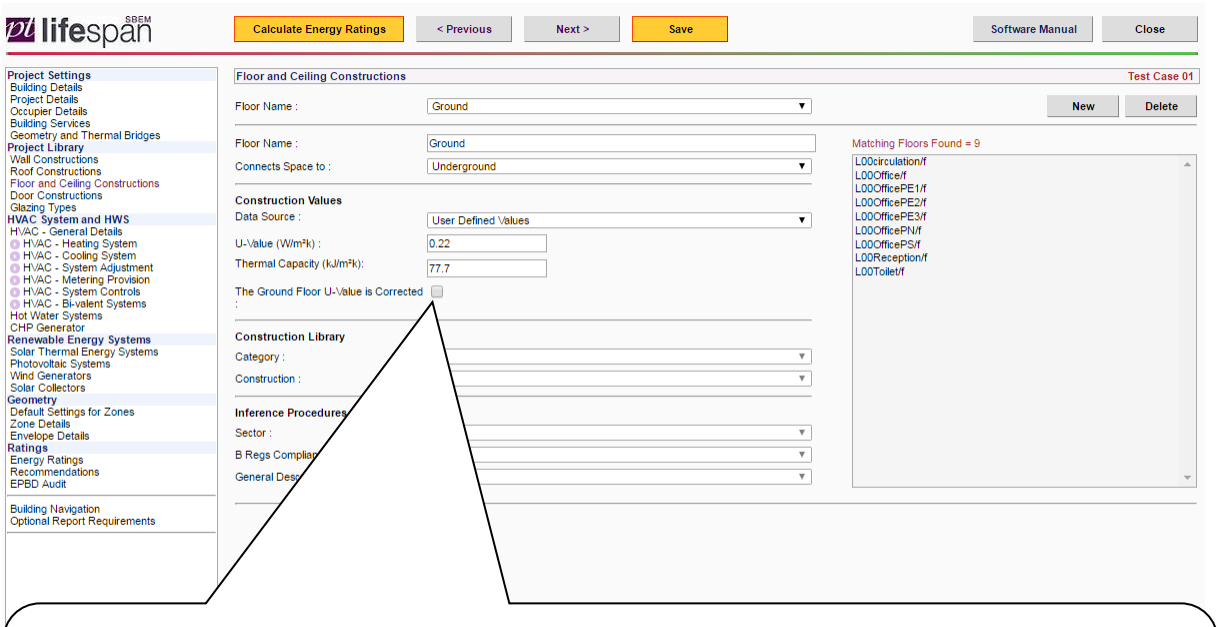
Construction Library: This will permit you to infer the values from the NCM Construction database by selecting from 2 descriptive fields.

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.

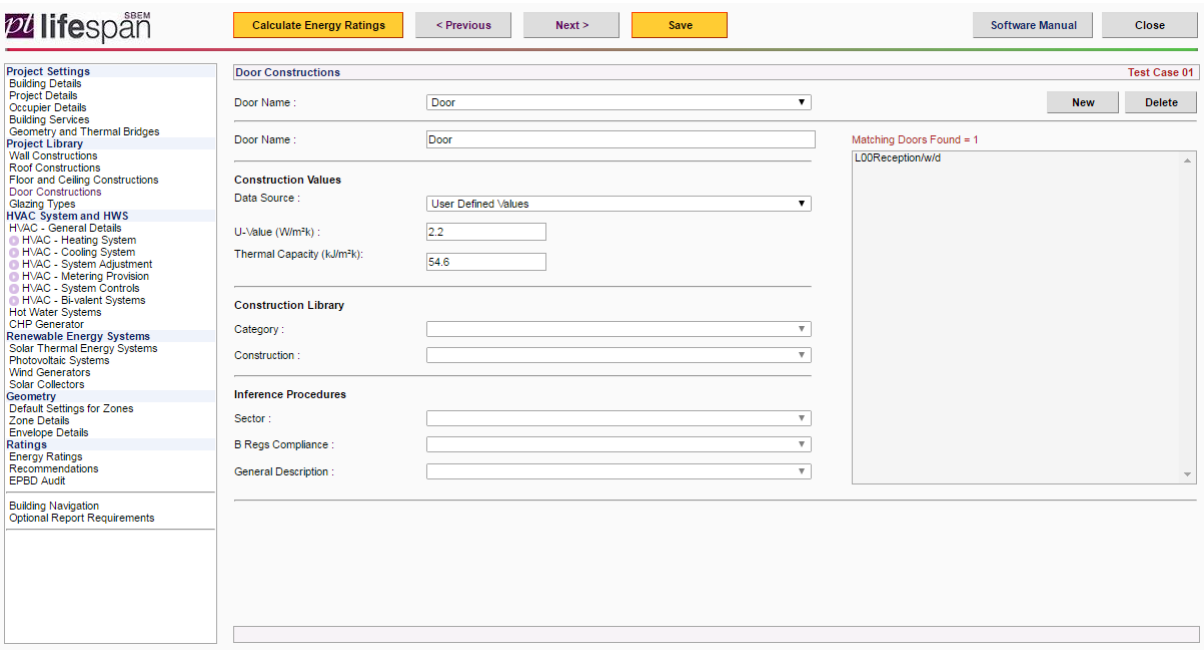
PROJECT LIBRARY – ROOF CONSTRUCTIONS



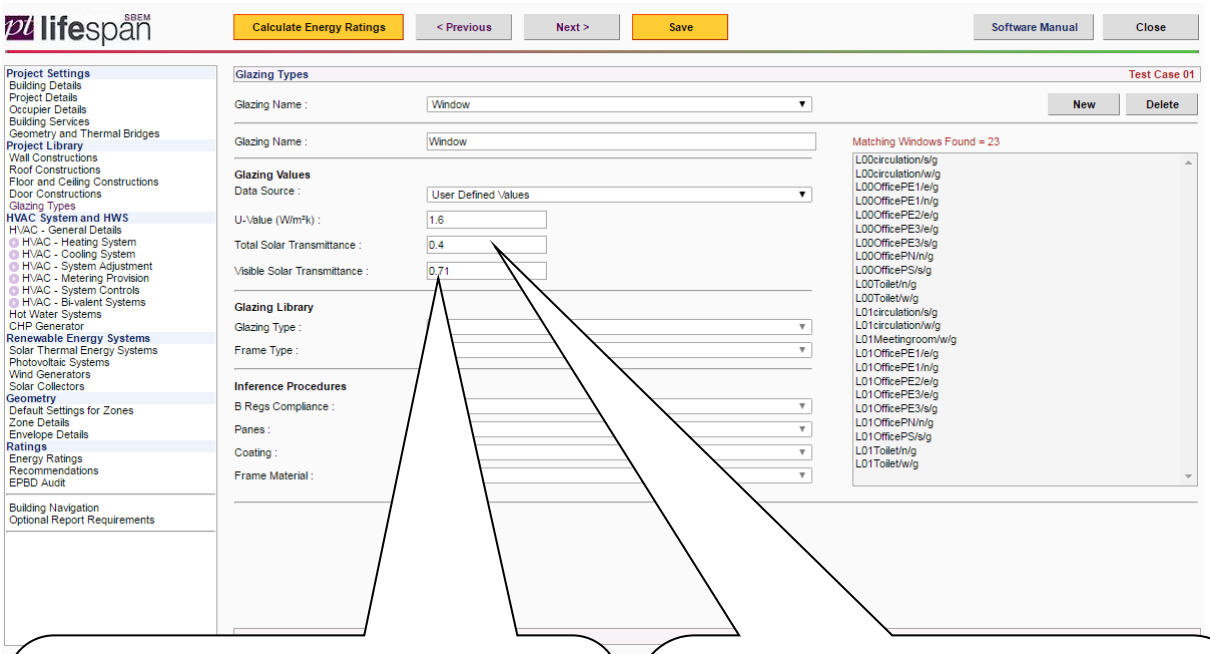
PROJECT LIBRARY – FLOOR AND CEILING CONSTRUCTIONS



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.


lifespan SBEM
Calculate Energy Ratings
< Previous
Next >
Save
Software Manual
Close
Project Settings
Building Details
Project Details
Occupier Details
Building Services
Geometry and Thermal Bridges
Project Library
Wall Constructions
Roof Constructions
Floor and Ceiling Constructions
Door Constructions
Glazing Types
HVAC System and HWS
HVAC - General Details
HVAC - Heating System
HVAC - Cooling System
HVAC - System Adjustment
HVAC - Metering Provision
HVAC - System Controls
HVAC - Bi-valent Systems
Hot Water Systems
CHP Generator
Renewable Energy Systems
Solar Thermal Energy Systems
Photovoltaic Systems
Wind Generators
Solar Collectors
Geometry
Default Settings for Zones
Zone Details
Envelope Details
Ratings
Energy Ratings
Recommendations
EPBD Audit
Building Navigation
Optional Report Requirements
Door Constructions
Test Case 01
Door Name :
Door
New
Delete
Door Name :
Door
Matching Doors Found = 1
L00Reception/w/d
Construction Values
Data Source :
User Defined Values
U-Value (W/m²k) :
2.2
Thermal Capacity (kJ/m²k):
54.6
Construction Library
Category :
Construction :
Inference Procedures
Sector :
B Regs Compliance :
General Description :

PROJECT LIBRARY – GLAZING TYPES



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.

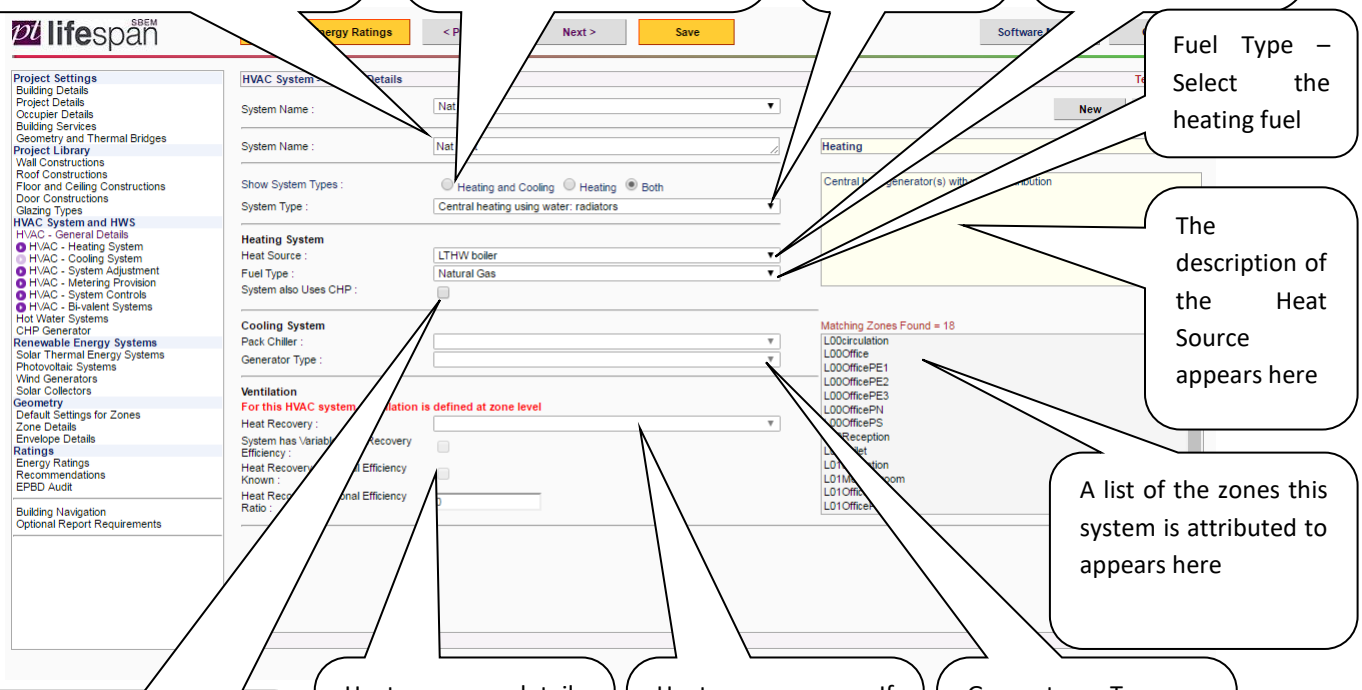
HVAC System and HWS – HVAC - General Details

System name – The name you choose for the system. We recommend using a name you will recognise as unique to this particular system

Show System Types – Use these buttons to filter the system types available for selection from the System Type drop down.

System Type – Select the type of HVAC system you are specifying

Heat Source – Select the source of the heating element of the HVAC system



Fuel Type – Select the heating fuel

The description of the Heat Source appears here

A list of the zones this system is attributed to appears here

System also uses CHP – Check this box if the system also uses Combined Heat and Power

Heat recovery details – Specify the appropriate heat recovery details

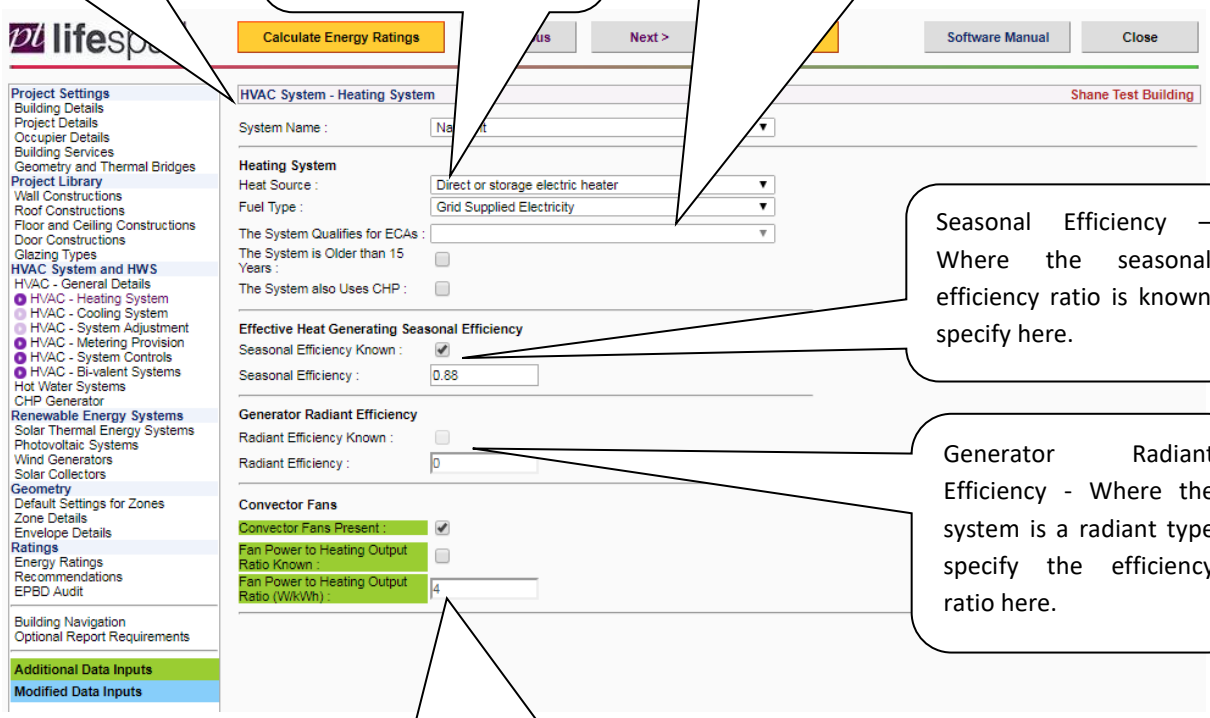
Heat recovery – If heat recovery is present select the appropriate type

Generator Type – Where appropriate, select the cooling generator type

System name – The systems you have created will be listed in this drop down

Heat Source – This will mirror the details specified on the HVAC – General Details page

The system qualifies for ECAs/ The system is older than 15 years – detailing whether the system appears on the ECA list or is over 15 years old will infer an appropriate efficiency where the seasonal efficiency is not known.



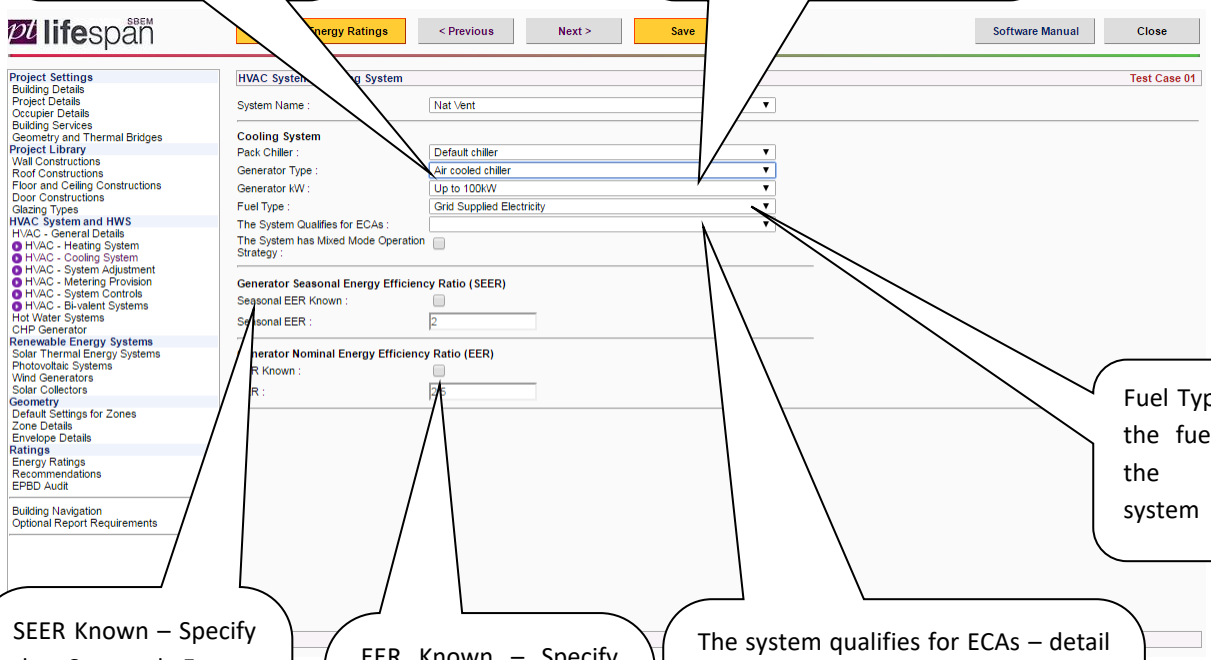
Seasonal Efficiency – Where the seasonal efficiency ratio is known specify here.

Generator Radiant Efficiency - Where the system is a radiant type specify the efficiency ratio here.

Convector Fans - Additional Data Input for Lifespan SBEM v5.4a
If the heating system specified in HVAC – General Details is a fanned system specify if convector fans are present. Where the Fan to Power Heating Output Ratio is known specify here

Generator Type – This will mirror the details specified on the HVAC – General Details page

Generator kW – Select the generator size. This will contribute to inferring a SEER where it is not known



Fuel Type - Select the fuel type of the cooling system

SEER Known – Specify the Seasonal Energy Efficiency Ratio where known. This is used to calculate energy use/ emissions

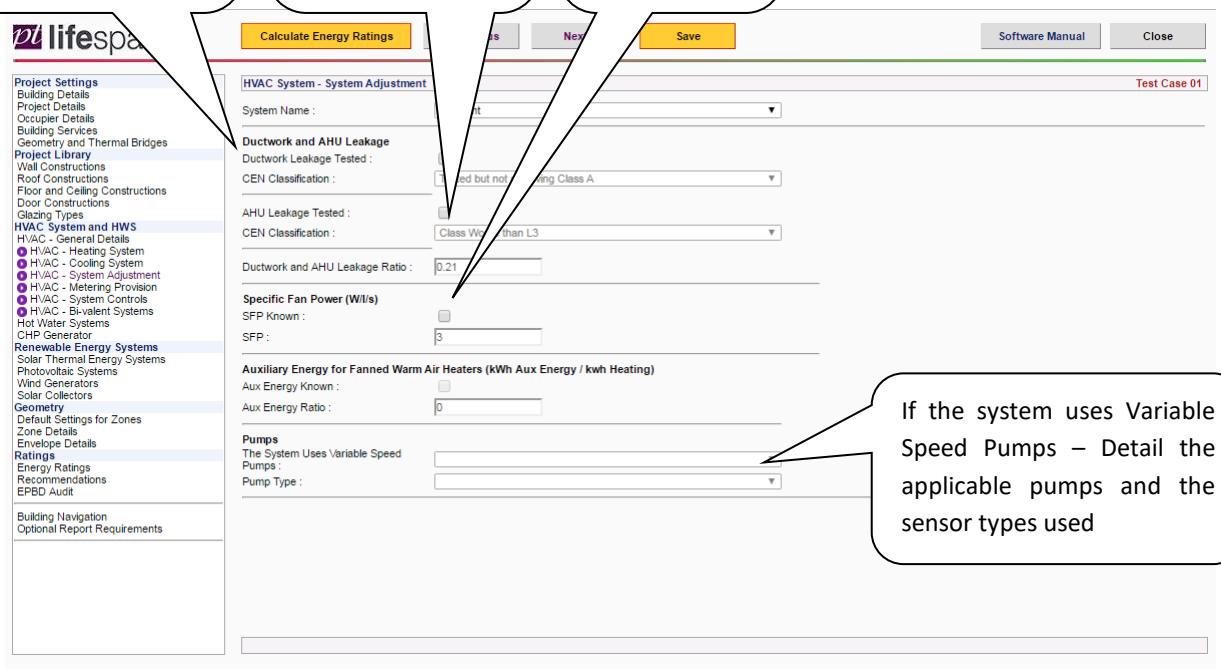
EER Known – Specify the Nominal Energy Efficiency Ratio where known. This is used for Building regulations compliance

The system qualifies for ECAs – detail whether the system appears on the ECA list contribute to inferring an appropriate efficiency where the seasonal efficiency is not known.

Ductwork Leakage Tested – Specify the CEN Classification of any ductwork leakage testing

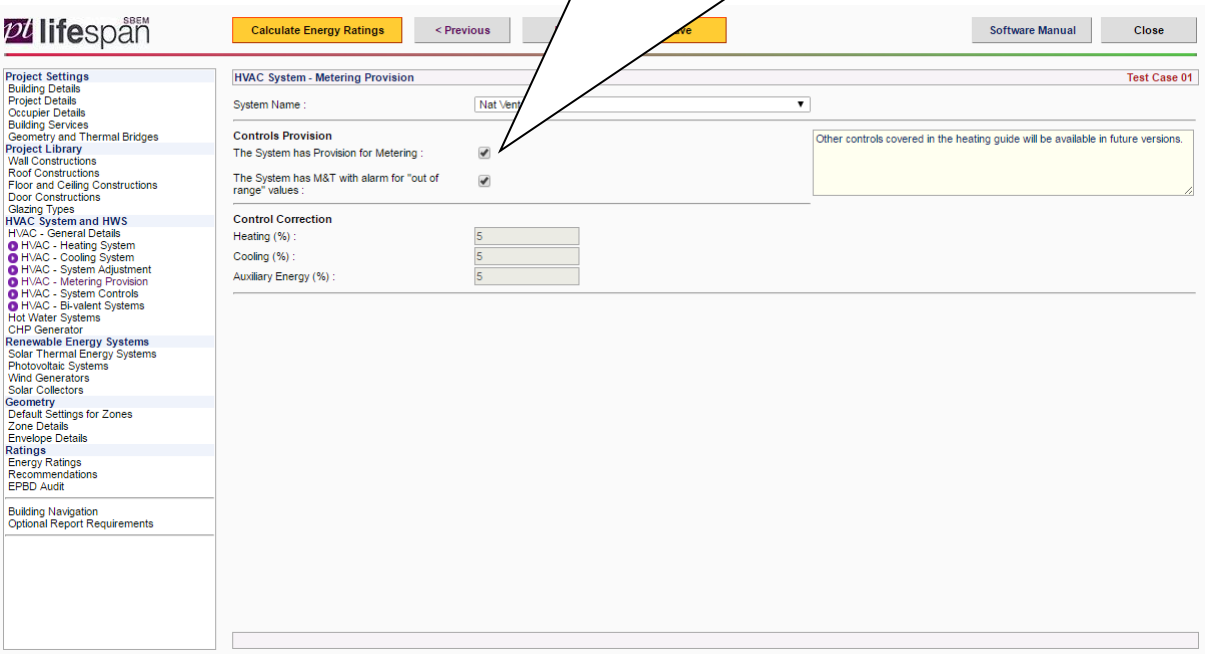
AHU Leakage Tested – Specify the Class of any ductwork leakage testing result

Specific Fan Power – Detail the SFP where known or calculated

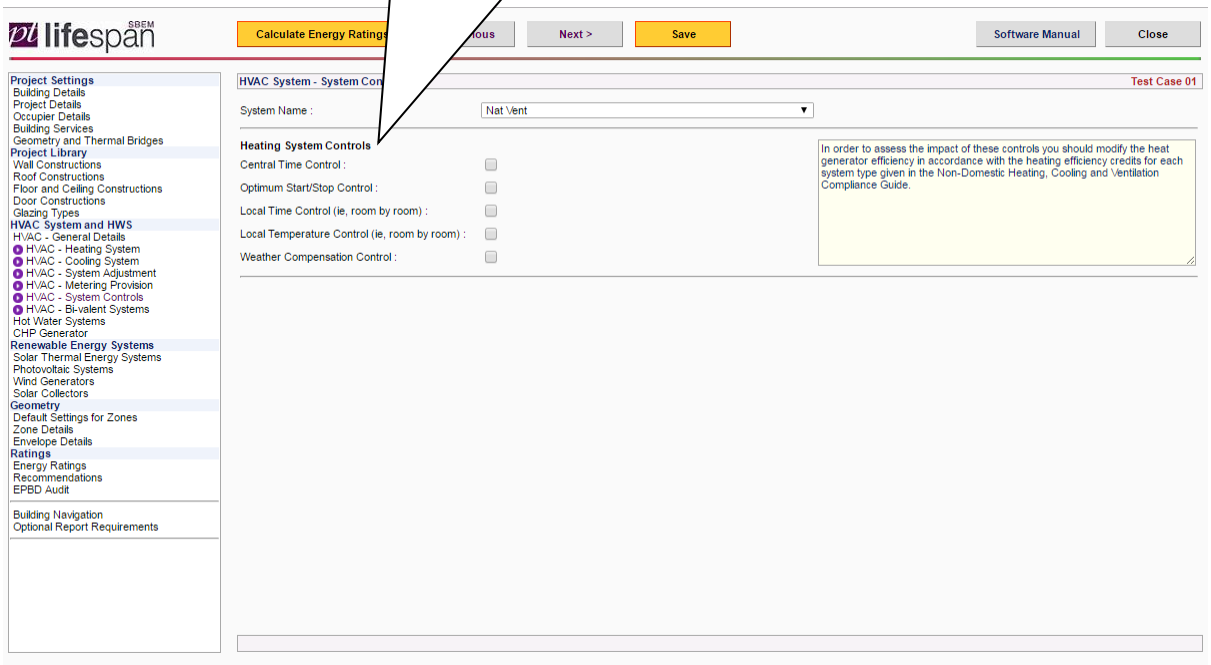


If the system uses Variable Speed Pumps – Detail the applicable pumps and the sensor types used

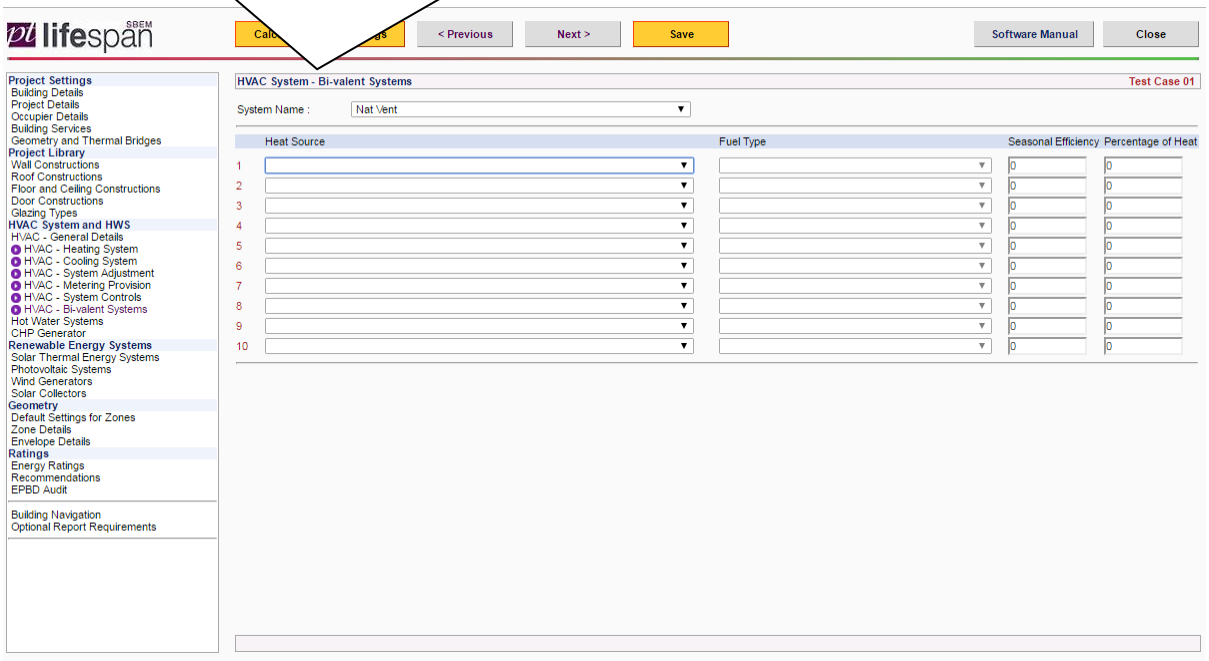
Controls provision – Specify whether the system has Monitoring and Targeting for out of range values. If both are present a 5% control correction is applied to Heating, Cooling and Auxiliary Energy.



Heating System Controls – Detail whether the system has the following controls; Central Time, Optimum Start/ Stop, Local Time, Local temperature, Weather Compensation.



Bi-Valent Systems – For a Bi-Valent system specify the details of the non-primary systems here. For each additional system you must specify the; Heat source, Fuel Type, Heat Generating seasonal efficiency, Percentage of heat provided (0-100).

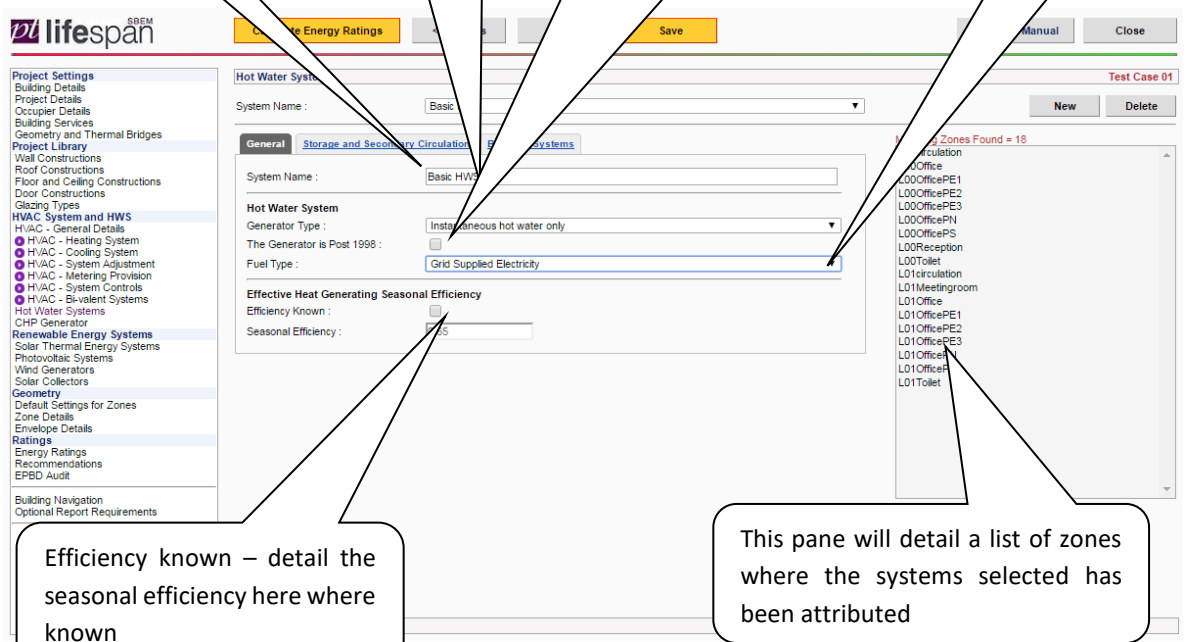


System Name – Specify a name for your system

Generator type – Choose the appropriate generator type

The Generator is Post 1998 – detailing this will infer a more accurate efficiency where the efficiency is not known

Fuel type – Select the appropriate Fuel type for the HWS

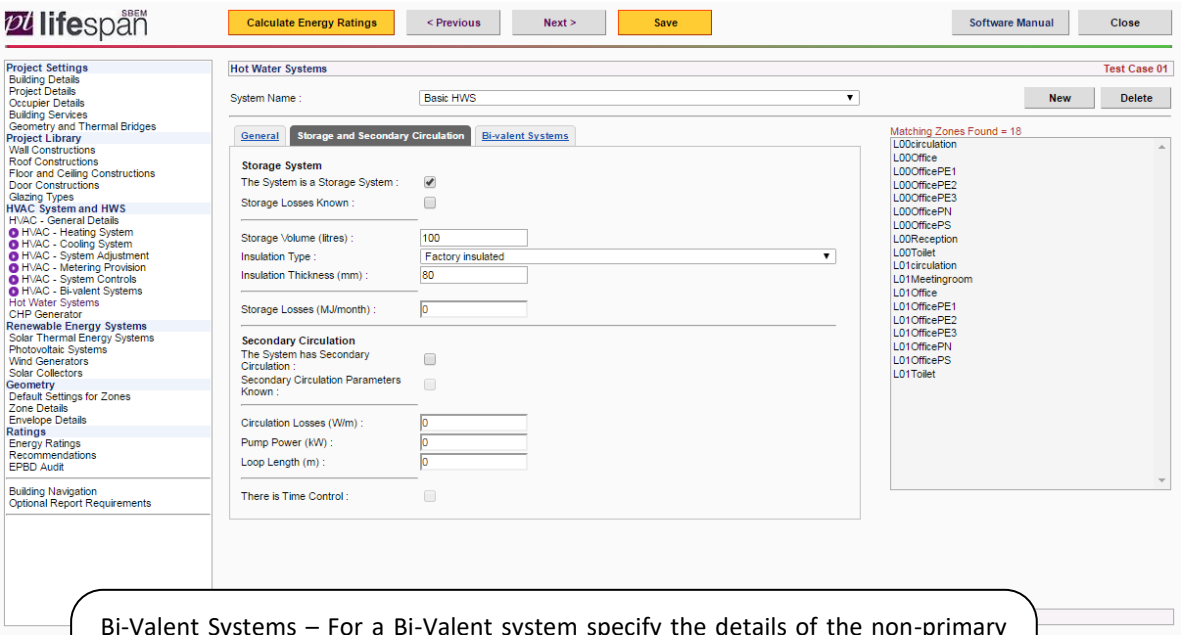


Efficiency known – detail the seasonal efficiency here where known

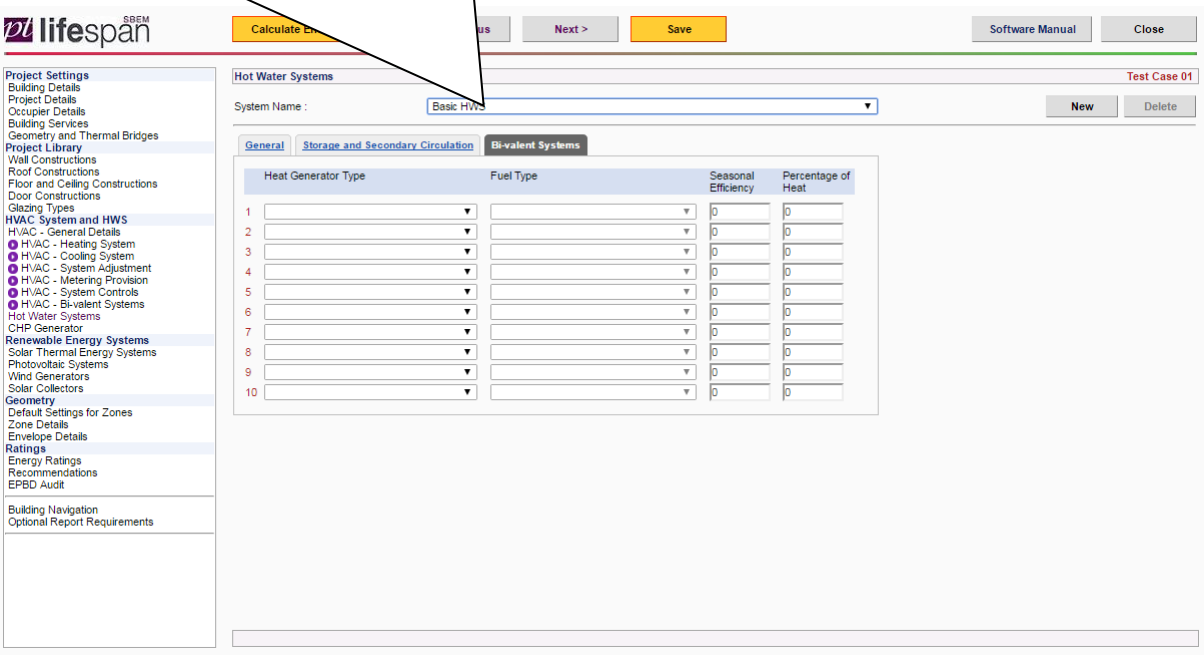
This pane will detail a list of zones where the systems selected has been attributed

The system is a storage system – Check this box when the system stores hot water.

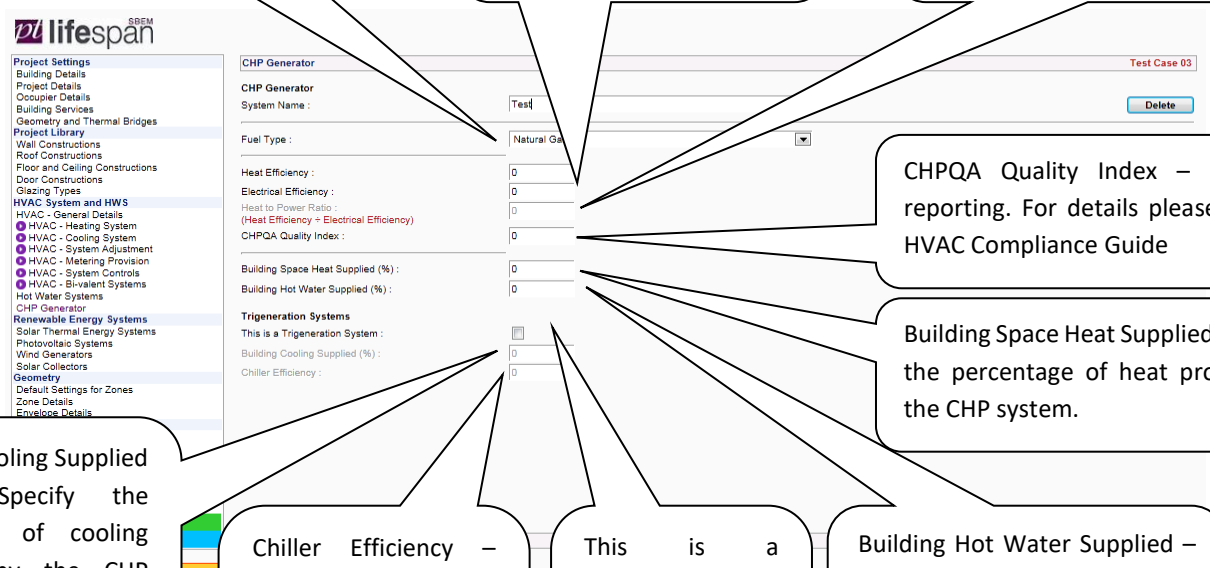
Storage losses known - If you know the storage losses check this box



Bi-Valent Systems – For a Bi-Valent system specify the details of the non-primary systems here. For each additional system you must specify the; Heat source, Fuel Type, Heat Generating seasonal efficiency, Percentage of heat provided (0-100).



HVAC System and HWS – CHP Generator



Fuel Type - Select the Combined Heat and Power fuel type

Heat Efficiency - Specify the Heat efficiency of the CHP unit (Useful heat/ Fuel energy)

Electrical Efficiency - Specify the Electrical efficiency of the CHP unit (Electricity generated/ Fuel energy)

CHPQA Quality Index – Used for reporting. For details please refer to HVAC Compliance Guide

Building Space Heat Supplied – Specify the percentage of heat provided by the CHP system.

Building Cooling Supplied (%) – Specify the percentage of cooling provided by the CHP system.

Chiller Efficiency – Specify the efficiency of the chiller (cooling demand/ cooling energy of generator)

This is a Trigeneration system – Specify whether the system also provides cooling

Building Hot Water Supplied – Specify the percentage of hot water provided by the CHP system.

System Name – Assign your system a name

Multiplier – Where there are multiple identical systems assign the multiplier here

In Hot Water System – Select the HWS system served

Area – Define the aperture area of the solar collector

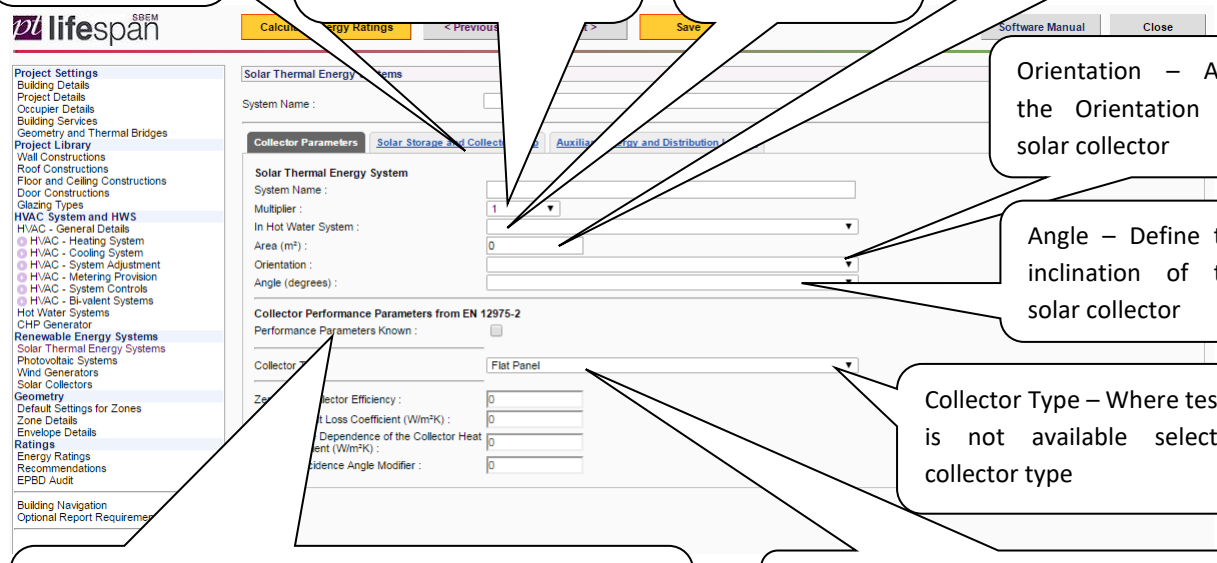
Orientation – Attribute the Orientation of the solar collector

Angle – Define the inclination of the solar collector

Collector Type – Where test data is not available select the collector type

Collector Performance Parameters from EN – 12975-2 known – Check this box if details from EN-12975-2 test data are known.

Where EN – 12975-2 test data is available specify details here



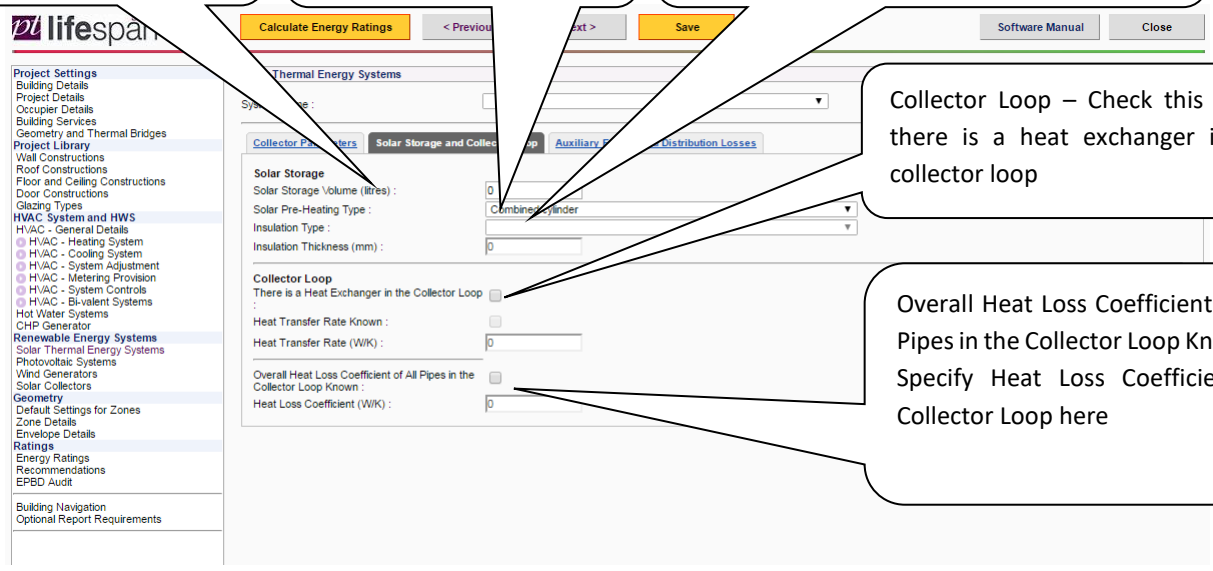
Solar Storage Volume – Specify the dedicated solar storage volume

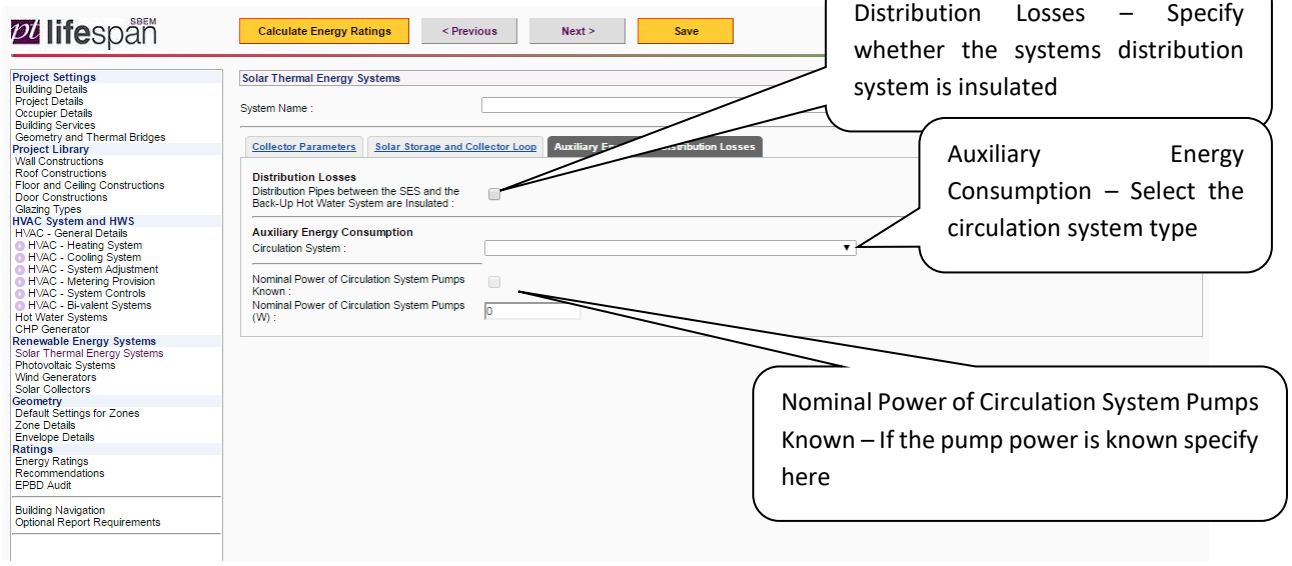
Solar Pre-Heating type – Select the solar pre-heating type

Insulation type – If the Pre-heating type has a separate solar store provide cylinder insulation details here

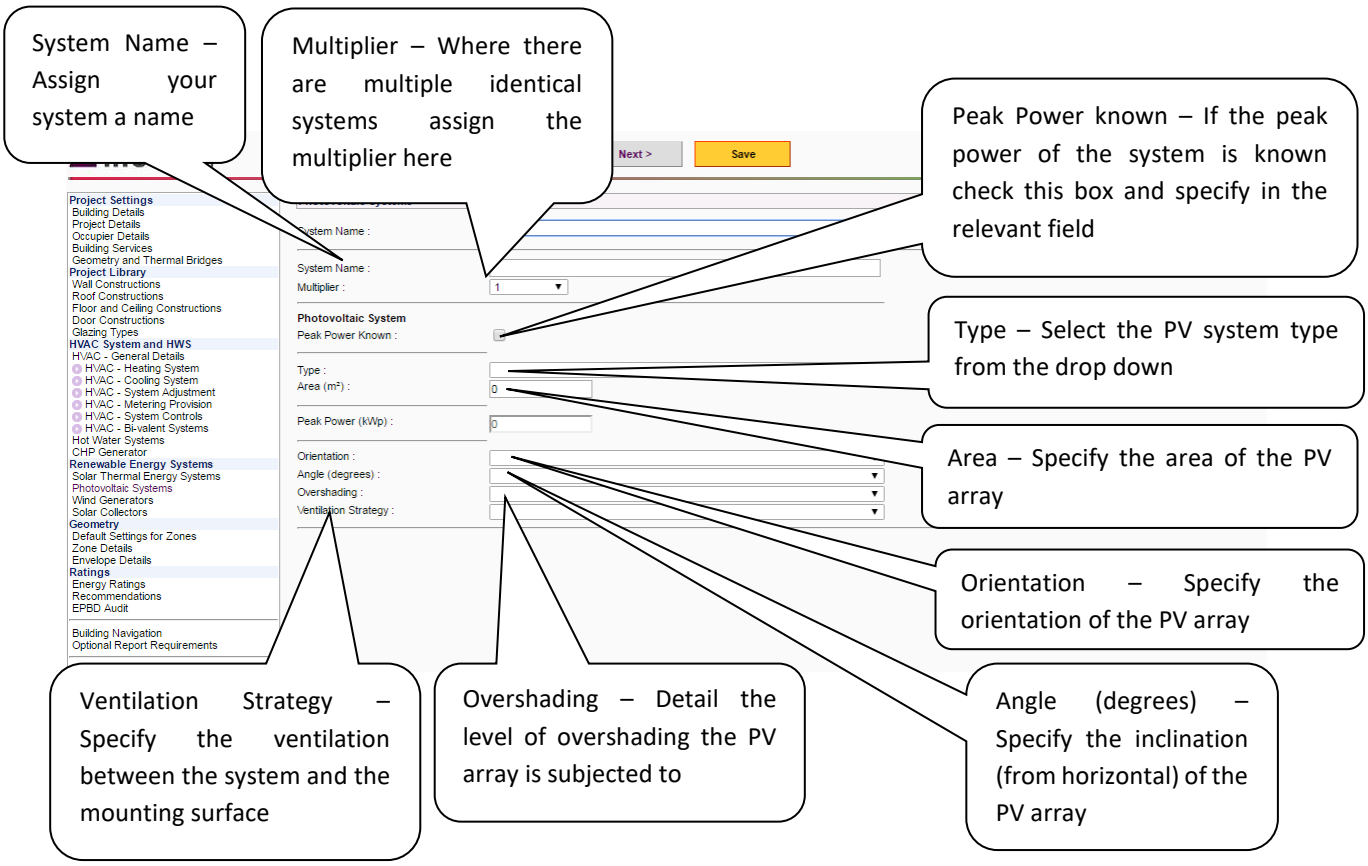
Collector Loop – Check this box if there is a heat exchanger in the collector loop

Overall Heat Loss Coefficient of All Pipes in the Collector Loop Known – Specify Heat Loss Coefficient of Collector Loop here




lifespan SBEM
Calculate Energy Ratings
< Previous
Next >
Save
Project Settings
Building Details
Project Details
Occupier Details
Building Services
Geometry and Thermal Bridges
Project Library
Wall Constructions
Roof Constructions
Floor and Ceiling Constructions
Door Constructions
Glazing Types
HVAC System and HWS
HVAC - General Details
HVAC - Heating System
HVAC - Cooling System
HVAC - System Adjustment
HVAC - Metering Provision
HVAC - System Controls
HVAC - Bi-valent Systems
Hot Water Systems
CHP Generator
Renewable Energy Systems
Solar Thermal Energy Systems
Photovoltaic Systems
Wind Generators
Solar Collectors
Geometry
Default Settings for Zones
Zone Details
Envelope Details
Ratings
Energy Ratings
Recommendations
EPBD Audit
Building Navigation
Optional Report Requirements
Solar Thermal Energy Systems
System Name :
Collector Parameters
Solar Storage and Collector Loop
Distribution Losses
Distribution Losses
Distribution Pipes between the SES and the Back-Up Hot Water System are Insulated :
Auxiliary Energy Consumption
Circulation System :
Nominal Power of Circulation System Pumps Known :
Nominal Power of Circulation System Pumps (W) :
0
Distribution Losses – Specify whether the systems distribution system is insulated
Auxiliary Energy Consumption – Select the circulation system type
Nominal Power of Circulation System Pumps Known – If the pump power is known specify here

RENEWABLE ENERGY SYSTEMS – PHOTOVOLTAIC SYSTEMS



RENEWABLE ENERGY SYSTEMS – WIND GENERATORS

System Name – Assign your system a name

Multiplier – Where there are multiple identical systems assign the multiplier here

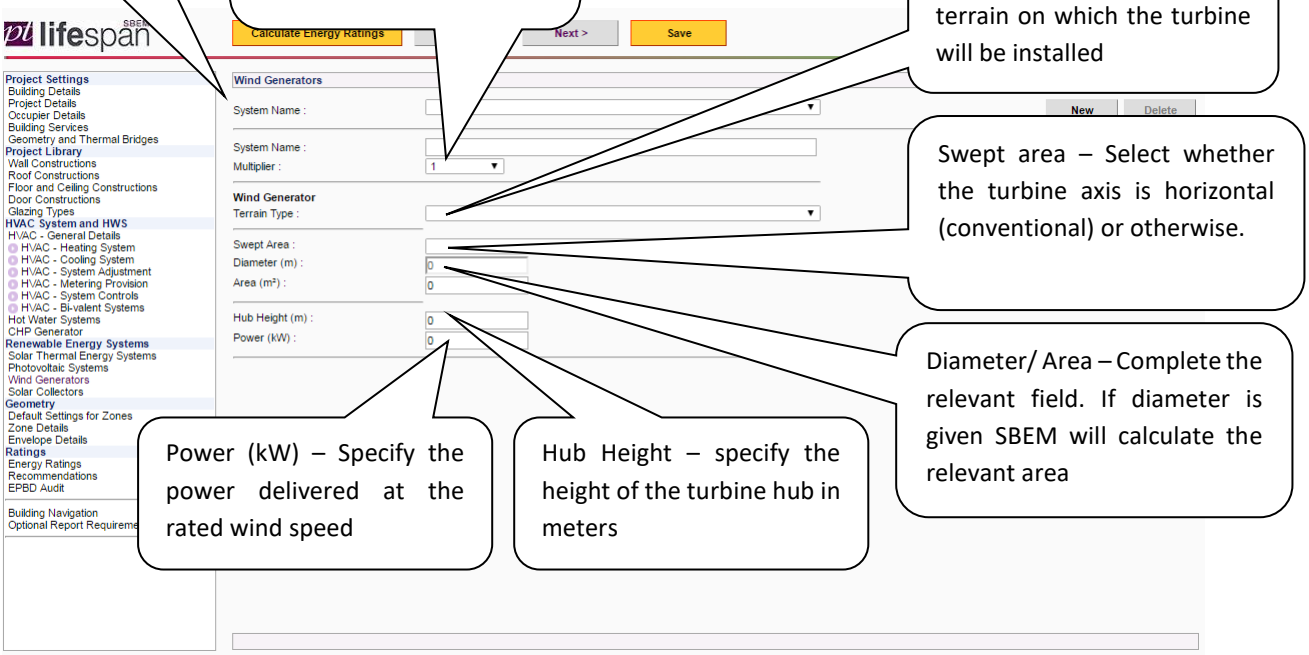
Terrain Type – Specify the terrain on which the turbine will be installed

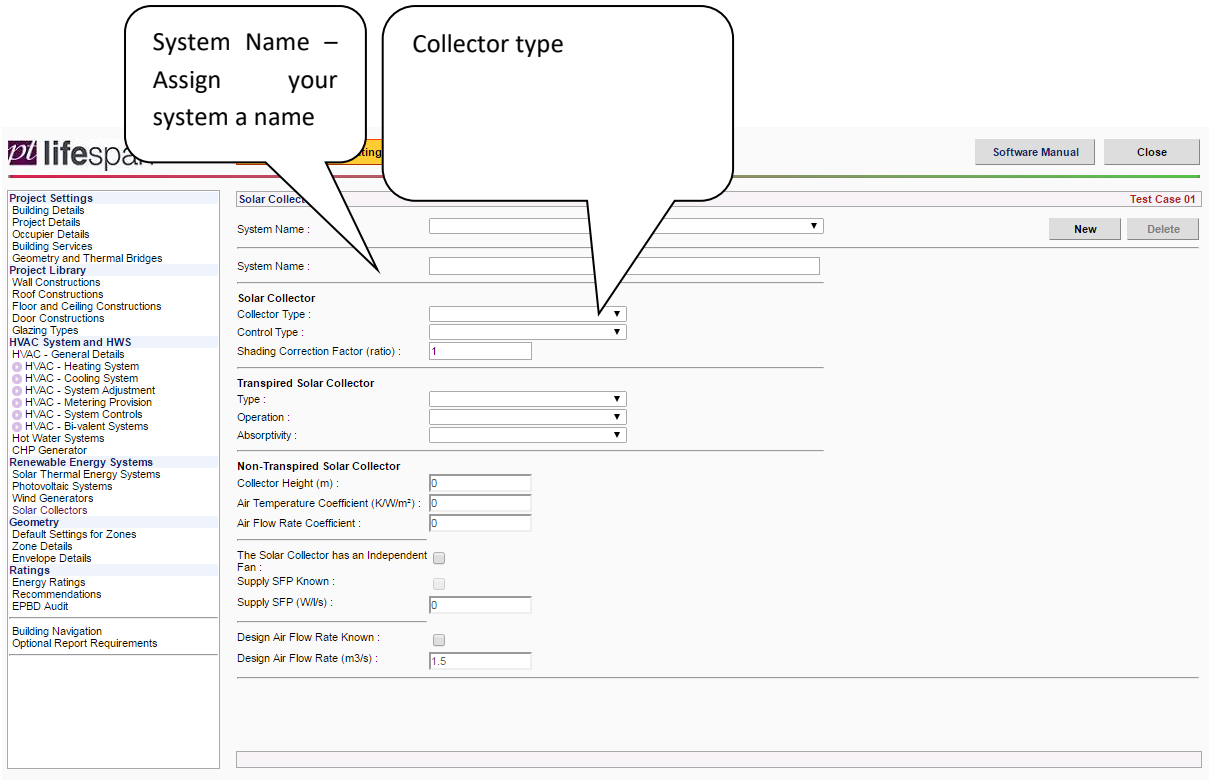
Swept area – Select whether the turbine axis is horizontal (conventional) or otherwise.

Diameter/ Area – Complete the relevant field. If diameter is given SBEM will calculate the relevant area

Power (kW) – Specify the power delivered at the rated wind speed

Hub Height – specify the height of the turbine hub in meters



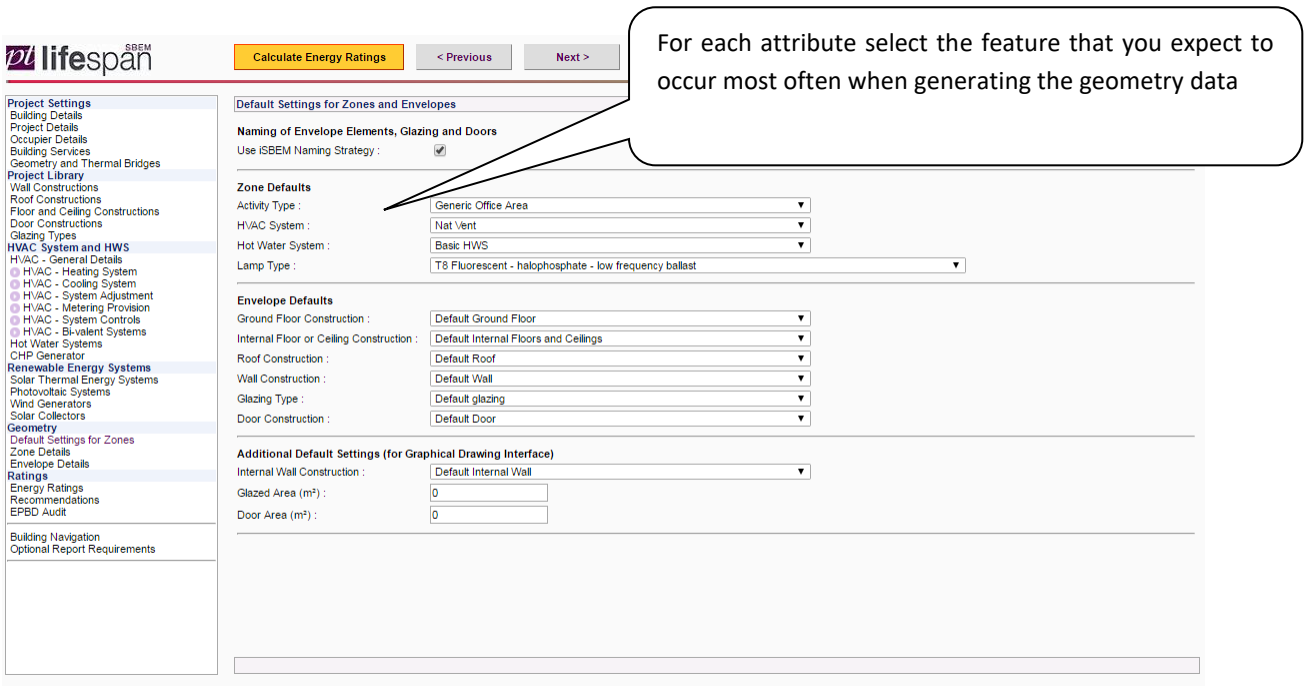

System Name – Assign your system a name
Collector type
Software Manual
Close
Test Case 01
New
Delete
Project Settings
Building Details
Project Details
Occupier Details
Building Services
Geometry and Thermal Bridges
Project Library
Wall Constructions
Roof Constructions
Floor and Ceiling Constructions
Door Constructions
Glazing Types
HVAC System and HWS
HVAC - General Details
HVAC - Heating System
HVAC - Cooling System
HVAC - System Adjustment
HVAC - Metering Provision
HVAC - System Controls
HVAC - Bi-valent Systems
Hot Water Systems
CHP Generator
Renewable Energy Systems
Solar Thermal Energy Systems
Photovoltaic Systems
Wind Generators
Solar Collectors
Geometry
Default Settings for Zones
Zone Details
Envelope Details
Ratings
Energy Ratings
Recommendations
EPBD Audit
Building Navigation
Optional Report Requirements
System Name :
System Name :
Solar Collector
Collector Type :
Control Type :
Shading Correction Factor (ratio) :
1
Transpired Solar Collector
Type :
Operation :
Absorptivity :
Non-Transpired Solar Collector
Collector Height (m) :
Air Temperature Coefficient (K/W/m²) :
Air Flow Rate Coefficient :
The Solar Collector has an Independent Fan :
Supply SFP Known :
Supply SFP (W/l/s) :
Design Air Flow Rate Known :
Design Air Flow Rate (m3/s) :
1.5

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.



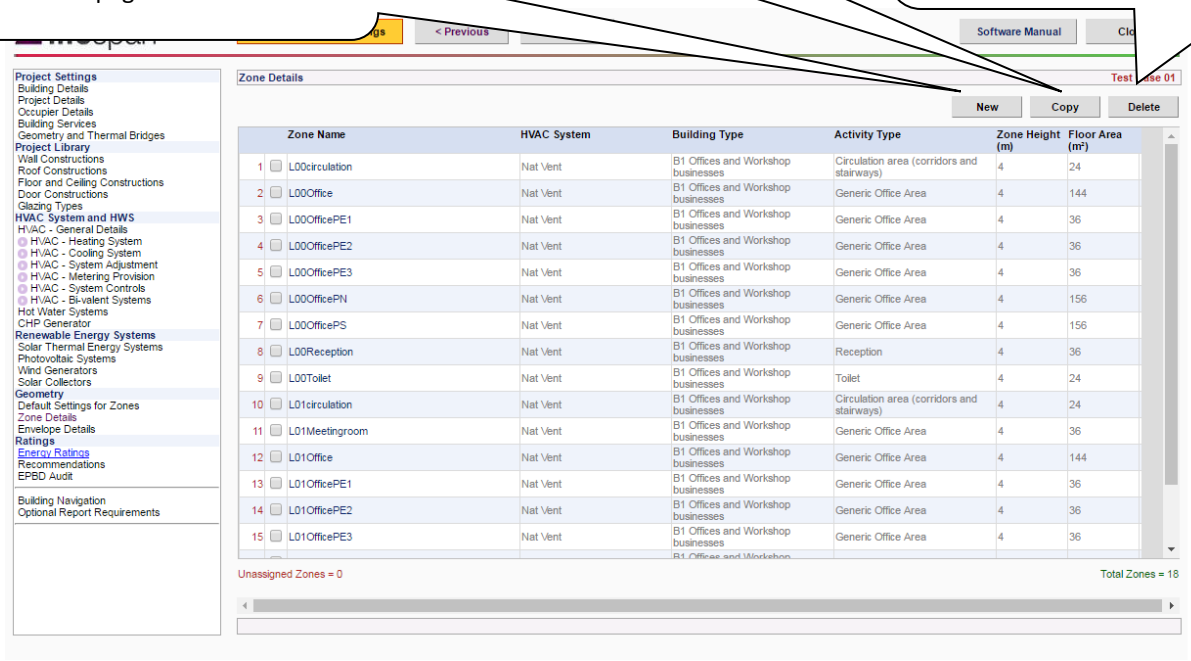
GEOMETRY – ZONE DETAILS

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

New – Click this button to create a new zone. It will take you to the '1. Zone Details' page

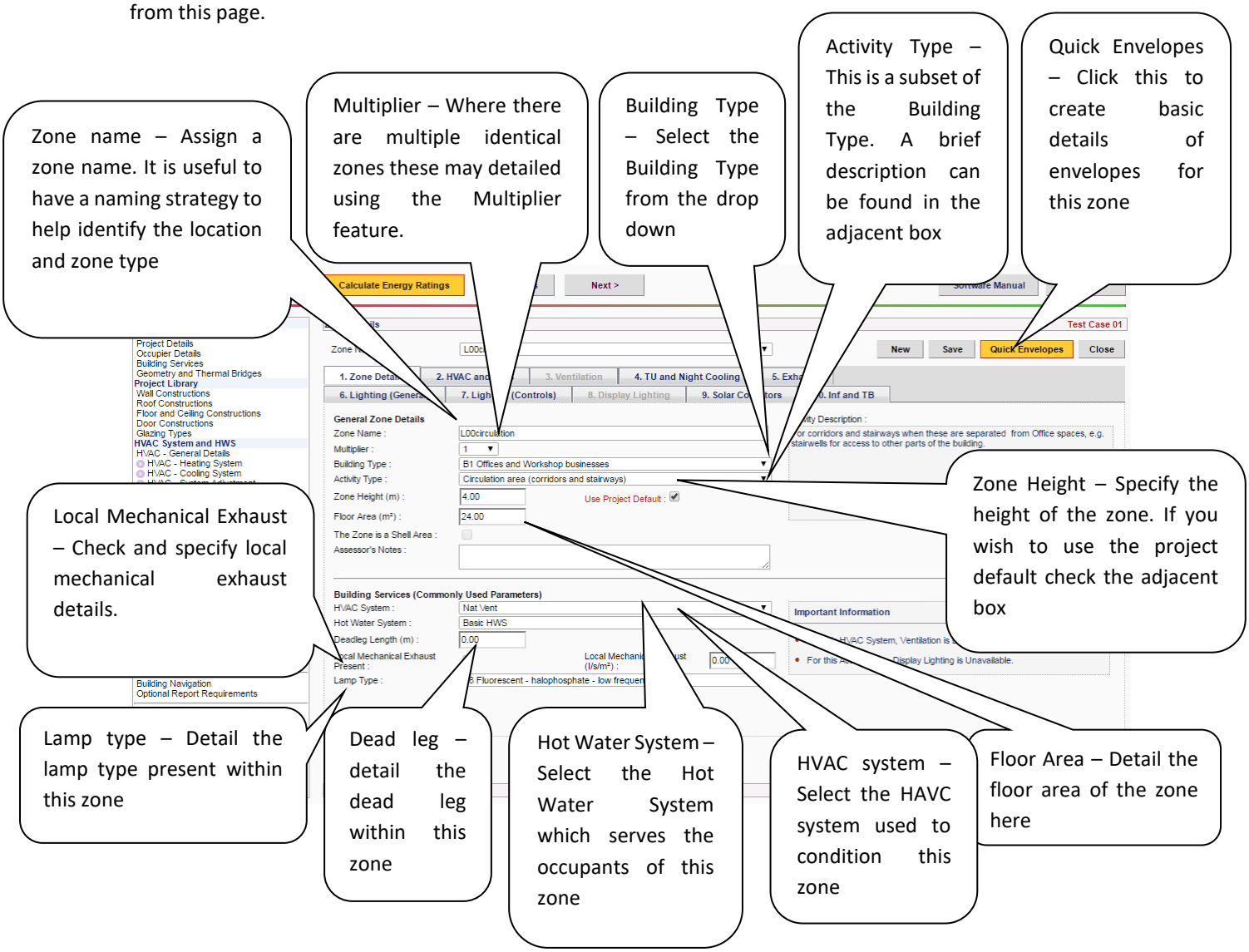
Copy – This button will duplicate any zones selected using the check box adjacent to each zone on this page

Delete – This button will delete any zones selected using the check box adjacent to each zone on this page



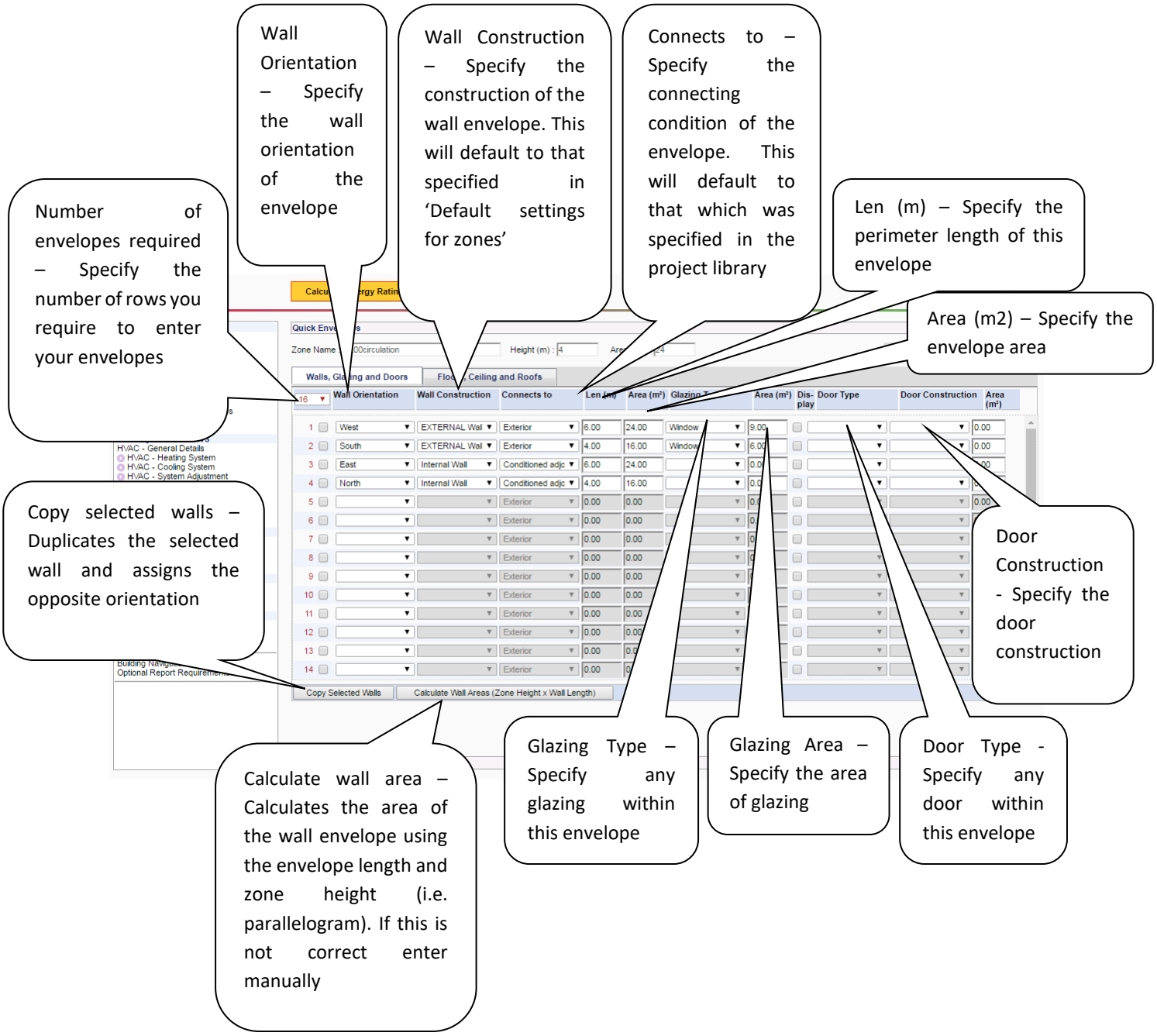
GEOMETRY – ZONE DETAILS – 1. ZONE DETAILS

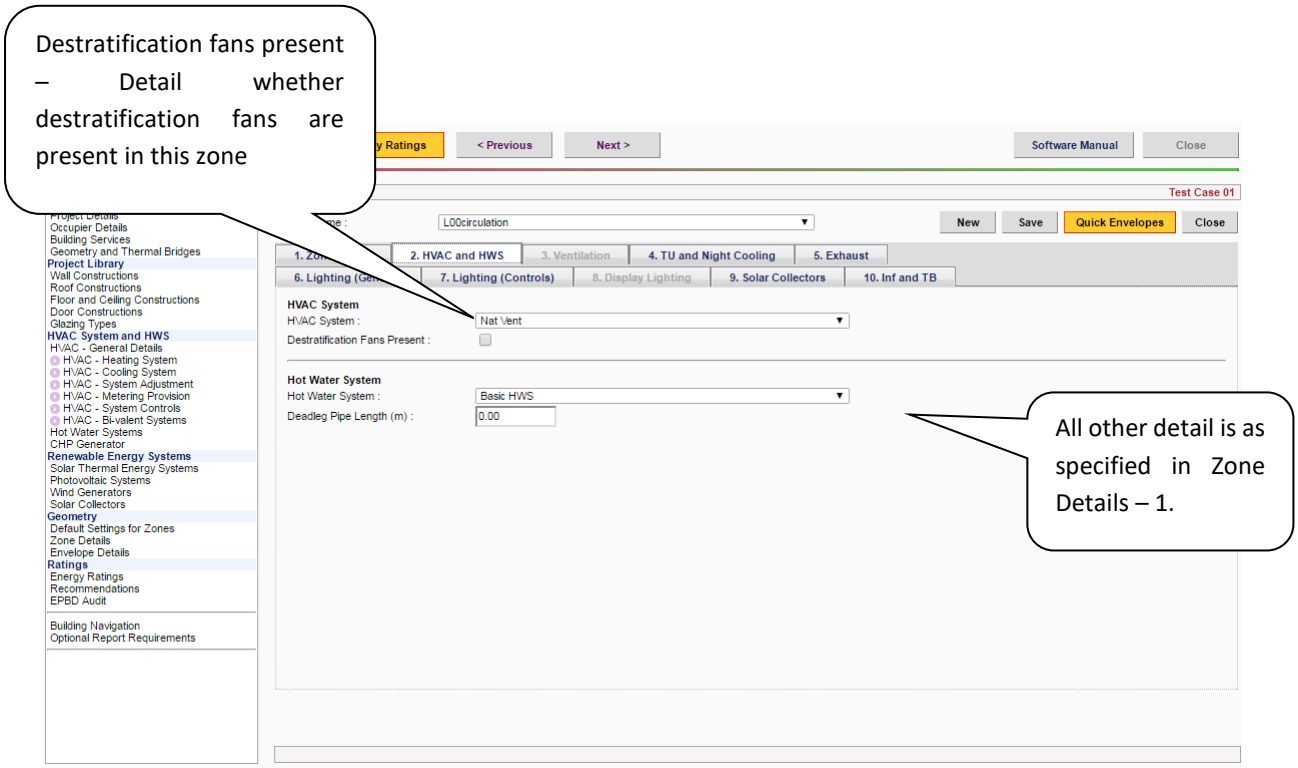
This page details an overview of each zone. The zone information specified here will generate the commonly occurring details behind each attribute, however these details can be amended in the relevant tab accessible from this page.



GEOMETRY – ZONE DETAILS – QUICK ENVELOPES – WALLS GLAZING AND DOORS

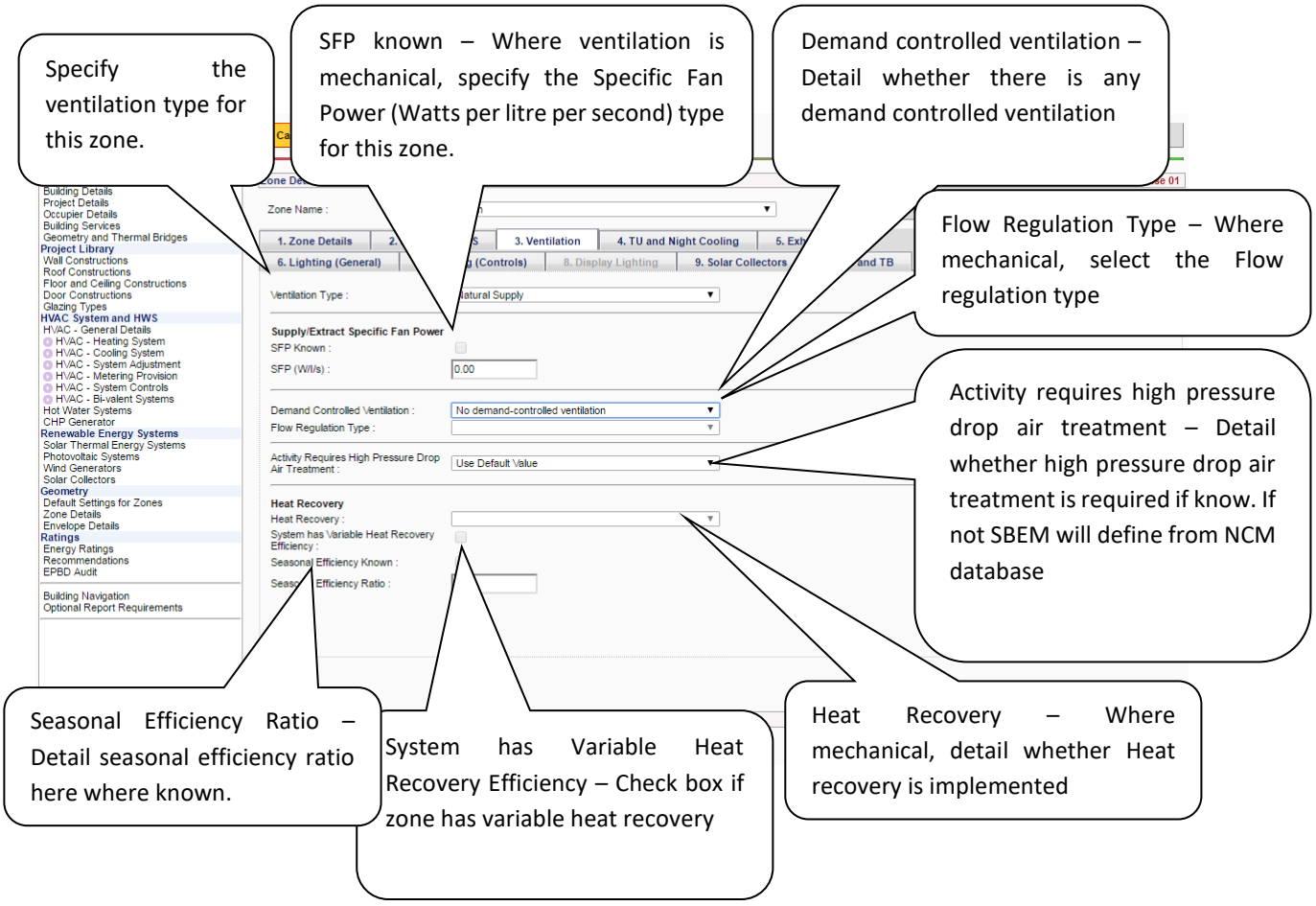
Quick Envelopes is a system we have created to assist in creating the Geometry data required for each SBEM assessment quickly and easily. It is accessible through the Zone Details and Envelope Details area of the software and all details created will be generated as a subset of the zone it is accessed 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.




Destratification fans present – Detail whether destratification fans are present in this zone
y Ratings
< Previous
Next >
Software Manual
Close
Test Case 01
L00circulation
New
Save
Quick Envelopes
Close
Occupier Details
Building Services
Geometry and Thermal Bridges
Project Library
Wall Constructions
Roof Constructions
Floor and Ceiling Constructions
Door Constructions
Glazing Types
HVAC System and HWS
HVAC - General Details
HVAC - Heating System
HVAC - Cooling System
HVAC - System Adjustment
HVAC - Metering Provision
HVAC - System Controls
HVAC - Bi-valent Systems
Hot Water Systems
CHP Generator
Renewable Energy Systems
Solar Thermal Energy Systems
Photovoltaic Systems
Wind Generators
Solar Collectors
Geometry
Default Settings for Zones
Zone Details
Envelope Details
Ratings
Energy Ratings
Recommendations
EPBD Audit
Building Navigation
Optional Report Requirements
2. HVAC and HWS
3. Ventilation
4. TU and Night Cooling
5. Exhaust
7. Lighting (Controls)
8. Display Lighting
9. Solar Collectors
10. Inf and TB
HVAC System
HVAC System :
Nat Vent
Destratification Fans Present :
Hot Water System
Hot Water System :
Basic HWS
Deadleg Pipe Length (m) :
0.00
All other detail is as specified in Zone Details – 1.

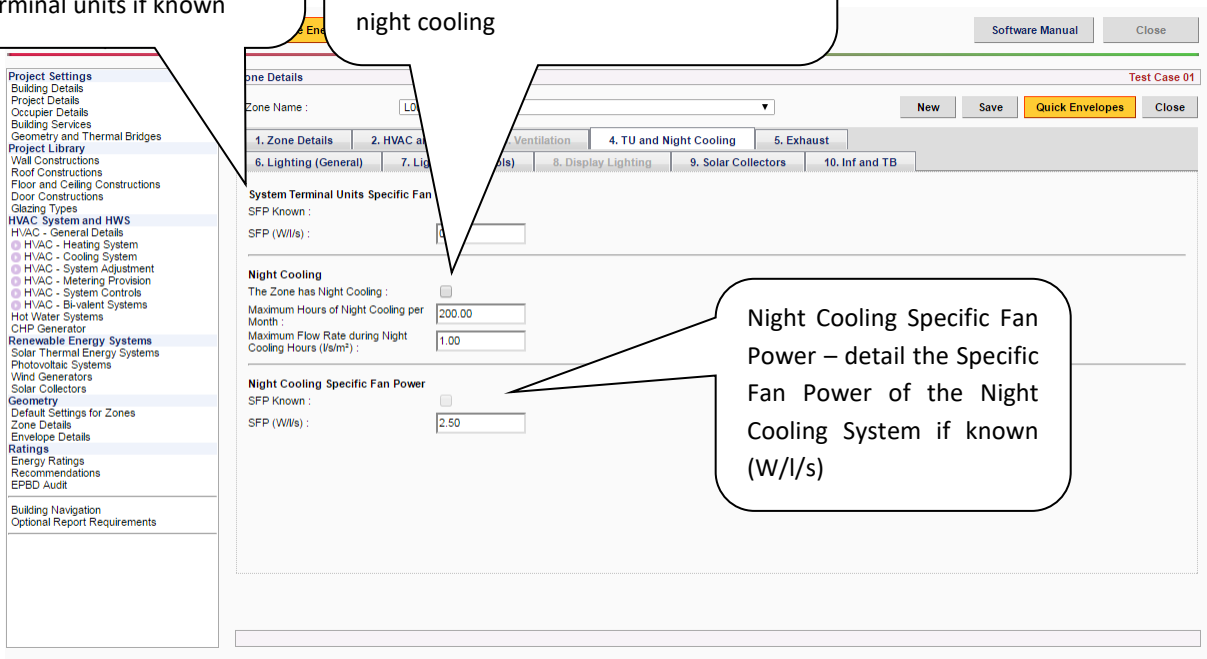
GEOMETRY – ZONE DETAILS – 3. VENTILATION

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.



System Terminal Units Specific Fan Power – Specify the Specific Fan Power of the ventilation terminal units if known

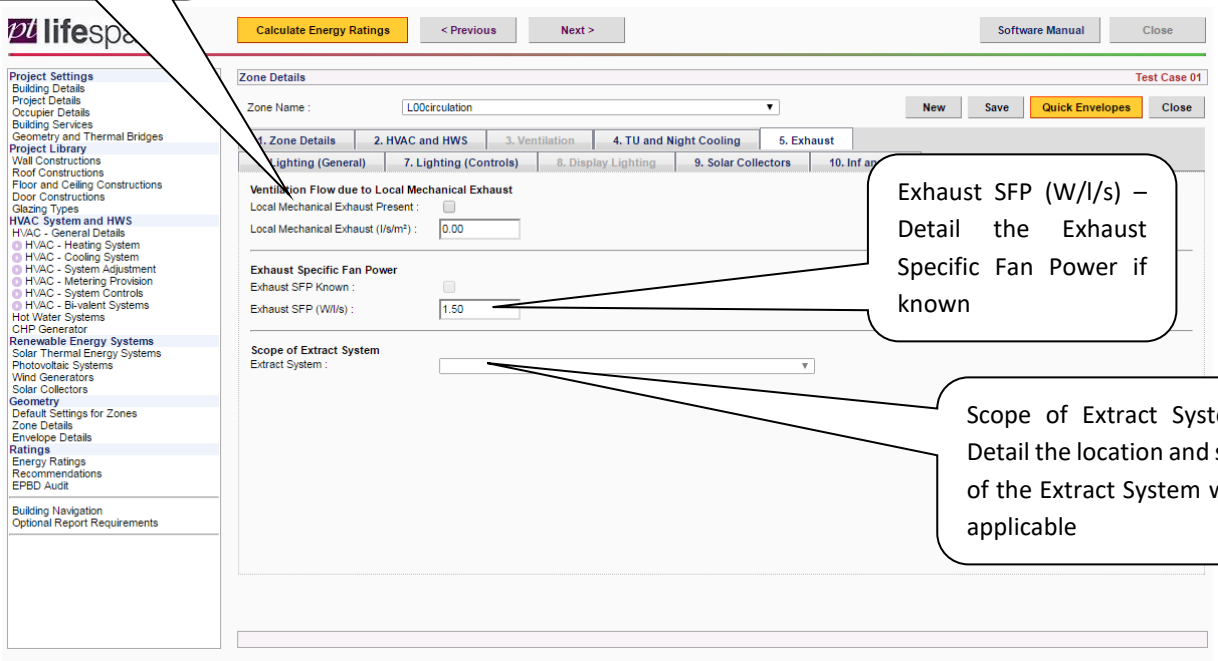
The Zone has Night Cooling – Specify the maximum hours of night cooling per month and Maximum flow rate during night cooling if the zone incorporates night cooling



Night Cooling Specific Fan Power – detail the Specific Fan Power of the Night Cooling System if known (W/l/s)

GEOMETRY – ZONE DETAILS – 5. EXHAUST

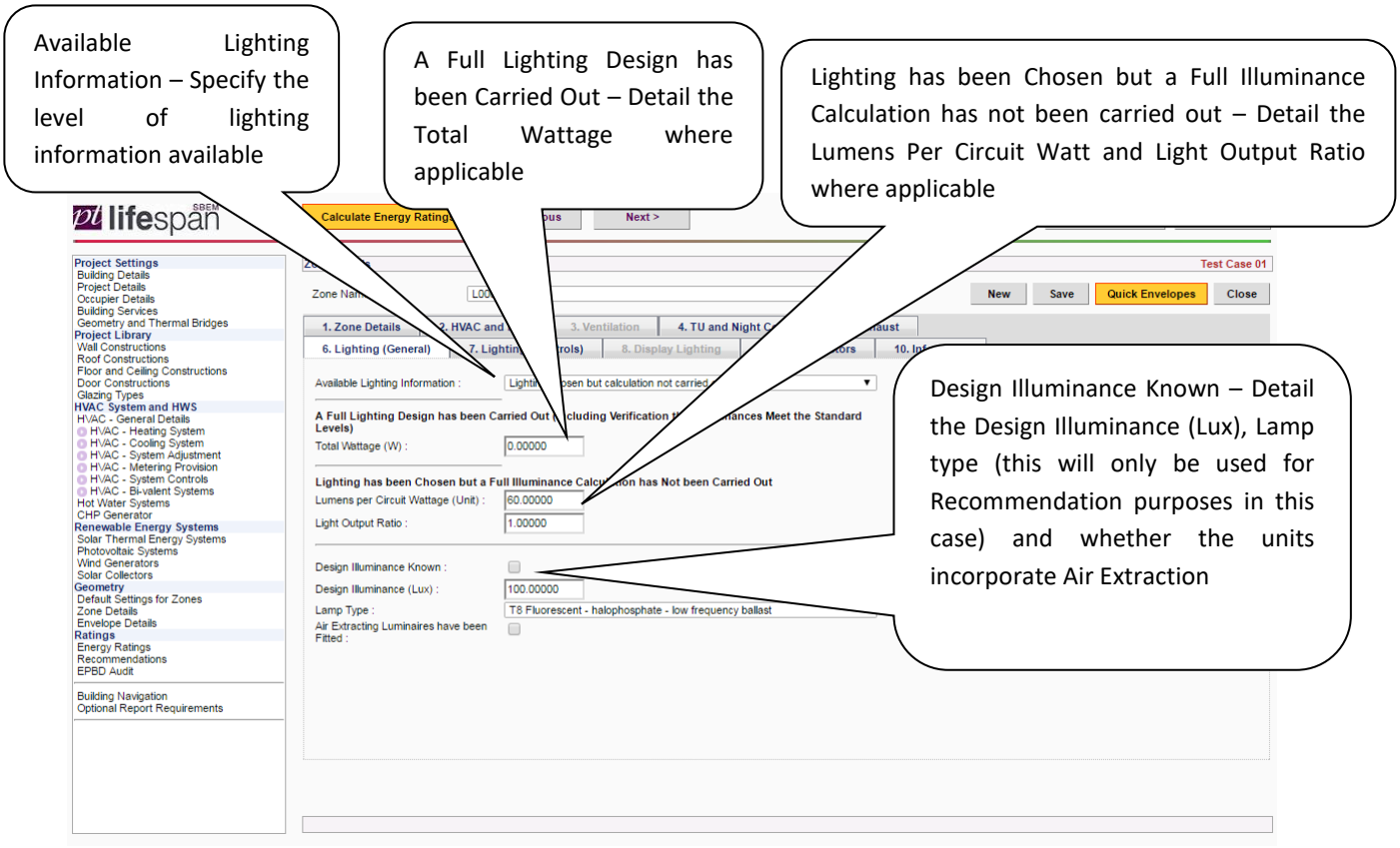
Local Mechanical Exhaust Present – Detail the Local Mechanical Exhaust flow rate if present



Exhaust SFP (W/l/s) – Detail the Exhaust Specific Fan Power if known

Scope of Extract System – Detail the location and scope of the Extract System where applicable

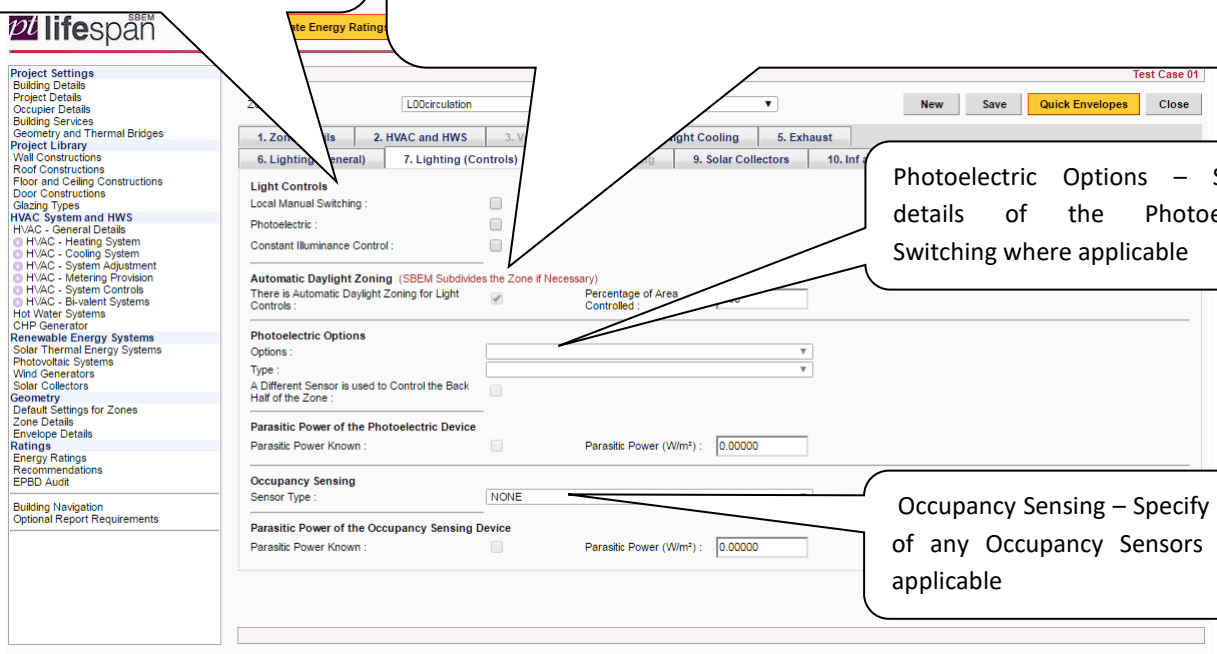
GEOMETRY – ZONE DETAILS – 6. LIGHTING (GENERAL)



GEOMETRY – ZONE DETAILS – 7. LIGHTING (CONTROLS)

Light Controls - Detail whether Local Manual Switching, Photoelectric Controls or Constant Illuminance Controls are present

Automatic Daylight Zoning – Where zone is served by Local Manual Switching or Photoelectric switches SBEM automatically sub divide the zone for day lighting where selected. If your zone has a non-typical layout you may wish to manually sub divide the zone in line with SBEM methodologies

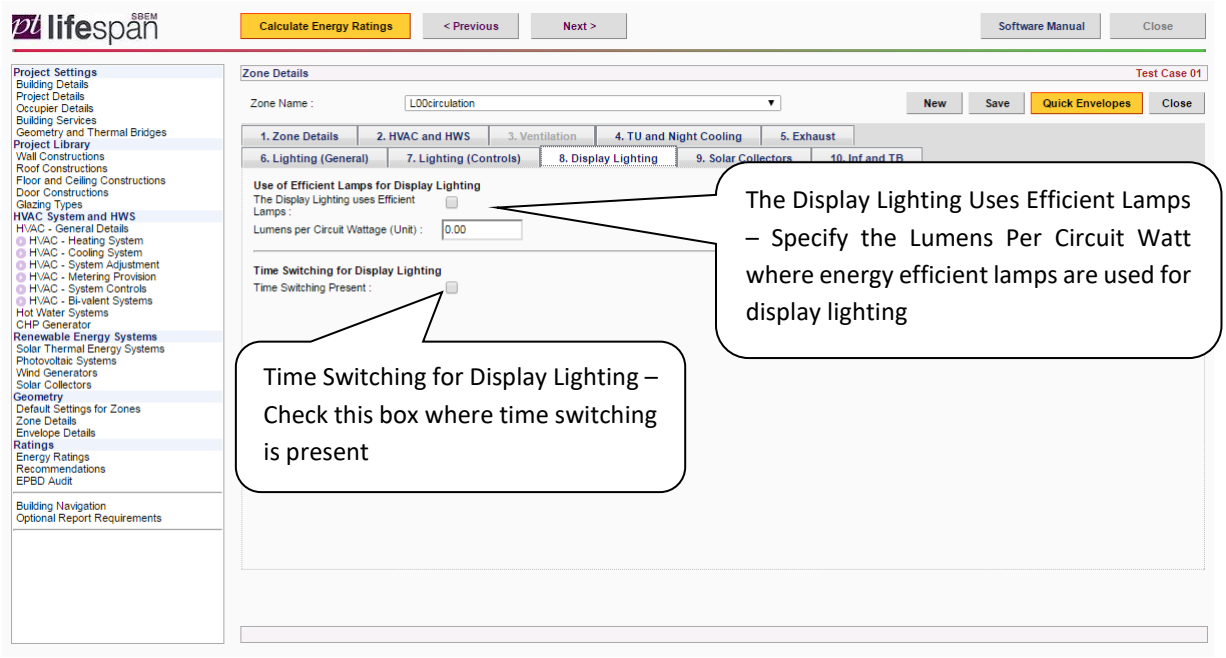


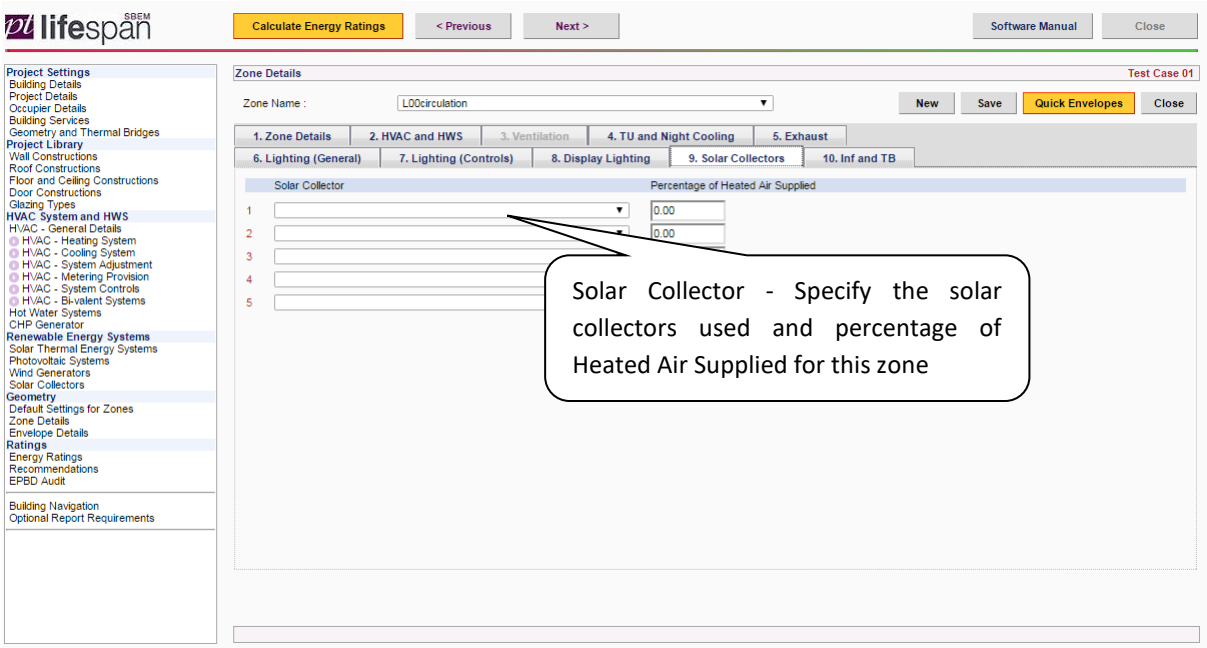
Photoelectric Options – Specify details of the Photoelectric Switching where applicable

Occupancy Sensing – Specify details of any Occupancy Sensors where applicable

GEOMETRY – ZONE DETAILS – 8. DISPLAY LIGHTING

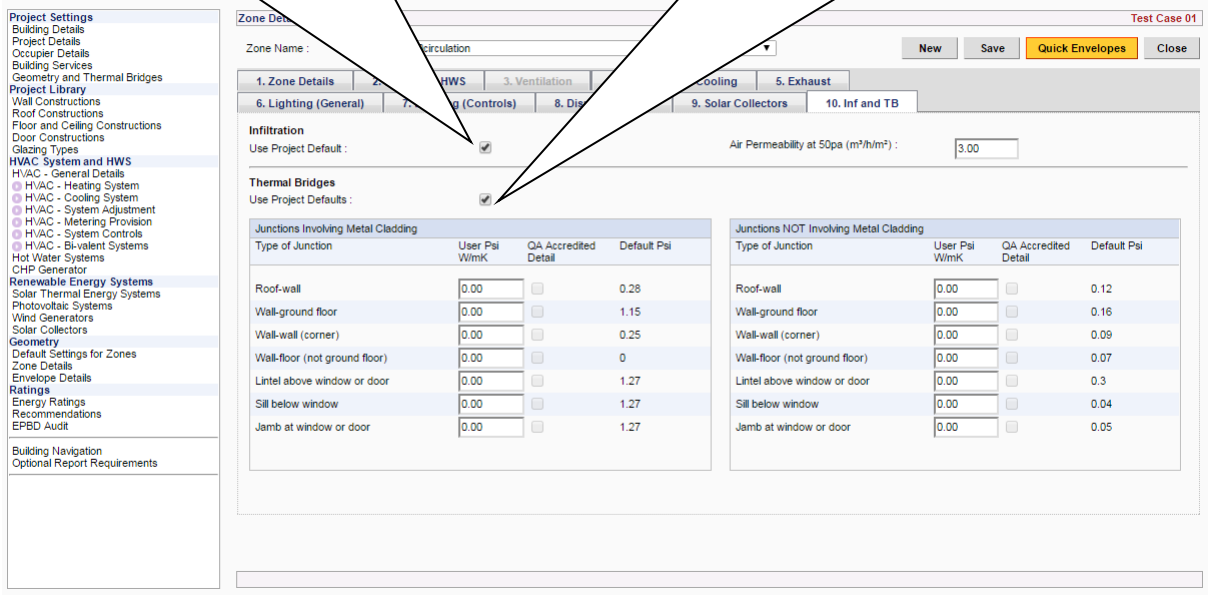
Display lighting is only available where relevant to the zone activity as defined in the NCM activities database.




lifespan SBEM
Calculate Energy Ratings
< Previous
Next >
Software Manual
Close
Project Settings
Building Details
Project Details
Occupier Details
Building Services
Geometry and Thermal Bridges
Project Library
Wall Constructions
Roof Constructions
Floor and Ceiling Constructions
Door Constructions
Glazing Types
HVAC System and HWS
HVAC - General Details
HVAC - Heating System
HVAC - Cooling System
HVAC - System Adjustment
HVAC - Metering Provision
HVAC - System Controls
HVAC - Bi-valent Systems
Hot Water Systems
CHP Generator
Renewable Energy Systems
Solar Thermal Energy Systems
Photovoltaic Systems
Wind Generators
Solar Collectors
Geometry
Default Settings for Zones
Zone Details
Envelope Details
Ratings
Energy Ratings
Recommendations
EPBD Audit
Building Navigation
Optional Report Requirements
Zone Details
Test Case 01
Zone Name :
L00circulation
New
Save
Quick Envelopes
Close
1. Zone Details
2. HVAC and HWS
3. Ventilation
4. TU and Night Cooling
5. Exhaust
6. Lighting (General)
7. Lighting (Controls)
8. Display Lighting
9. Solar Collectors
10. Inf and TB
Solar Collector
Percentage of Heated Air Supplied
1
2
3
4
5
0.00
0.00
Solar Collector - Specify the solar collectors used and percentage of Heated Air Supplied for this zone

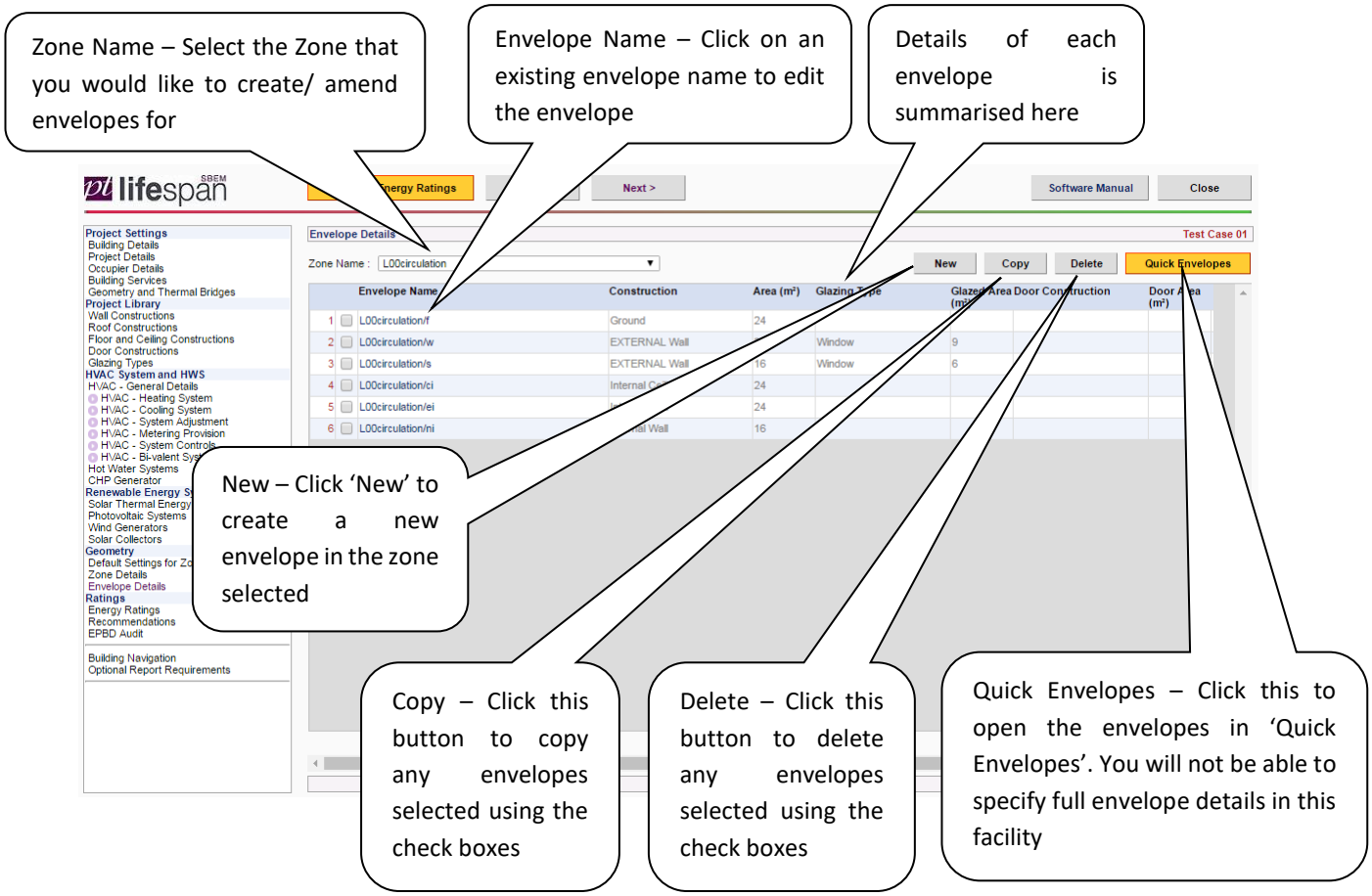
Infiltration – Specify the infiltration for this zone if different to project default

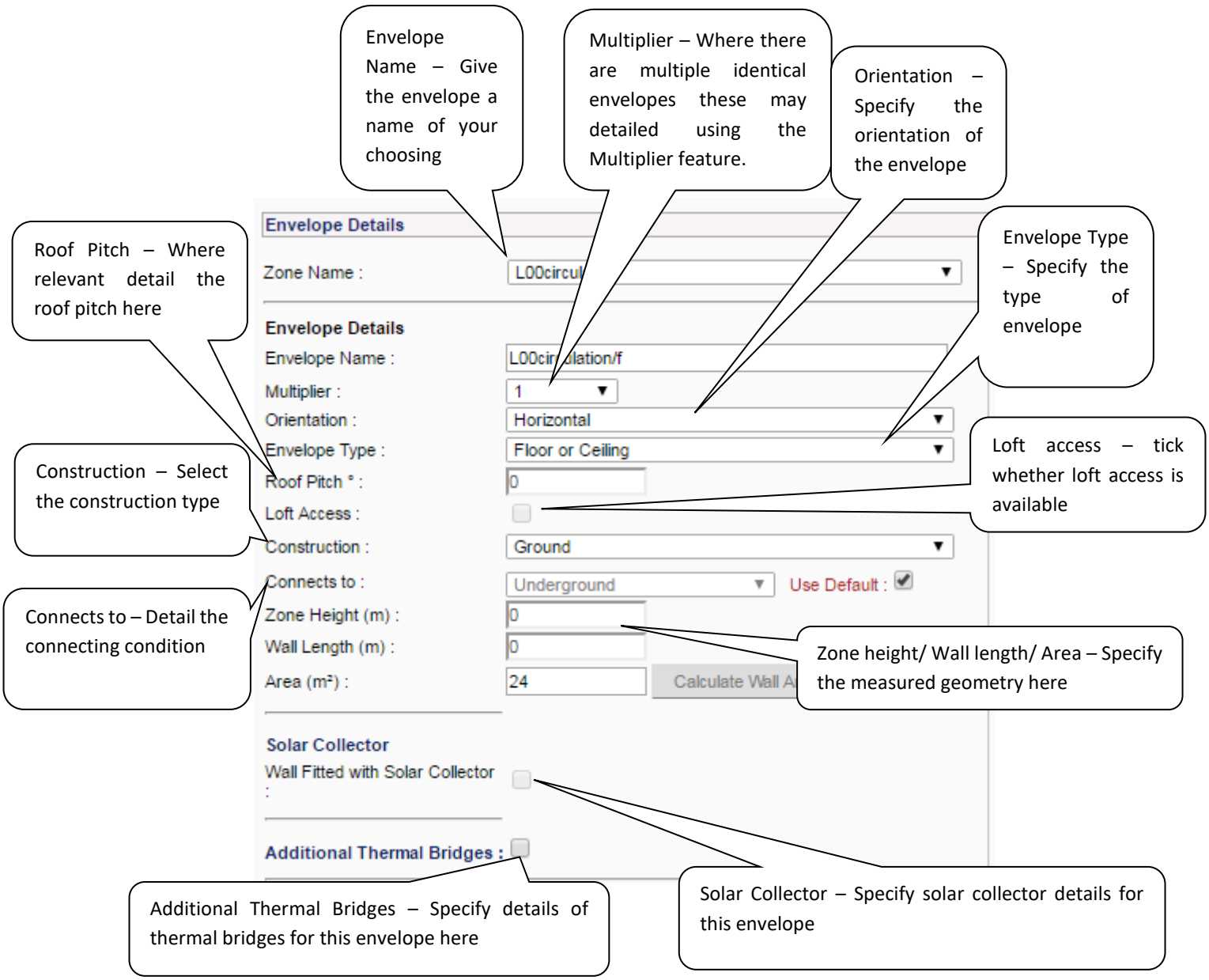
Thermal Bridges – Specify calculated thermal bridges if different to project defaults

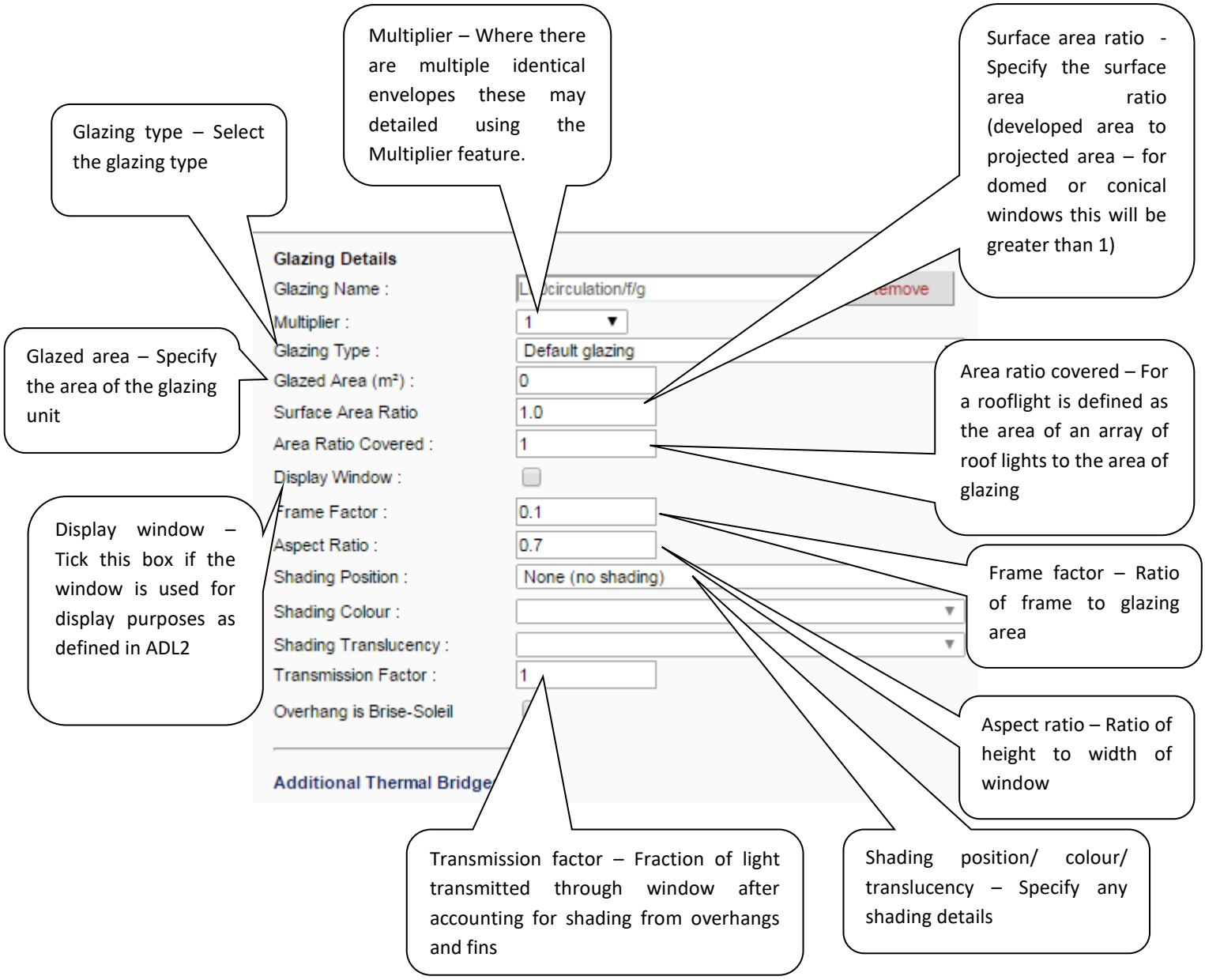


GEOMETRY – ENVELOPE DETAILS

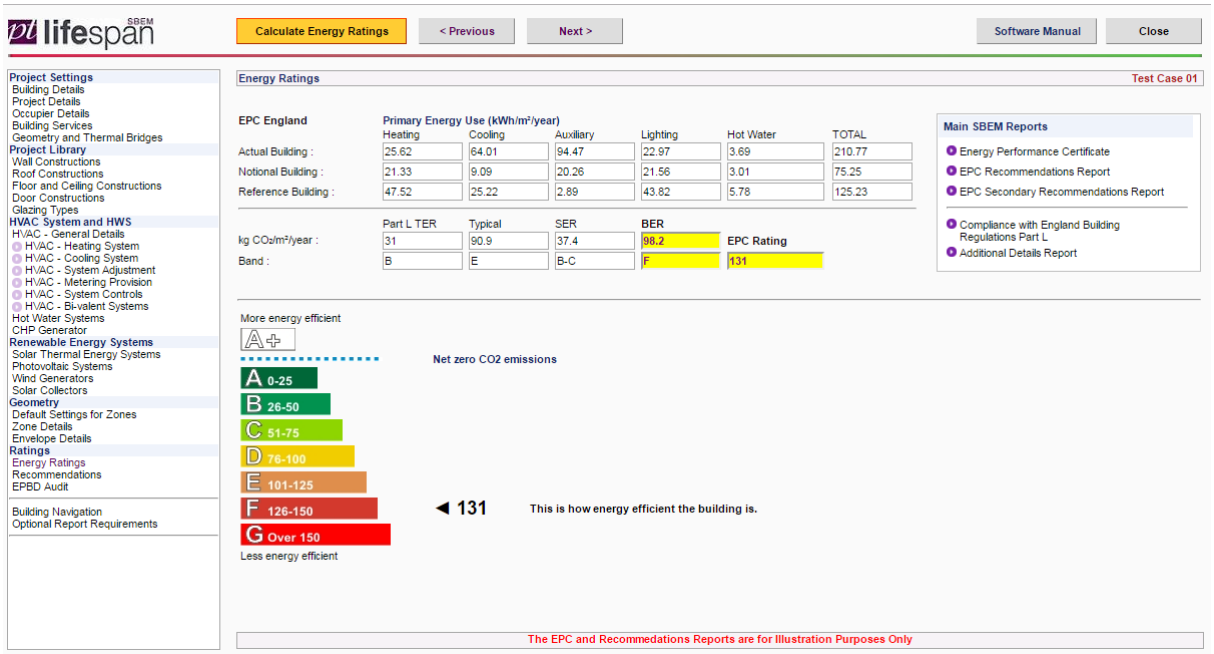
Envelope details displays any envelopes created using 'Quick envelopes' (described earlier in this manual) and provides the ability to specify fully details of each along with the facility to create them from scratch. We recommend creating envelopes using the 'Quick envelopes' facility and making any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




Envelope Name – Give the envelope a name of your choosing
Multiplier – Where there are multiple identical envelopes these may detailed using the Multiplier feature.
Orientation – Specify the orientation of the envelope
Roof Pitch – Where relevant detail the roof pitch here
Envelope Type – Specify the type of envelope
Construction – Select the construction type
Loft access – tick whether loft access is available
Connects to – Detail the connecting condition
Zone height/ Wall length/ Area – Specify the measured geometry here
Solar Collector – Specify solar collector details for this envelope
Additional Thermal Bridges – Specify details of thermal bridges for this envelope here
Envelope Details
Zone Name :
Envelope Details
Envelope Name :
Multiplier :
Orientation :
Horizontal
Envelope Type :
Floor or Ceiling
Roof Pitch ° :
Loft Access :
Construction :
Ground
Connects to :
Underground
Use Default :
Zone Height (m) :
Wall Length (m) :
Area (m²) :
24
Solar Collector
Wall Fitted with Solar Collector :
Additional Thermal Bridges :


Glazing type – Select the glazing type
Multiplier – Where there are multiple identical envelopes these may detailed using the Multiplier feature.
Surface area ratio - Specify the surface area ratio (developed area to projected area – for domed or conical windows this will be greater than 1)
Glazed area – Specify the area of the glazing unit
Area ratio covered – For a rooflight is defined as the area of an array of roof lights to the area of glazing
Display window – Tick this box if the window is used for display purposes as defined in ADL2
Frame factor – Ratio of frame to glazing area
Aspect ratio – Ratio of height to width of window
Transmission factor – Fraction of light transmitted through window after accounting for shading from overhangs and fins
Shading position/ colour/ translucency – Specify any shading details
Glazing Details
Glazing Name :
Multiplier :
Glazing Type :
Default glazing
Glazed Area (m²) :
Surface Area Ratio
Area Ratio Covered :
Display Window :
Frame Factor :
Aspect Ratio :
Shading Position :
None (no shading)
Shading Colour :
Shading Translucency :
Transmission Factor :
Overhang is Brise-Soleil
Additional Thermal Bridge

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.

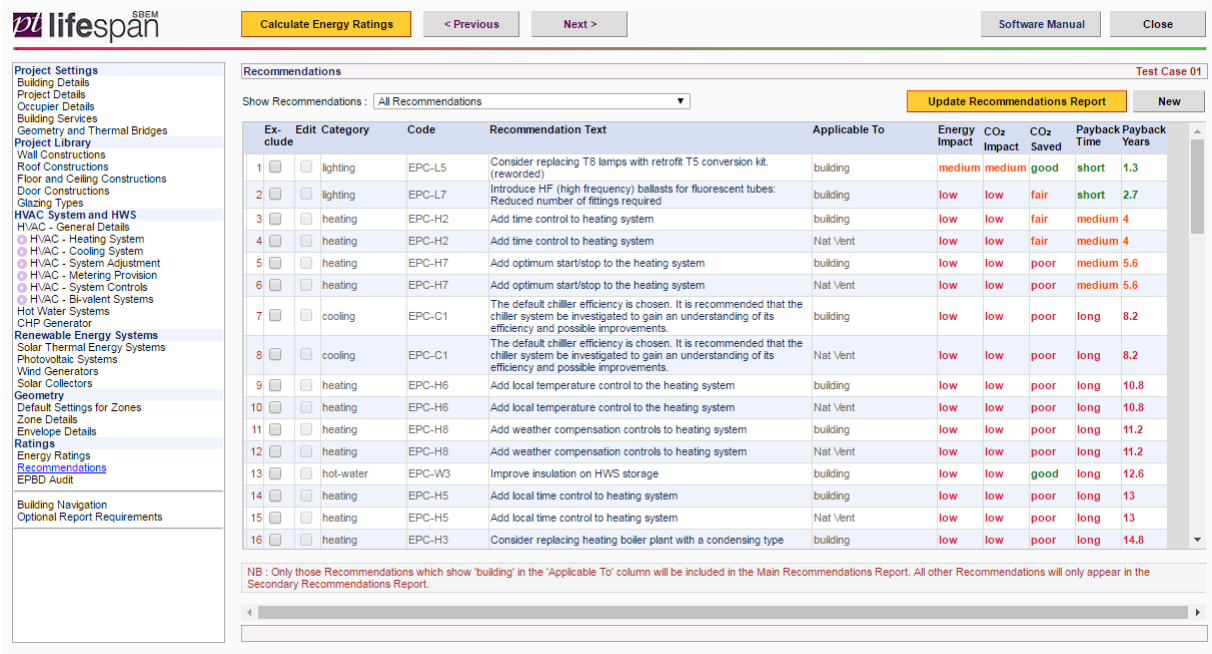


RATINGS – RECOMMENDATIONS

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.

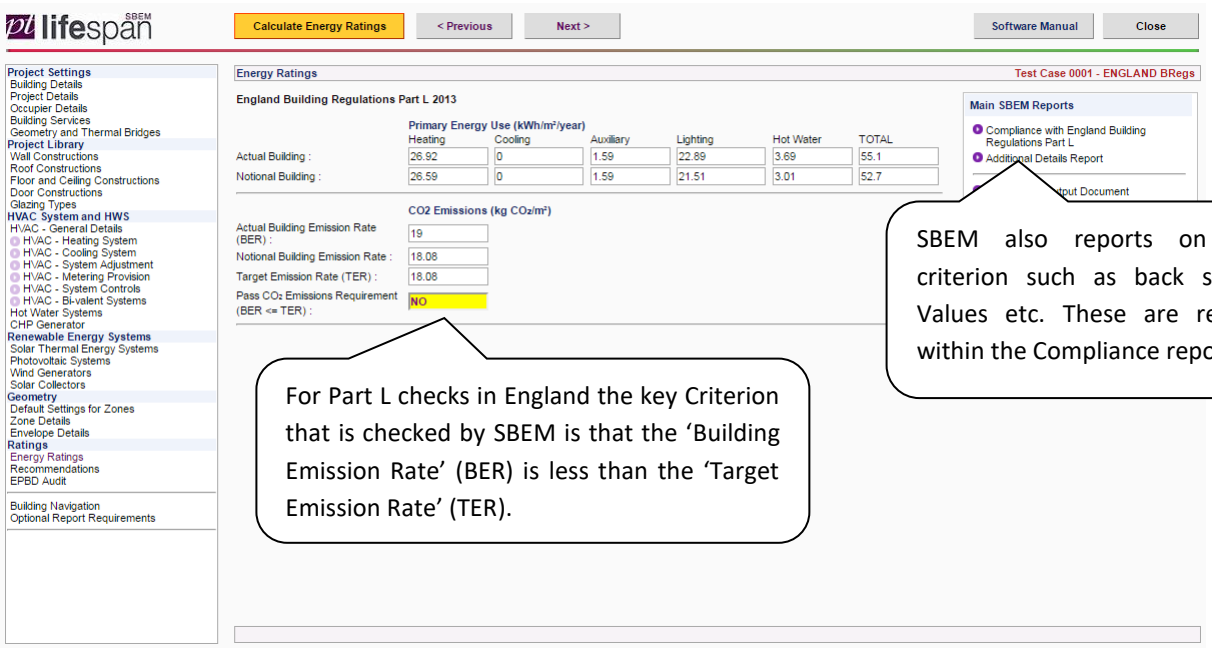
For any amendments (including 'User' recommendations) to be included in the Recommendations Report the 'Update Recommendations Report' button must be the last button pressed before closing he project.



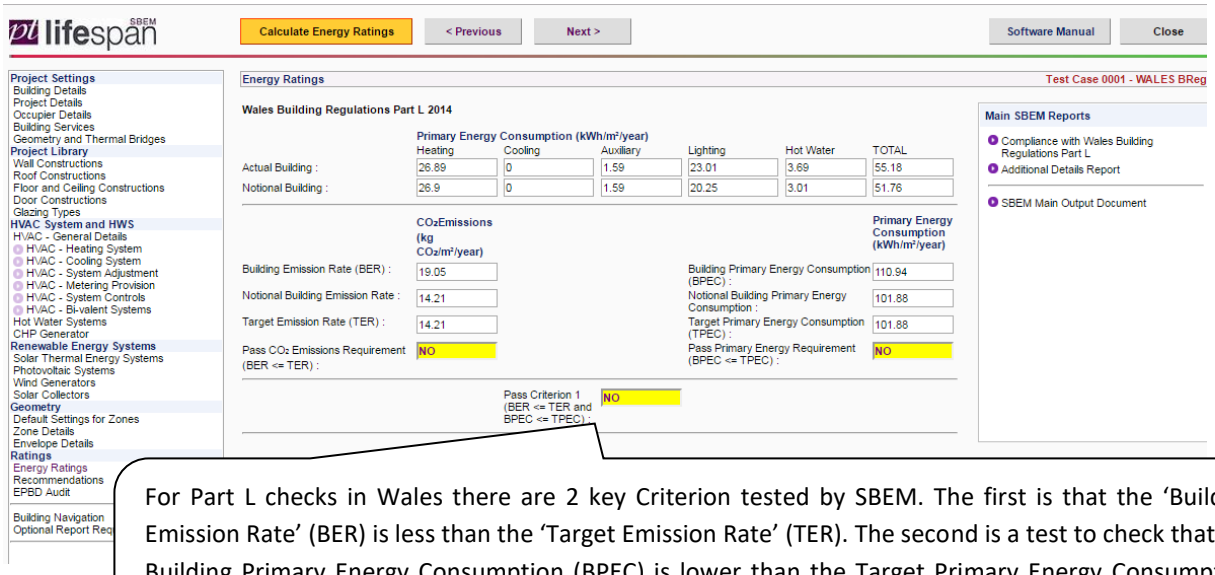
If you have selected one of the Building Regulations Compliance selections from the 'Purpose of analysis' drop down on the 'Building Details' page then the 'Energy Ratings' screen will not display the Asset Rating (EPC rating) of the property rather, it will display details relating to the compliance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

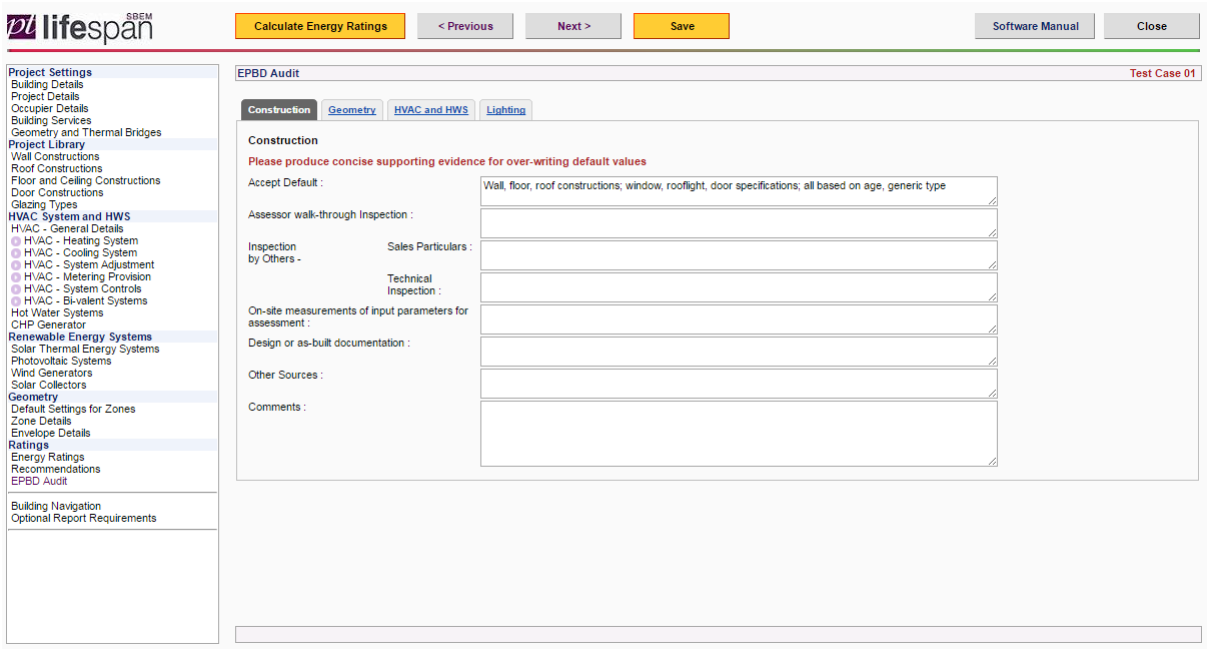


PART L WALES



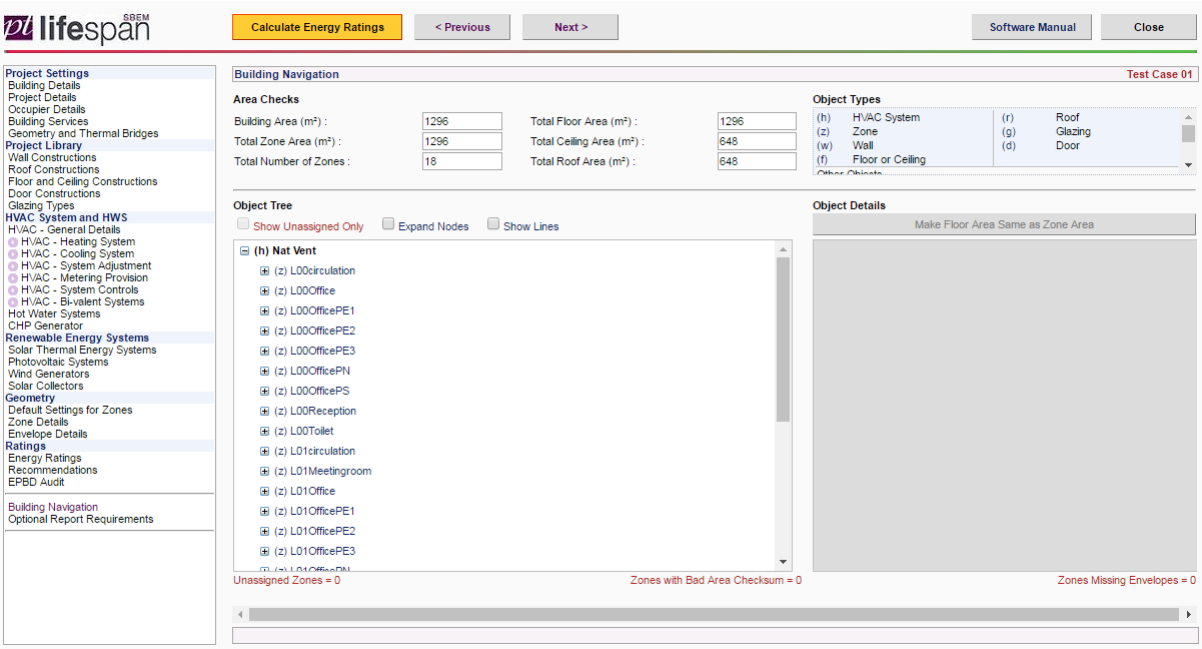
Ratings – EPBD Audit

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 reference against EPC lodgements. Although the detail is not mandatory it is of great benefit to any auditor.



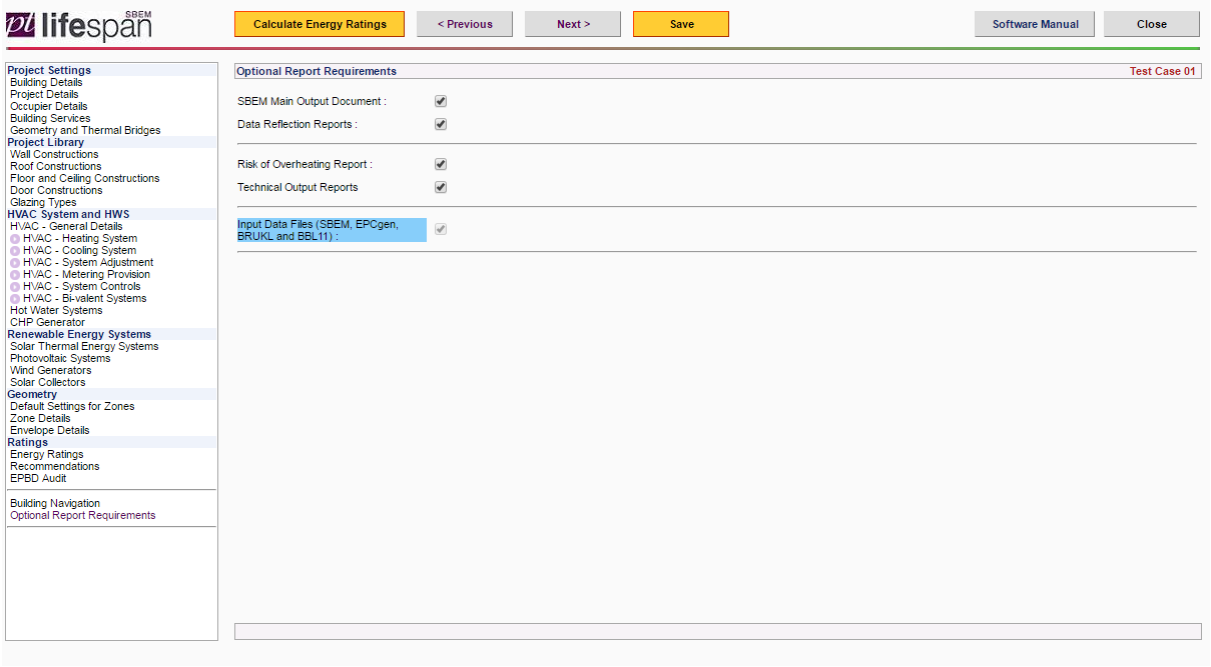
BUILDING NAVIGATION

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

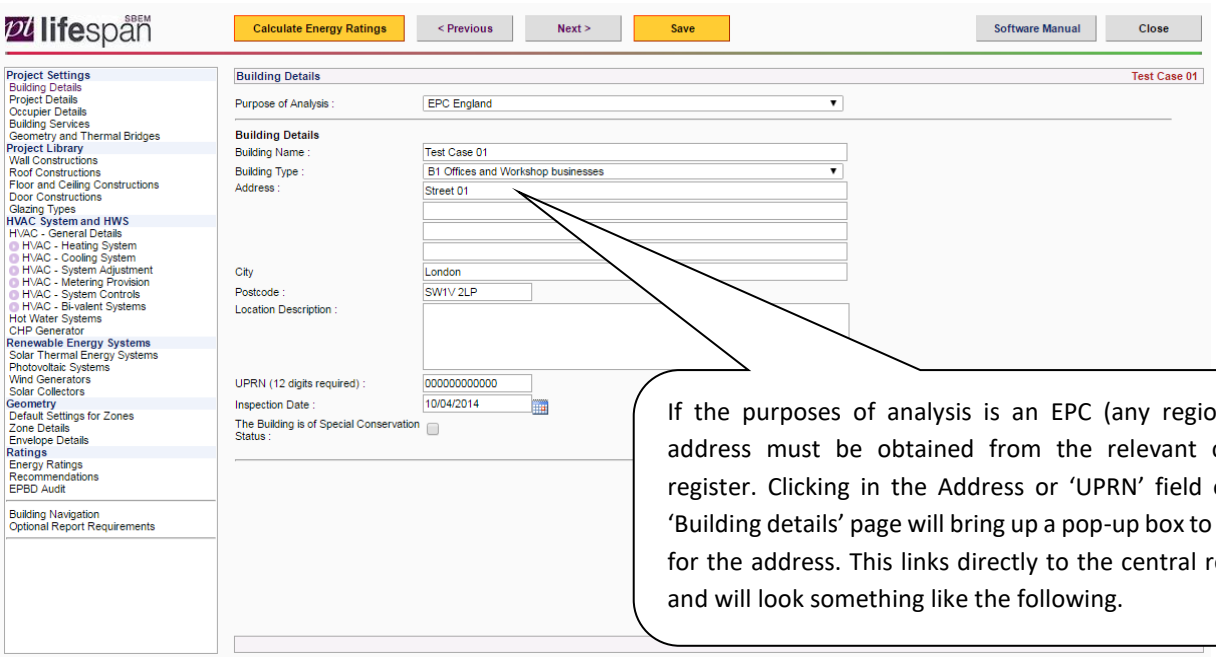


OPTIONAL REPORT REQUIREMENTS

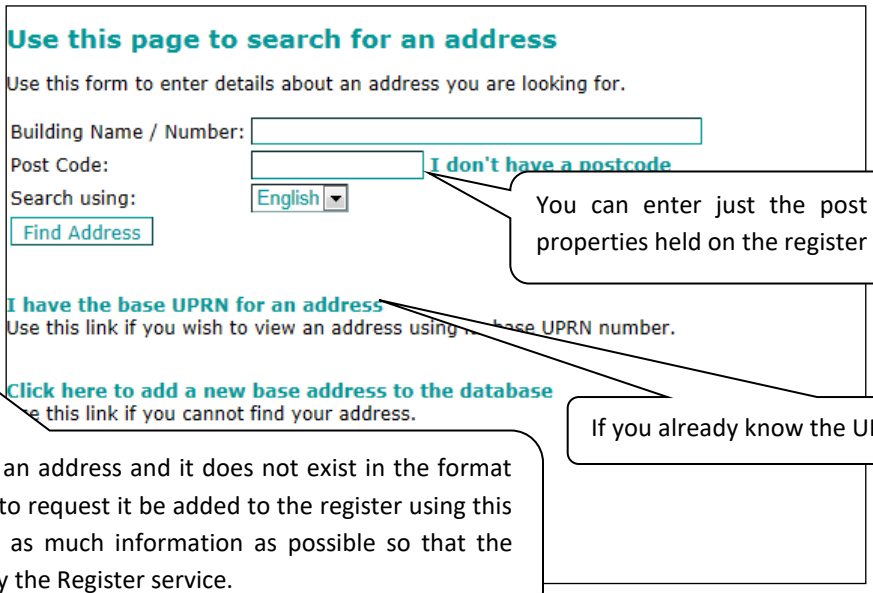
Please specify which reports you would like Lifespan SBEM to make available after the calculation. This must be specified before the calculation engine is run (i.e. before the 'Calculate Energy Ratings'/ 'Update Recommendations Report' button is pressed).



ADDRESS SEARCH



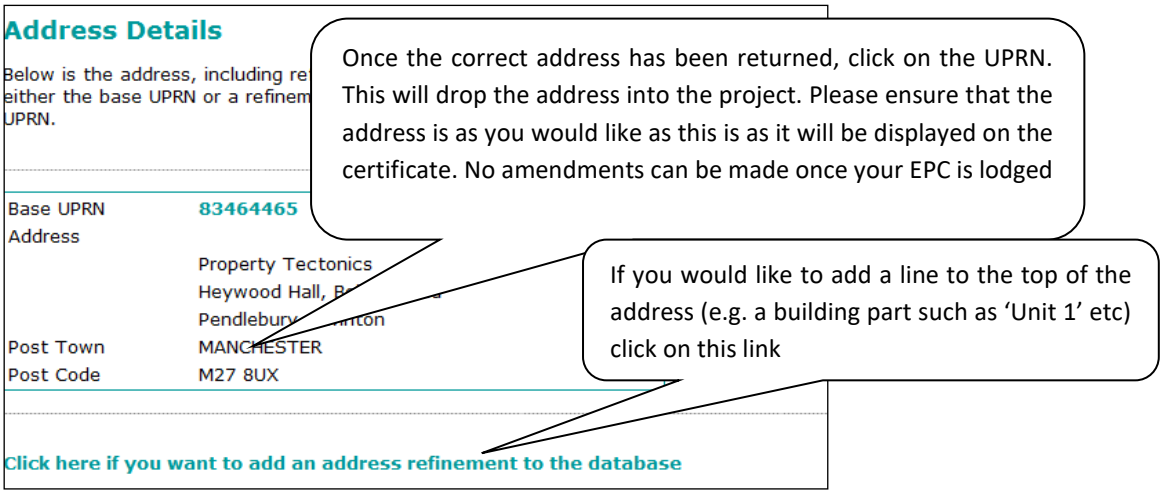
If the purposes of analysis is an EPC (any region) the address must be obtained from the relevant central register. Clicking in the Address or 'UPRN' field on the 'Building details' page will bring up a pop-up box to search for the address. This links directly to the central register and will look something like the following.



You can enter just the post code. This will return all properties held on the register with that postcode.

If you already know the UPRN, click on this link

If you have searched for an address and it does not exist in the format you desire you will need to request it be added to the register using this link. Ensure you provide as much information as possible so that the address can be verified by the Register service.



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 to 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