



Lifespan SBEM User Manual v5.6a

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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 gatherers 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

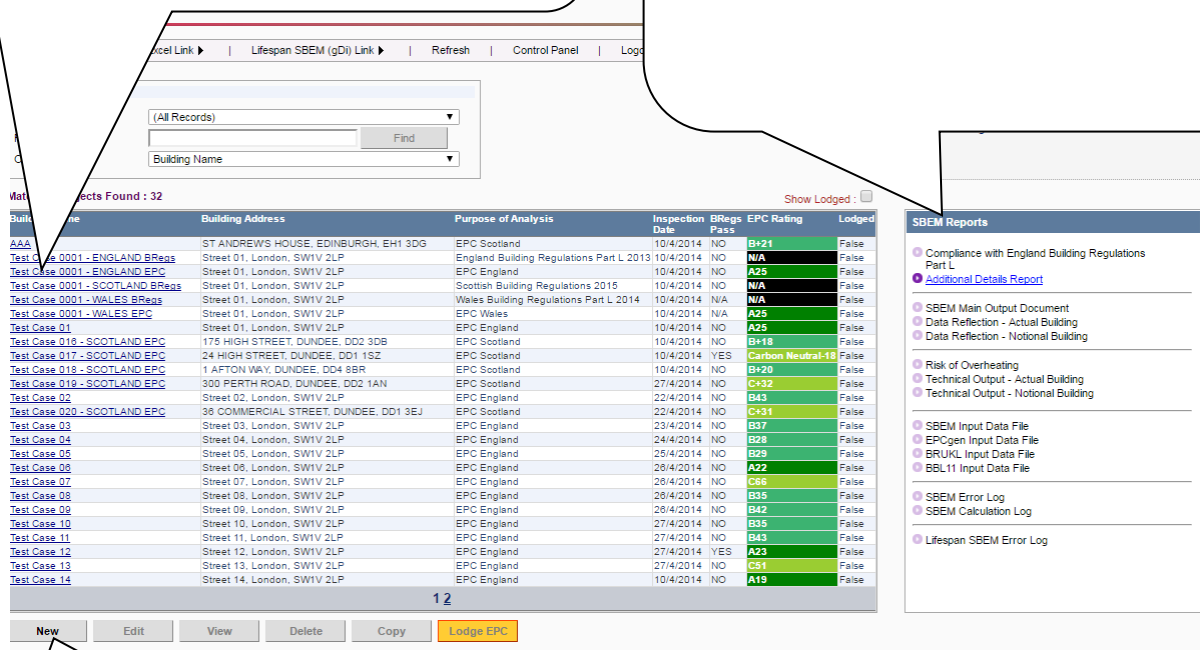
Clicking on the 'View energy surveys' button of the 'Overview' area in your Control Panel will open the Lifespan SBEM interface.

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

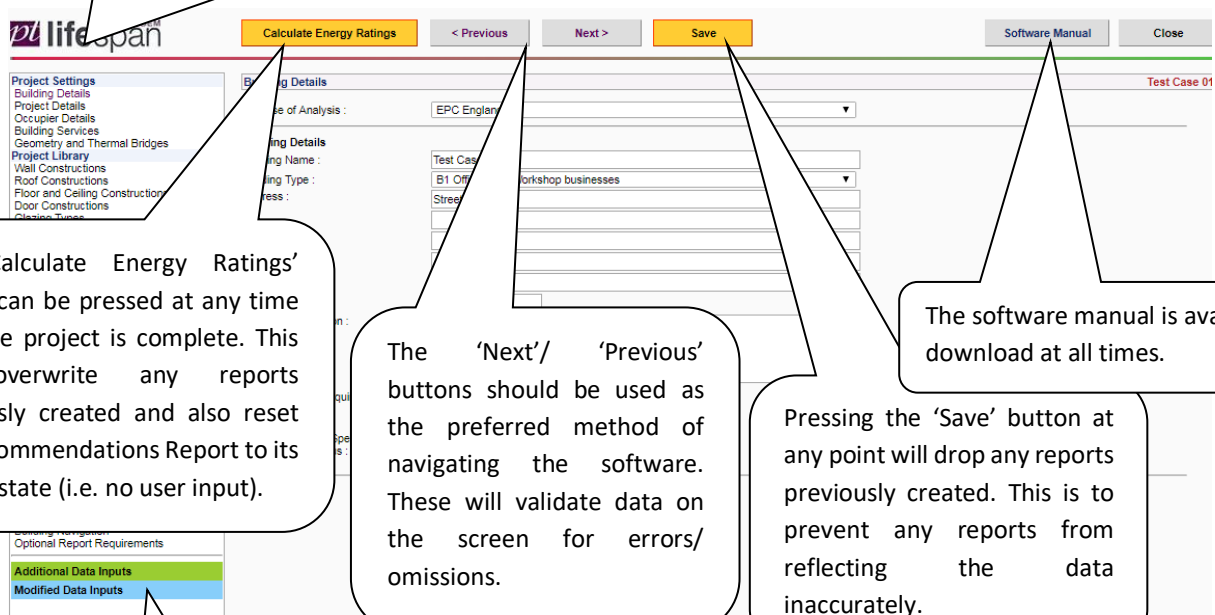


The screenshot shows the Lifespan SBEM interface. At the top, there are navigation links: 'Home Link', 'Lifespan SBEM (gDi) Link', 'Refresh', 'Control Panel', and 'Logout'. Below this is a search bar with a dropdown menu set to '(All Records)', a text input field, and a 'Find' button. A 'Building Name' dropdown is also visible. The main area displays a table with 32 projects found. The table has columns for Building Name, Building Address, Purpose of Analysis, Inspection Date, BRRegs, EPC Rating, and Lodged. The table lists various projects, including 'AAA ST ANDREWS HOUSE, EDINBURGH, EH1 3DG' and several 'Test Case' entries for different regions like England, Scotland, and Wales. At the bottom of the table are buttons for 'New', 'Edit', 'View', 'Delete', 'Copy', and 'Lodge EPC'. On the right side, there is a 'SBEM Reports' sidebar with a list of report types, including 'Compliance with England Building Regulations Part L', 'Additional Details Report', 'SBEM Main Output Document', 'Data Reflection - Actual Building', 'Data Reflection - Notional Building', 'Risk of Overheating', 'Technical Output - Actual Building', 'Technical Output - Notional Building', 'SBEM Input Data File', 'EPCgen Input Data File', 'BRUKL Input Data File', 'BBL11 Input Data File', 'SBEM Error Log', 'SBEM Calculation Log', and 'Lifespan SBEM Error Log'.

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).

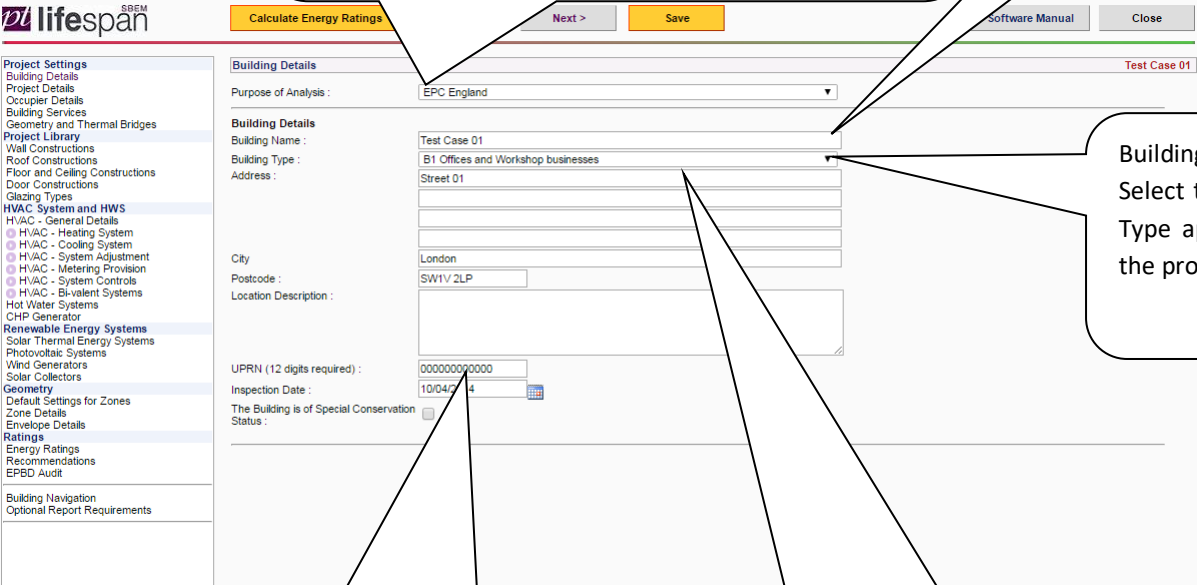
The 'Next'/'Previous' buttons should be used as the preferred method of navigating the software. These will validate data on the screen for errors/omissions.

The software manual is available to download at all times.

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 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.

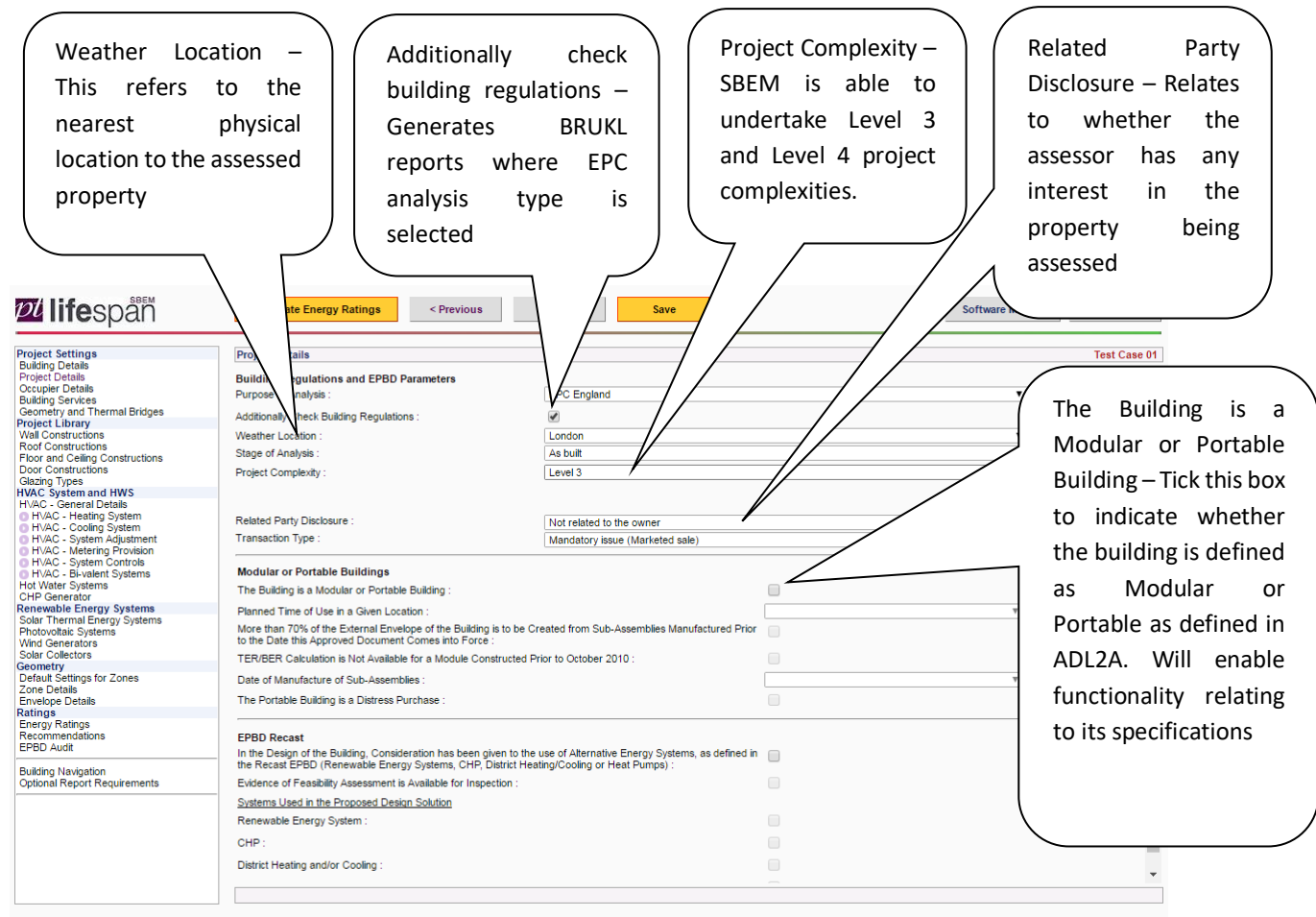
Building Name - Provide a building name for your reference

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.

PROJECT SETTINGS – PROJECT DETAILS



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.

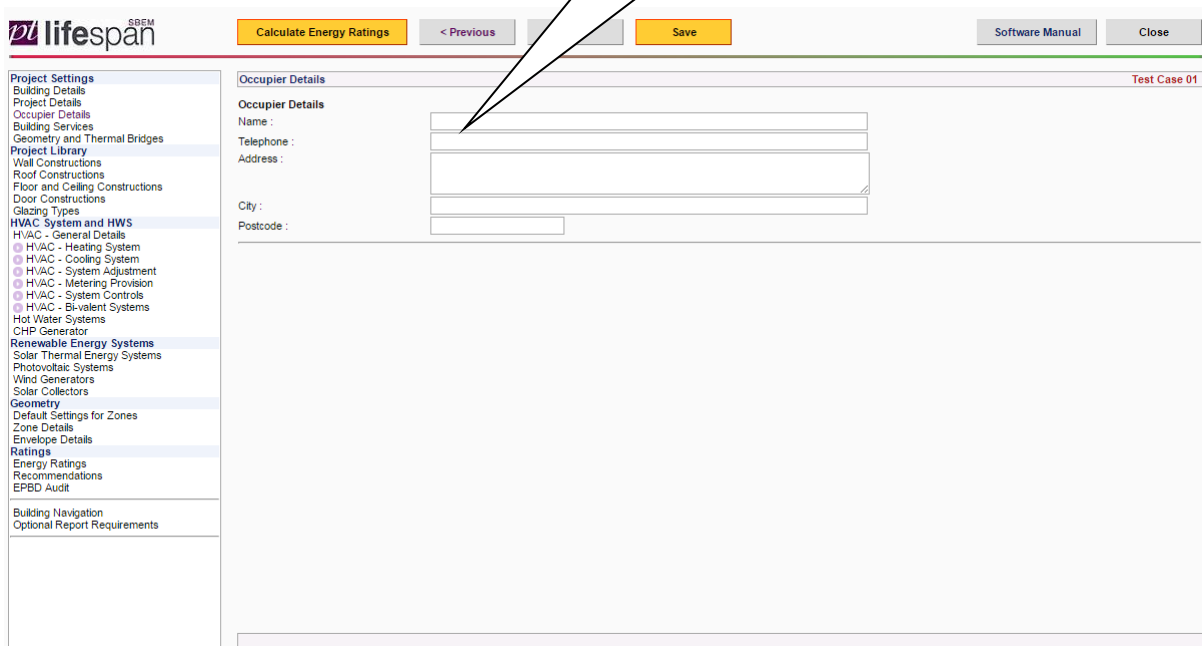
Related Party Disclosure –
Relates to whether the assessor has any interest in the property being assessed

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

The screenshot shows the 'Project Details' section of the software. The 'Weather Location' is set to 'London'. 'Additional check Building Regulations' is checked. 'Project Complexity' is set to 'Level 3'. 'Related Party Disclosure' is set to 'Not related to the owner'. The 'Modular or Portable Buildings' section has several options, with 'The Building is a Modular or Portable Building' being the one highlighted by the callout box.

PROJECT SETTINGS – OCCUPIER DETAILS

Occupier Details - Details of the occupier at the time of the assessment

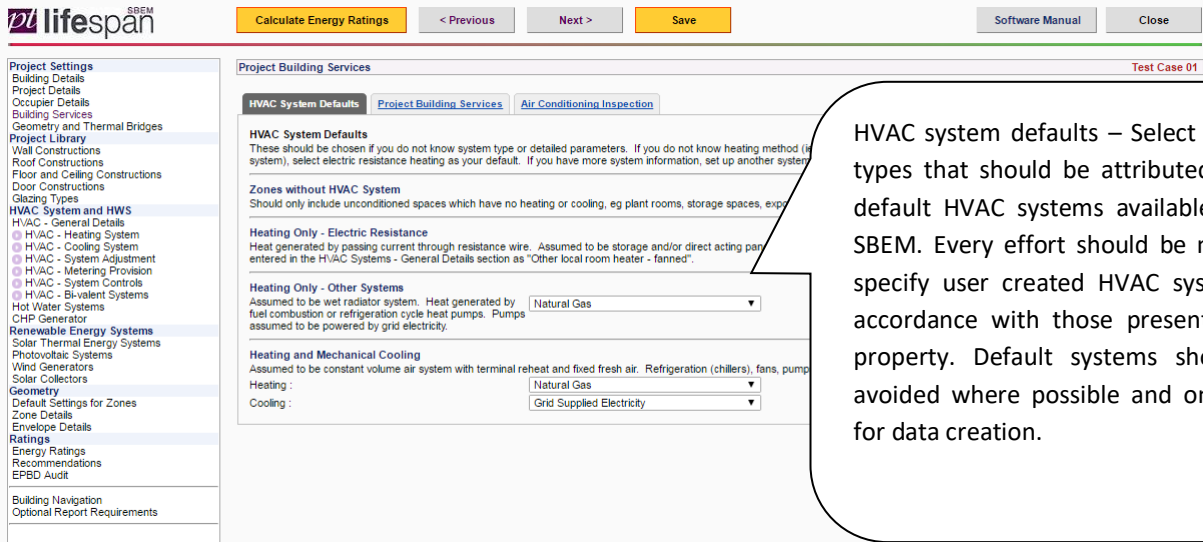


The screenshot shows the 'Occupier Details' section of the Lifespan SBEM software. The interface includes a top navigation bar with buttons for 'Calculate Energy Ratings', '< Previous', 'Save', 'Software Manual', and 'Close'. A left-hand navigation tree lists various project settings categories, with 'Occupier Details' currently selected. The main content area contains the following form fields:

- Occupier Details** (Section Header)
- Name :** [Text Input Field]
- Telephone :** [Text Input Field]
- Address :** [Text Area]
- City :** [Text Input Field]
- Postcode :** [Text Input Field]

A callout box points to the 'Name' field, indicating that this section contains details of the occupier at the time of the assessment. The top right corner of the main area displays 'Test Case 01'.

PROJECT SETTINGS – PROJECT BUILDING SERVICES



HVAC System Defaults
 These should be chosen if you do not know system type or detailed parameters. If you do not know heating method (if system), select electric resistance heating as your default. If you have more system information, set up another system.

Zones without HVAC System
 Should only include unconditioned spaces which have no heating or cooling, eg plant rooms, storage spaces, etc.

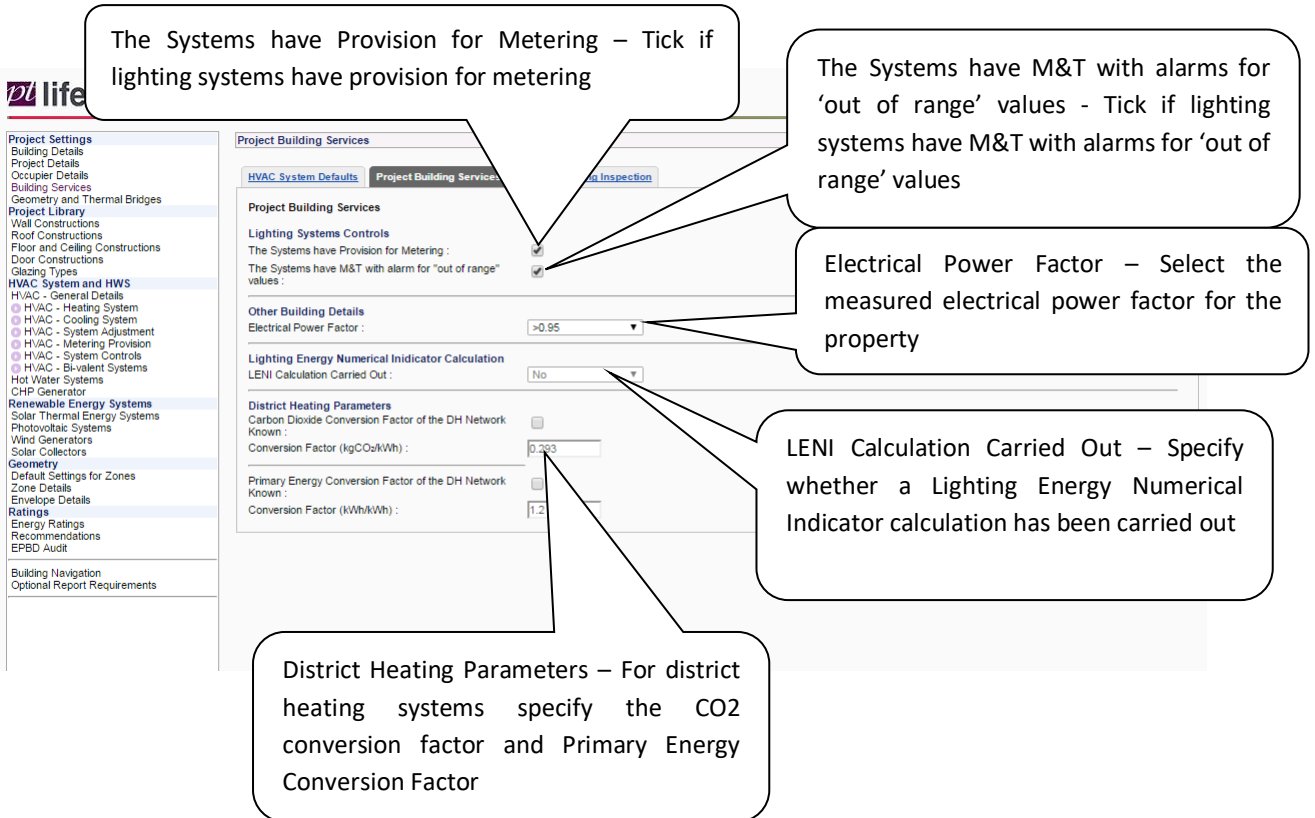
Heating Only - Electric Resistance
 Heat generated by passing current through resistance wire. Assumed to be storage and/or direct acting panel heaters. Heat generated by fuel combustion or refrigeration cycle heat pumps. Pumps assumed to be powered by grid electricity.

Heating Only - Other Systems
 Assumed to be wet radiator system. Heat generated by fuel combustion or refrigeration cycle heat pumps. Pumps assumed to be powered by grid electricity.

Heating and Mechanical Cooling
 Assumed to be constant volume air system with terminal reheat and fixed fresh air. Refrigeration (chillers), fans, pump.

Heating : Natural Gas
 Cooling : Grid Supplied Electricity

Callout text: 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.



Lighting Systems Controls
 The Systems have Provision for Metering :
 The Systems have M&T with alarm for "out of range" values :

Other Building Details
 Electrical Power Factor : >0.95

Lighting Energy Numerical Indicator Calculation
 LENI Calculation Carried Out : No

District Heating Parameters
 Carbon Dioxide Conversion Factor of the DH Network Known :
 Conversion Factor (kgCO₂/kWh) : 0.263
 Primary Energy Conversion Factor of the DH Network Known :
 Conversion Factor (kWh/kWh) : 1.2

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

Callout text: 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

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

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

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

lifespans SBEM

Calculate Energy Ratings < Previous Next > Save Software Manual Close

Project Building Services Test Case 01

HVAC System Defaults Project Building Services Air Conditioning Inspection

Air Conditioning Inspection

The Building has an Air Conditioning System :

Actual Total Effective Rated Output Known :

Actual Total Effective Rated Output (kW) :

Estimated Total Effective Rated Output (kW) :

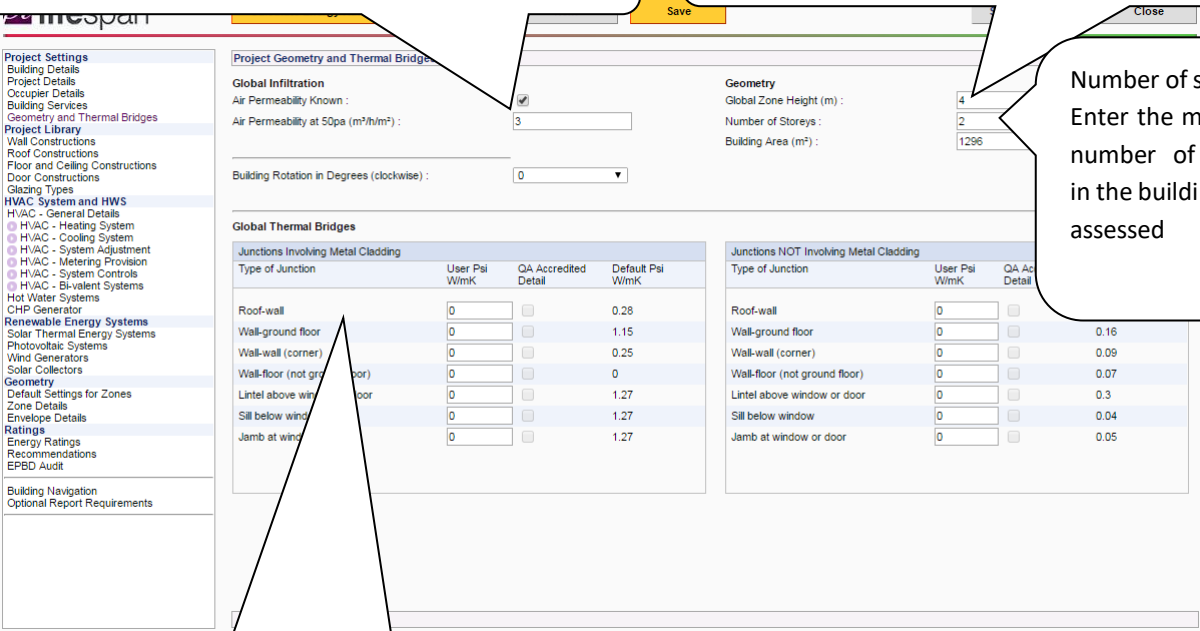
An Air Conditioning Inspection has been Commissioned for Compliance with Energy Performance of Buildings Regulations :

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

- 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

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.

Global Infiltration

Air Permeability Known:

Air Permeability at 50pa (m³/h/m²):

Building Rotation in Degrees (clockwise):

Geometry

Global Zone Height (m):

Number of Storeys:

Building Area (m²):

Global Thermal Bridges

Junctions Involving Metal Cladding			
Type of Junction	User Psi W/mK	QA Accredited Detail	Default Psi W/mK
Roof-wall	<input type="text" value="0"/>	<input type="checkbox"/>	0.28
Wall-ground floor	<input type="text" value="0"/>	<input type="checkbox"/>	1.15
Wall-wall (corner)	<input type="text" value="0"/>	<input type="checkbox"/>	0.25
Wall-floor (not ground floor)	<input type="text" value="0"/>	<input type="checkbox"/>	0
Lintel above window or door	<input type="text" value="0"/>	<input type="checkbox"/>	1.27
Sill below window or door	<input type="text" value="0"/>	<input type="checkbox"/>	1.27
Jamb at window or door	<input type="text" value="0"/>	<input type="checkbox"/>	1.27

Junctions NOT Involving Metal Cladding			
Type of Junction	User Psi W/mK	QA Accredited Detail	Default Psi W/mK
Roof-wall	<input type="text" value="0"/>	<input type="checkbox"/>	
Wall-ground floor	<input type="text" value="0"/>	<input type="checkbox"/>	0.16
Wall-wall (corner)	<input type="text" value="0"/>	<input type="checkbox"/>	0.09
Wall-floor (not ground floor)	<input type="text" value="0"/>	<input type="checkbox"/>	0.07
Lintel above window or door	<input type="text" value="0"/>	<input type="checkbox"/>	0.3
Sill below window or door	<input type="text" value="0"/>	<input type="checkbox"/>	0.04
Jamb at window or door	<input type="text" value="0"/>	<input type="checkbox"/>	0.05

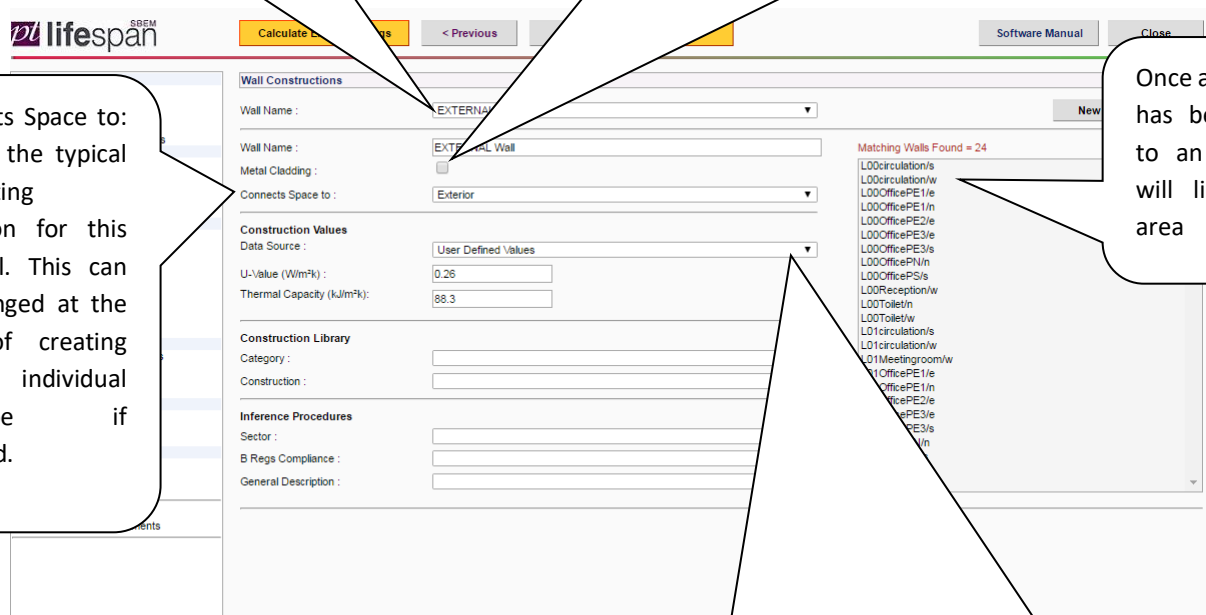
PROJECT LIBRARY – WALL CONSTRUCTIONS

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.

PROJECT LIBRARY – ROOF CONSTRUCTIONS



Calculate Energy Ratings
< Previous
Next >
Save

Software Manual
Close

Test Case 01

- 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
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- Hot Water Systems
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- Envelope Details
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- Energy Ratings
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Roof Name :
External Roof
New
Delete

Roof Name :
External Roof

Metal Cladding :

Connects Space to :
Exterior

Construction Values
Data Source :
User Defined Values

U-Value (W/m²K) :
0.18

Thermal Capacity (kJ/m²K) :
21.8

Construction Library
Category :

Construction :

Inference Procedures
Sector :

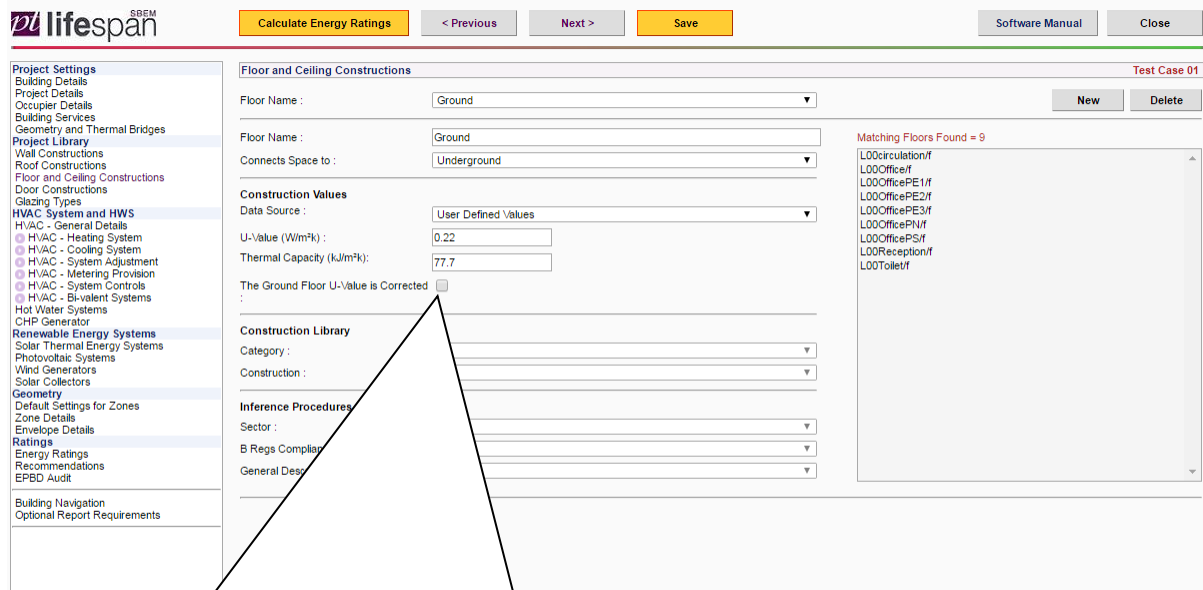
B Regs Compliance :

General Description :

Matching Roofs Found = 9

- L01Circulation/c
- L01Meetingroom/c
- L01Office/c
- L01OfficePE1/c
- L01OfficePE2/c
- L01OfficePE3/c
- L01OfficePN/c
- L01OfficePS/c
- L01Toilet/c


PROJECT LIBRARY – FLOOR AND CEILING CONSTRUCTIONS



The screenshot shows the 'Floor and Ceiling Constructions' window in the SBEM software. The 'Floor Name' is set to 'Ground'. The 'Connects Space to' is set to 'Underground'. Under 'Construction Values', the 'Data Source' is 'User Defined Values', 'U-Value (W/m²K)' is 0.22, and 'Thermal Capacity (kJ/m²K)' is 77.7. There is a checkbox for 'The Ground Floor U-Value is Corrected' which is currently unchecked. A callout box points to this checkbox with explanatory text. The 'Construction Library' and 'Inference Procedures' sections are also visible. On the right, a list of 'Matching Floors Found = 9' includes items like L00Circulation/f, L00Office/f, etc.

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.

PROJECT LIBRARY – DOOR CONSTRUCTIONS



Calculate Energy Ratings
< Previous
Next >
Save

Software Manual
Close

- Project Settings
- Building Details
- Project Details
- Occupier Details
- Building Services
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Door Constructions
Test Case 01

Door Name :

Door Name :

Construction Values

Data Source :

U-Value (W/m²K) :

Thermal Capacity (kJ/m²K) :

Construction Library

Category :

Construction :

Inference Procedures

Sector :

B Regs Compliance :

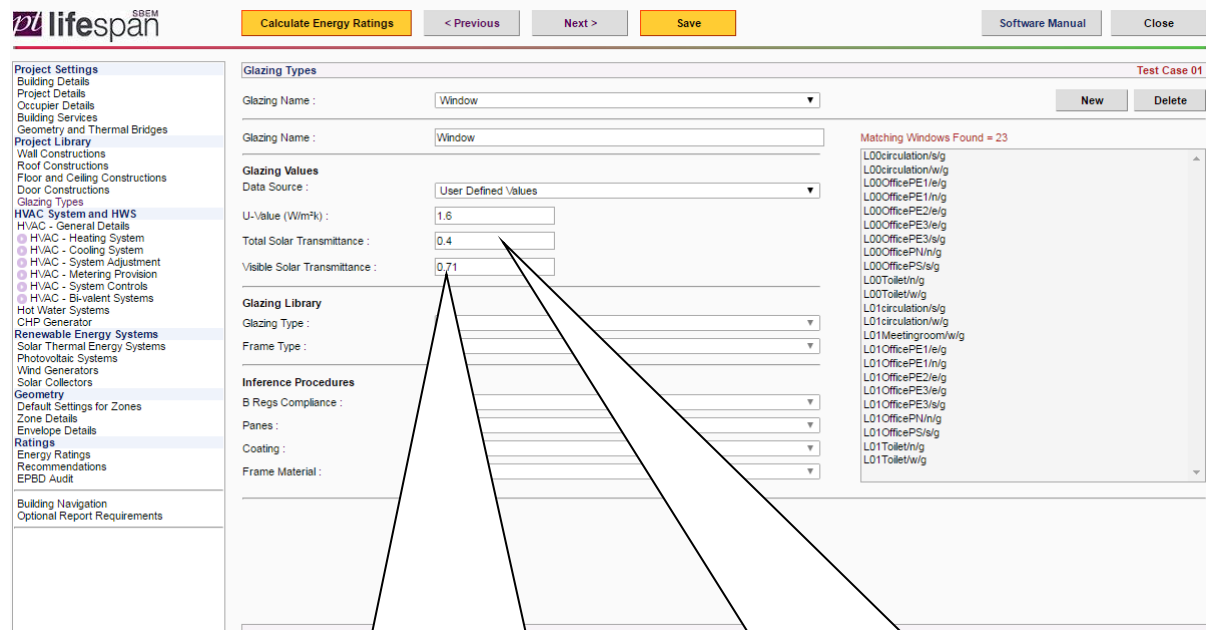
General Description :

New
Delete

Matching Doors Found = 1

L00Reception/w/d

PROJECT LIBRARY – GLAZING TYPES



The screenshot shows the 'Glazing Types' configuration window in the Lifespan SBEM software. The window is titled 'Test Case 01' and has 'New' and 'Delete' buttons. The 'Glazing Name' is set to 'Window'. The 'Glazing Values' section is set to 'User Defined Values' and includes the following fields:

- U-Value (W/m²K): 1.6
- Total Solar Transmittance: 0.4
- Visible Solar Transmittance: 0.71

The 'Glazing Library' section includes 'Glazing Type' and 'Frame Type' dropdown menus. The 'Inference Procedures' section includes 'B Regs Compliance', 'Panels', 'Coating', and 'Frame Material' dropdown menus. A list of 'Matching Windows Found = 23' is shown on the right, including items like 'L00circulation/ig', 'L00circulation/wig', 'L00OfficePE1/e/ig', 'L00OfficePE1/n/ig', 'L00OfficePE2/e/ig', 'L00OfficePE3/e/ig', 'L00OfficePE3/s/ig', 'L00OfficePN/ig', 'L00OfficePS/ig', 'L00Toilet/ig', 'L00Toilet/wig', 'L01circulation/ig', 'L01circulation/wig', 'L01Meetingroom/wig', 'L01OfficePE1/e/ig', 'L01OfficePE1/n/ig', 'L01OfficePE2/e/ig', 'L01OfficePE3/e/ig', 'L01OfficePE3/s/ig', 'L01OfficePN/ig', 'L01OfficePS/ig', 'L01Toilet/ig', and 'L01Toilet/wig'.

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

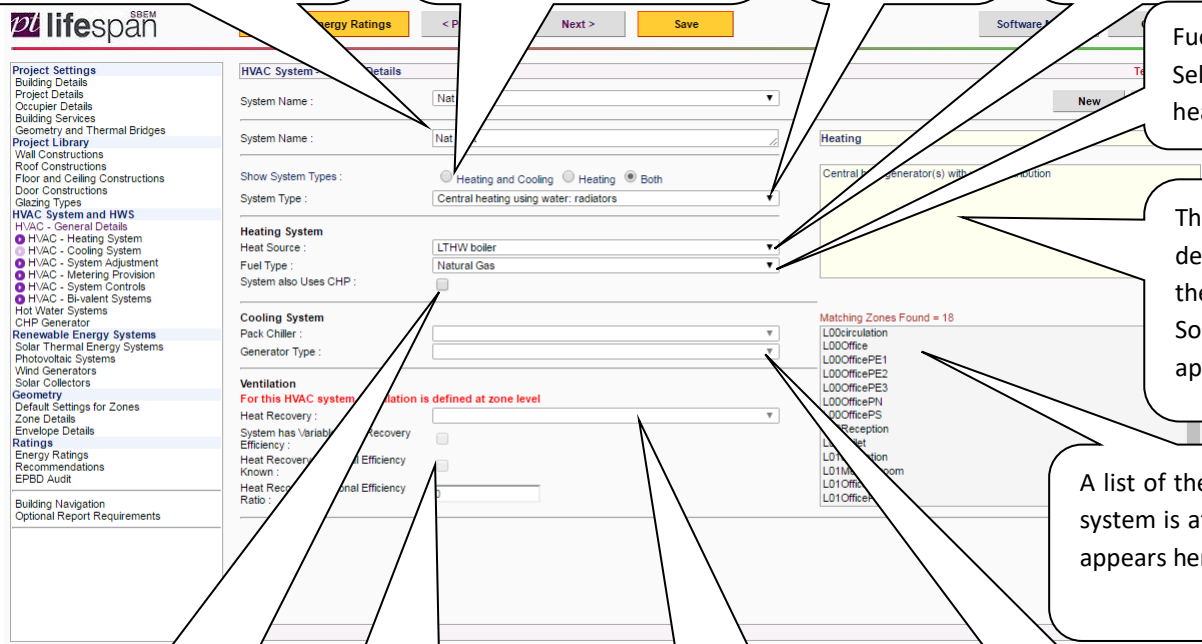
A list of the zones this system is attributed to appears here

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



The screenshot displays the 'HVAC System - Details' form in the Lifespan SBEM software. The form is divided into several sections: 'System Name', 'Show System Types', 'Heating System', 'Cooling System', and 'Ventilation'. The 'System Name' field contains 'Nat'. The 'Show System Types' section has radio buttons for 'Heating and Cooling', 'Heating', and 'Both', with 'Both' selected. The 'Heating System' section includes a 'Heat Source' dropdown set to 'LTHW boiler', a 'Fuel Type' dropdown set to 'Natural Gas', and a checkbox for 'System also Uses CHP'. The 'Cooling System' section has a 'Pack Chiller' dropdown and a 'Generator Type' dropdown. The 'Ventilation' section includes a 'Heat Recovery' dropdown and checkboxes for 'System has Variable Efficiency', 'Heat Recovery Known', and 'Heat Recovery Ratio'. A right-hand pane shows a list of zones under the heading 'Matching Zones Found = 18', including 'LD0circulation', 'LD0Office', 'LD0OfficePE1', 'LD0OfficePE2', 'LD0OfficePE3', 'LD0OfficePH', 'LD0OfficePS', 'LD0Reception', 'LD0Set', 'LD111', 'LD111Room', 'LD101Office', and 'LD101Office'. Callout boxes provide instructions for each field.

HVAC SYSTEM AND HWS – HVAC – HEATING SYSTEM

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.

Effective Heat Generating Seasonal Efficiency
 Seasonal Efficiency Known :
 Seasonal Efficiency :

Generator Radiant Efficiency
 Radiant Efficiency Known :
 Radiant Efficiency :

Convactor Fans
 Convactor Fans Present :
 Fan Power to Heating Output Ratio Known :
 Fan Power to Heating Output Ratio (W/kWh) :

HVAC SYSTEM AND HWS – HVAC – COOLING SYSTEM

The screenshot shows the 'HVAC System' configuration page in the Lifespan SBEM software. The interface includes a left-hand navigation menu, a top navigation bar with 'Previous', 'Next', and 'Save' buttons, and a main configuration area. The configuration area is divided into several sections: 'Cooling System', 'Generator Seasonal Energy Efficiency Ratio (SEER)', and 'Generator Nominal Energy Efficiency Ratio (EER)'. Callouts provide detailed instructions for each field.

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

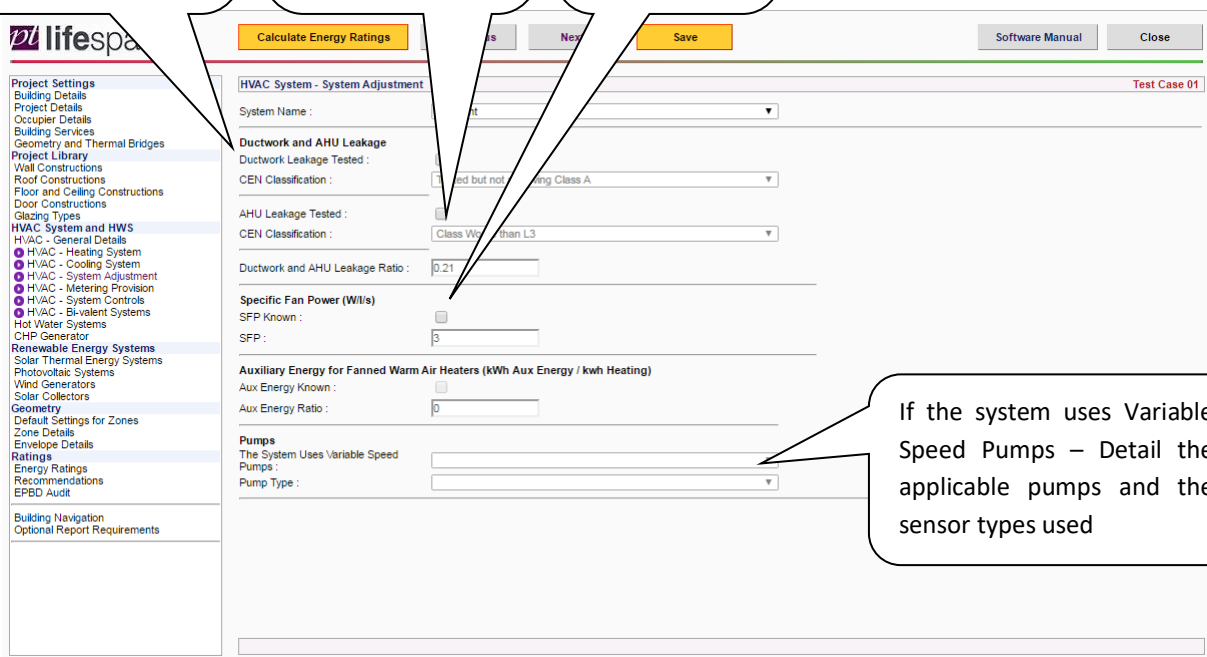
The system qualifies for ECAs – detail whether the system appears on the ECA list contribute to inferring an appropriate efficiency where the seasonal efficiency is not known.

HVAC SYSTEM AND HWS – HVAC – SYSTEM ADJUSTMENT

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



Calculate Energy Ratings [Buttons: Save, Software Manual, Close]

HVAC System - System Adjustment Test Case 01

System Name: [Text Field]

Ductwork and AHU Leakage

Ductwork Leakage Tested: [Dropdown: Tested but not meeting Class A]

CEN Classification: [Dropdown]

AHU Leakage Tested: [Dropdown: Class Worse than L3]

CEN Classification: [Dropdown]

Ductwork and AHU Leakage Ratio: [Text Field: 0.21]

Specific Fan Power (W/ls)

SFP Known: [Checkbox]

SFP: [Text Field: 3]

Auxiliary Energy for Fanned Warm Air Heaters (KWh Aux Energy / kWh Heating)

Aux Energy Known: [Checkbox]

Aux Energy Ratio: [Text Field: 0]

Pumps

The System Uses Variable Speed Pumps: [Dropdown]

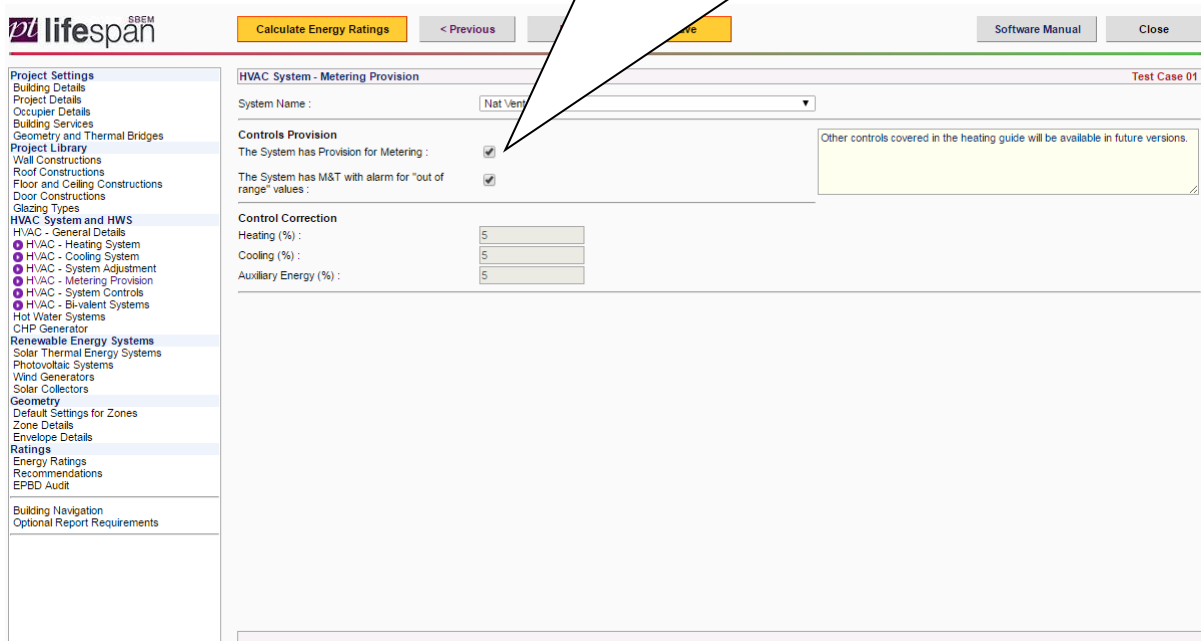
Pumps: [Dropdown]

Pump Type: [Dropdown]

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

HVAC SYSTEM AND HWS – HVAC – METERING PROVISION

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.



lifespans SBEM Calculate Energy Ratings < Previous Save Software Manual Close

HVAC System - Metering Provision Test Case 01

System Name: Nat Vent

Controls Provision

The System has Provision for Metering:

The System has M&T with alarm for "out of range" values:

Other controls covered in the heating guide will be available in future versions.

Control Correction

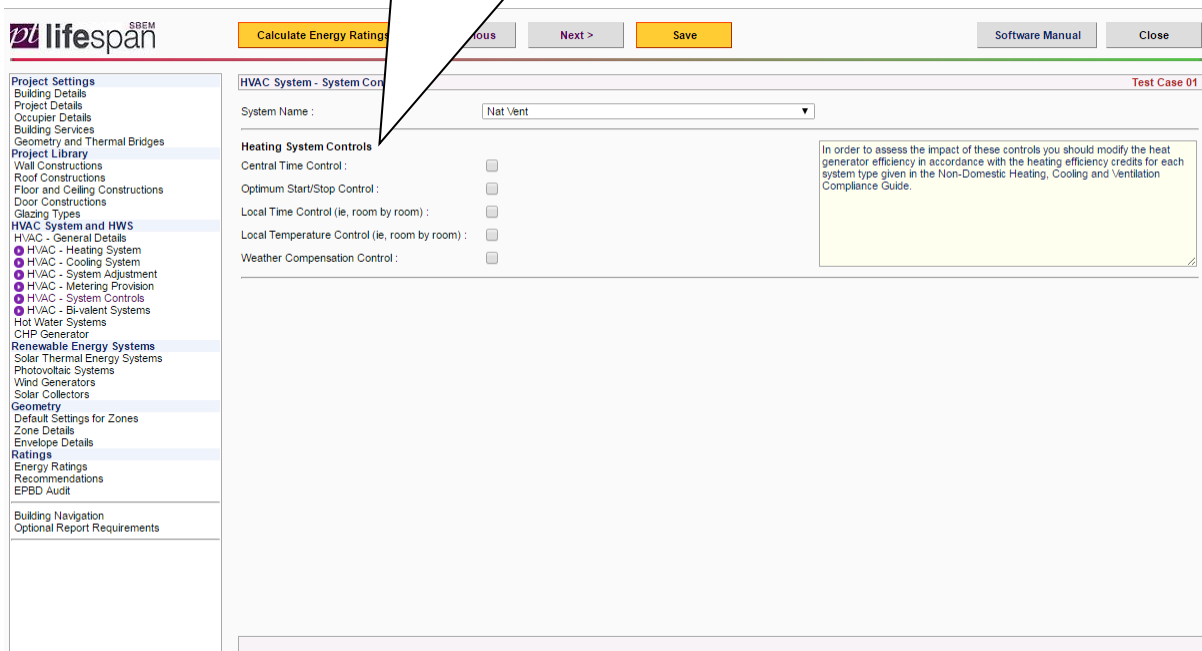
Heating (%): 5

Cooling (%): 5

Auxiliary Energy (%): 5

HVAC SYSTEM AND HWS – HVAC – SYSTEM CONTROLS

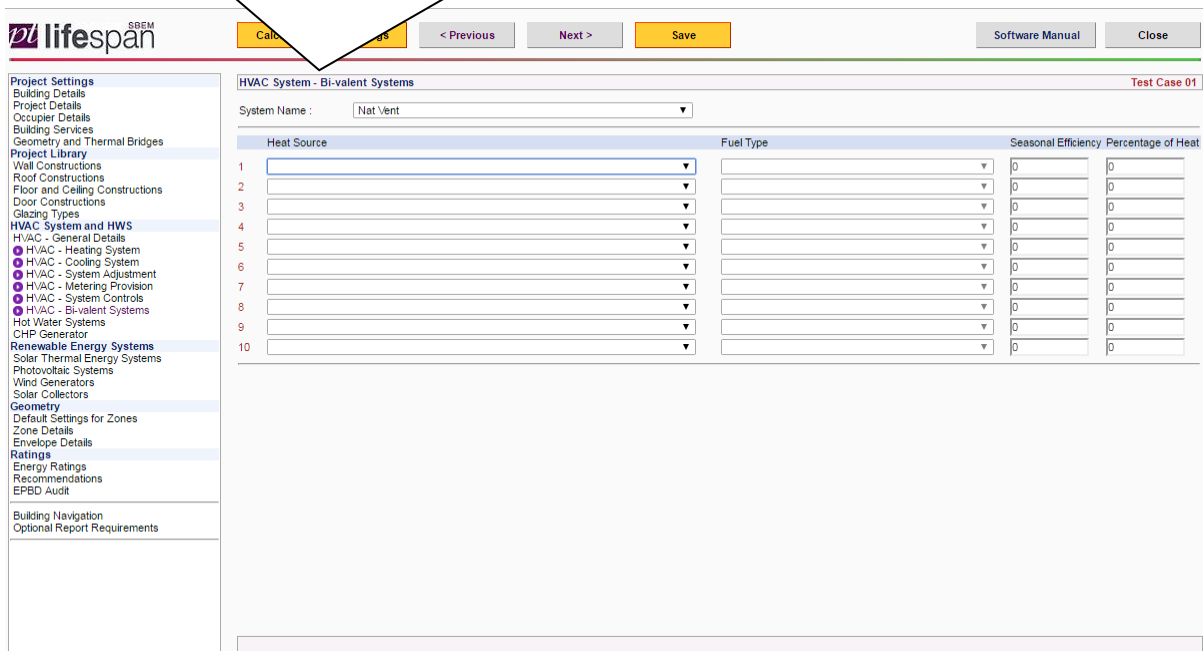
Heating System Controls – Detail whether the system has the following controls; Central Time, Optimum Start/ Stop, Local Time, Local temperature, Weather Compensation.



The screenshot shows the Lifespan SBEM software interface. The top navigation bar includes buttons for 'Calculate Energy Ratings', 'Previous', 'Next >', 'Save', 'Software Manual', and 'Close'. The left sidebar contains a tree view of project settings, with 'HVAC System and HWS' expanded to show 'HVAC - System Controls' selected. The main content area is titled 'HVAC System - System Controls' and shows a 'System Name' dropdown set to 'Nat Vent'. Below this, the 'Heating System Controls' section lists five options, each with an unchecked checkbox: 'Central Time Control', 'Optimum Start/Stop Control', 'Local Time Control (ie, room by room)', 'Local Temperature Control (ie, room by room)', and 'Weather Compensation Control'. A yellow callout box on the right contains the text: 'In order to assess the impact of these controls you should modify the heat generator efficiency in accordance with the heating efficiency credits for each system type given in the Non-Domestic Heating, Cooling and Ventilation Compliance Guide.'

HVAC SYSTEM AND HWS – HVAC – BI-VALENT SYSTEMS

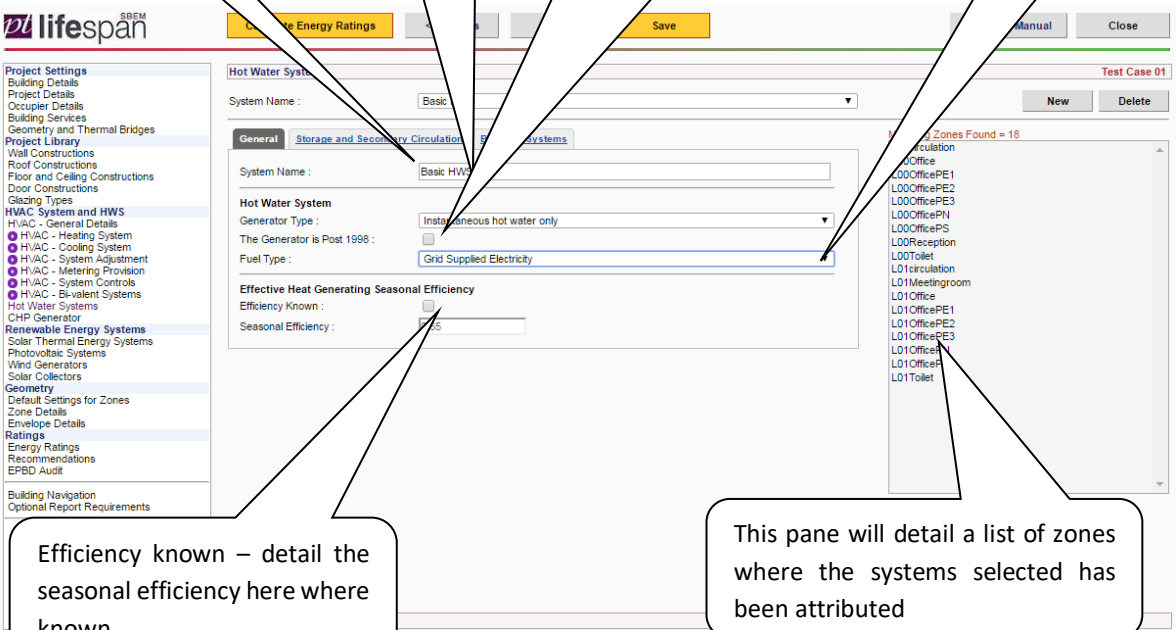
Bi-Valent Systems – For a Bi-Valent system specify the details of the non-primary systems here. For each additional system you must specify the; Heat source, Fuel Type, Heat Generating seasonal efficiency, Percentage of heat provided (0-100).



The screenshot shows the software interface for configuring HVAC systems. The left sidebar contains a navigation tree with categories like Project Settings, Project Library, and HVAC System and HWS. The main window is titled "HVAC System - Bi-valent Systems" and shows a table for configuring multiple systems. The "System Name" is set to "Nat Vent".

	Heat Source	Fuel Type	Seasonal Efficiency	Percentage of Heat
1	[Dropdown]	[Dropdown]	0	0
2	[Dropdown]	[Dropdown]	0	0
3	[Dropdown]	[Dropdown]	0	0
4	[Dropdown]	[Dropdown]	0	0
5	[Dropdown]	[Dropdown]	0	0
6	[Dropdown]	[Dropdown]	0	0
7	[Dropdown]	[Dropdown]	0	0
8	[Dropdown]	[Dropdown]	0	0
9	[Dropdown]	[Dropdown]	0	0
10	[Dropdown]	[Dropdown]	0	0

HVAC System and HWS – Hot Water Systems



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

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

Hot Water Systems Test Case 01

System Name: Basic HWS New Delete

General Storage and Secondary Circulation Bi-valent Systems

Storage System
 The System is a Storage System:
 Storage Losses Known:

Storage Volume (litres): 100
 Insulation Type: Factory insulated
 Insulation Thickness (mm): 80
 Storage Losses (MJ/month): 0

Secondary Circulation
 The System has Secondary Circulation:
 Circulation:
 Secondary Circulation Parameters Known:

Circulation Losses (W/m): 0
 Pump Power (kW): 0
 Loop Length (m): 0
 There is Time Control:

Matching Zones Found = 18
 L00Circulation
 L00Office
 L00OfficePE1
 L00OfficePE2
 L00OfficePE3
 L00OfficePN
 L00OfficePS
 L00Reception
 L00Toilet
 L01Circulation
 L01Meetingroom
 L01Office
 L01OfficePE1
 L01OfficePE2
 L01OfficePE3
 L01OfficePN
 L01OfficePS
 L01Toilet

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).

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
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 Wind Generators
 Solar Collectors
 Geometry
 Default Settings for Zones
 Zone Details
 Envelope Details
 Ratings
 Energy Ratings
 Recommendations
 EPBD Audit
 Building Navigation
 Optional Report Requirements

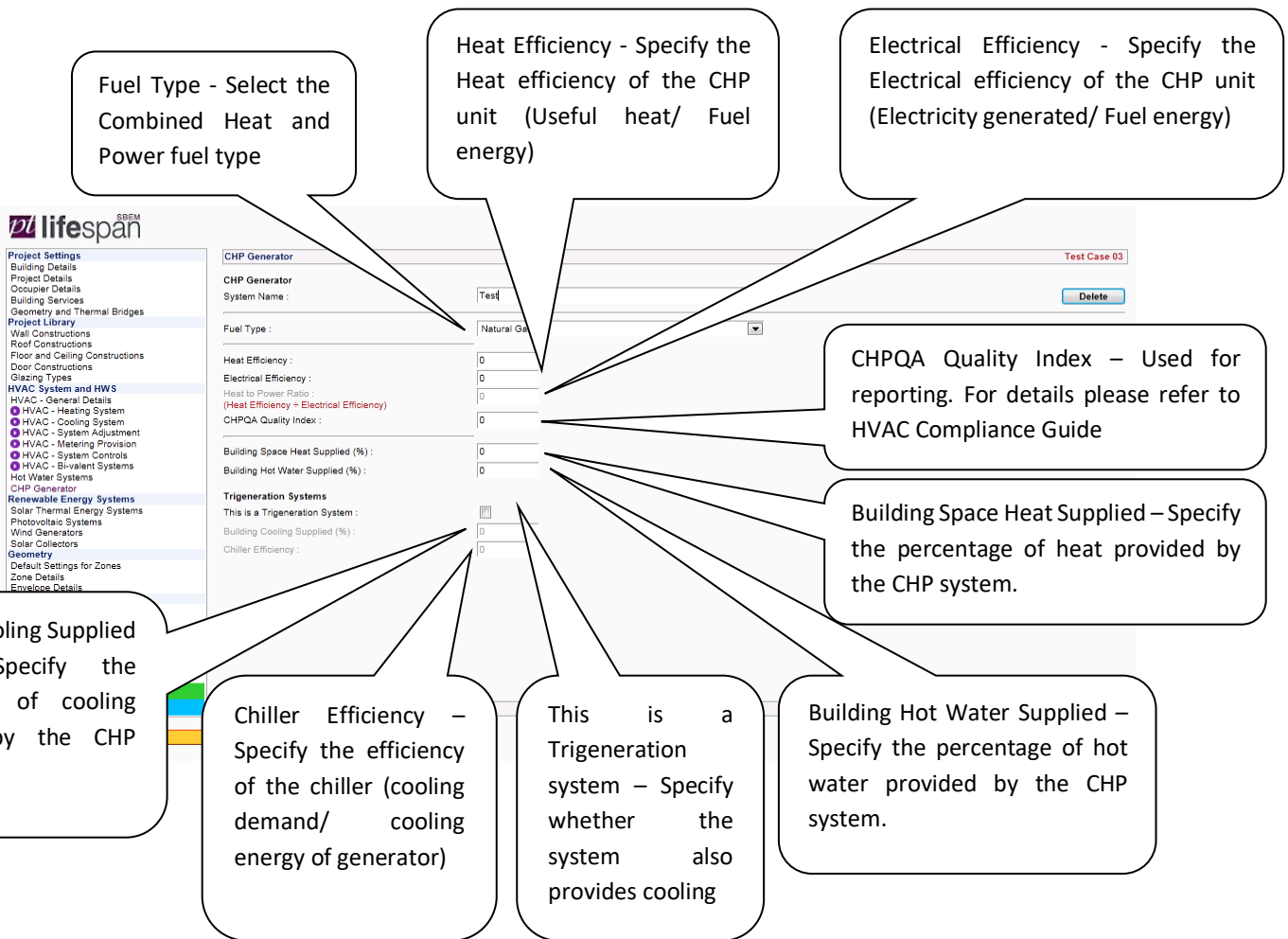
Hot Water Systems Test Case 01

System Name: Basic HWS New Delete

General Storage and Secondary Circulation Bi-valent Systems

	Heat Generator Type	Fuel Type	Seasonal Efficiency	Percentage of Heat
1			0	0
2			0	0
3			0	0
4			0	0
5			0	0
6			0	0
7			0	0
8			0	0
9			0	0
10			0	0

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

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

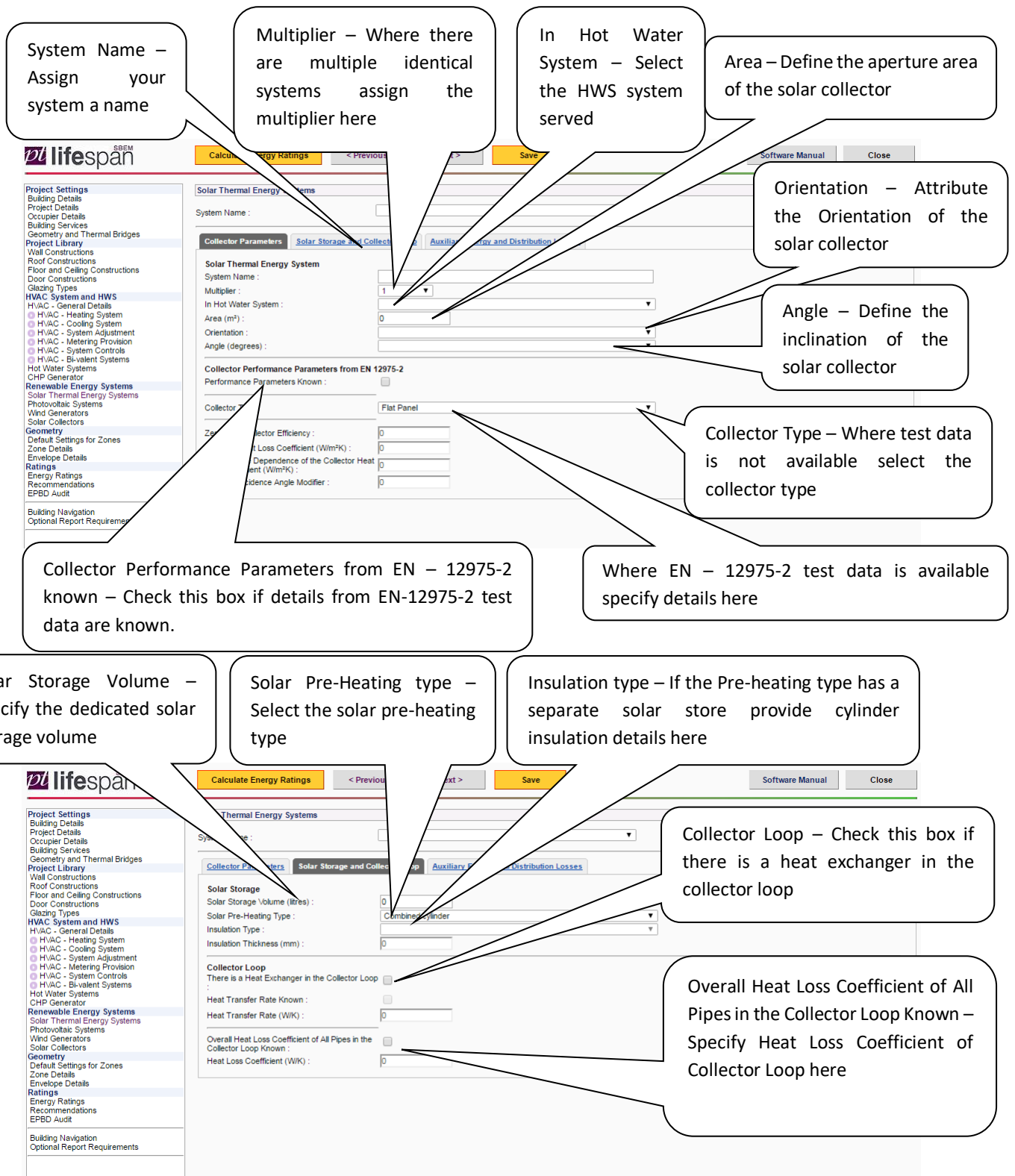
Chiller Efficiency – Specify the efficiency of the chiller (cooling demand/ cooling energy of generator)

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

The screenshot shows the 'CHP Generator' configuration window in SBEM. The left sidebar lists various system settings, with 'HVAC System and HWS' and 'CHP Generator' highlighted. The main window contains the following fields:

- System Name: Test
- Fuel Type: Natural Gas
- Heat Efficiency: 0
- Electrical Efficiency: 0
- Heat to Power Ratio: 0
- CHPQA Quality Index: 0
- Building Space Heat Supplied (%): 0
- Building Hot Water Supplied (%): 0
- Trigeration Systems: This is a Trigeration System:
- Building Cooling Supplied (%): 0
- Chiller Efficiency: 0

RENEWABLE ENERGY SYSTEMS – SOLAR THERMAL ENERGY SYSTEMS



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

- 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 - Bivalent 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 Auxiliary Energy Consumption 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 :

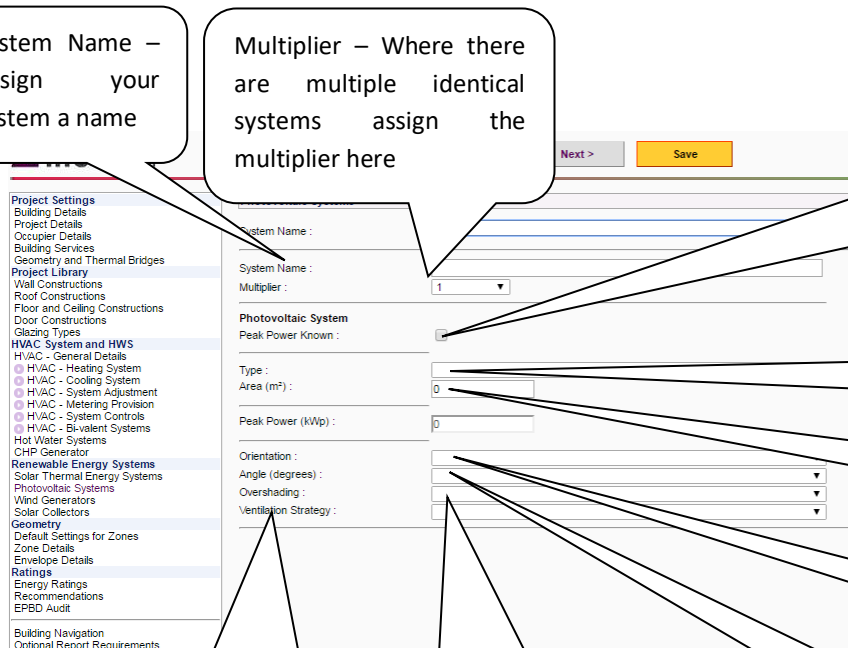
Nominal Power of Circulation System Pumps (W) :

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



System Name – Assign your system a name

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

Peak Power known – If the peak power of the system is known check this box and specify in the relevant field

Type – Select the PV system type from the drop down

Area – Specify the area of the PV array

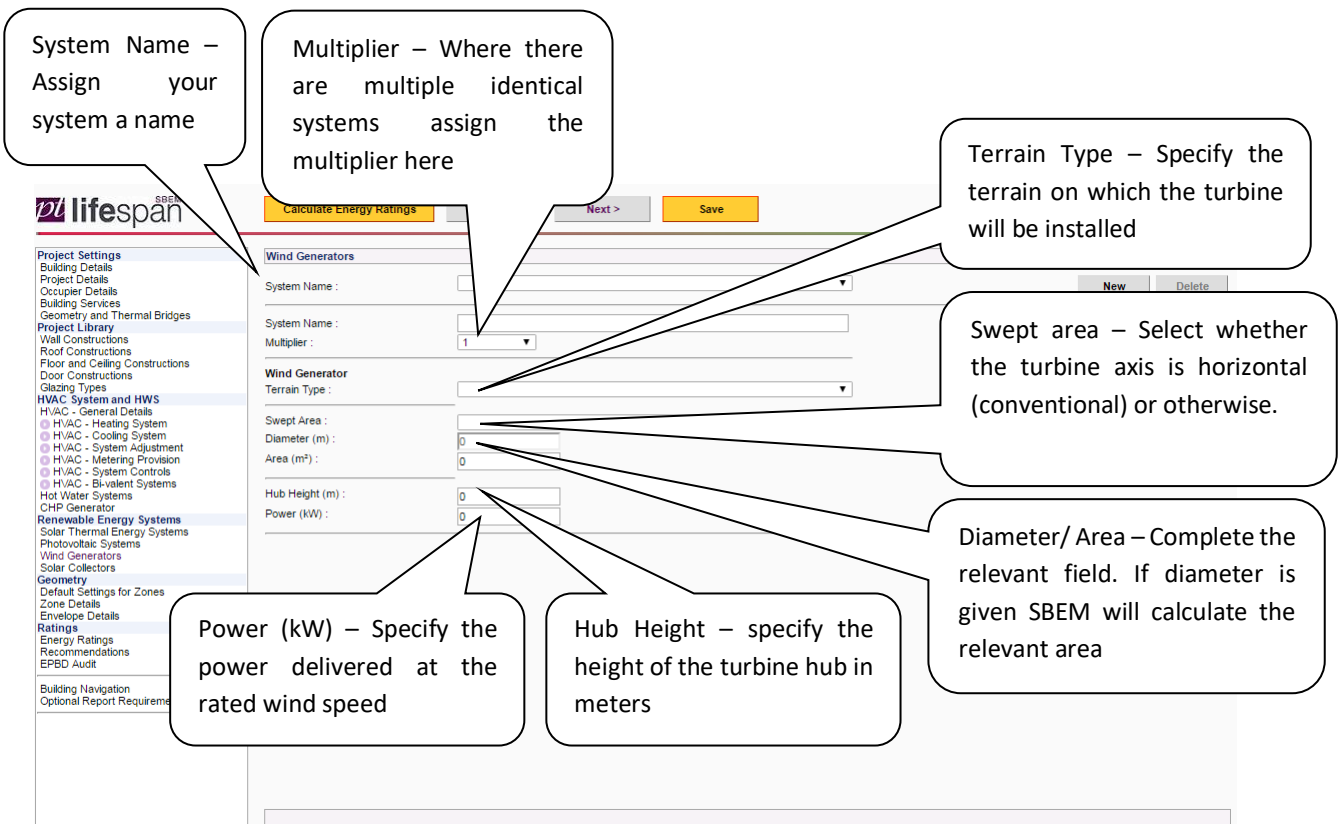
Orientation – Specify the orientation of the PV array

Angle (degrees) – Specify the inclination (from horizontal) of the PV array

Overshading – Detail the level of overshadowing the PV array is subjected to

Ventilation Strategy – Specify the ventilation between the system and the mounting surface

RENEWABLE ENERGY SYSTEMS – WIND GENERATORS



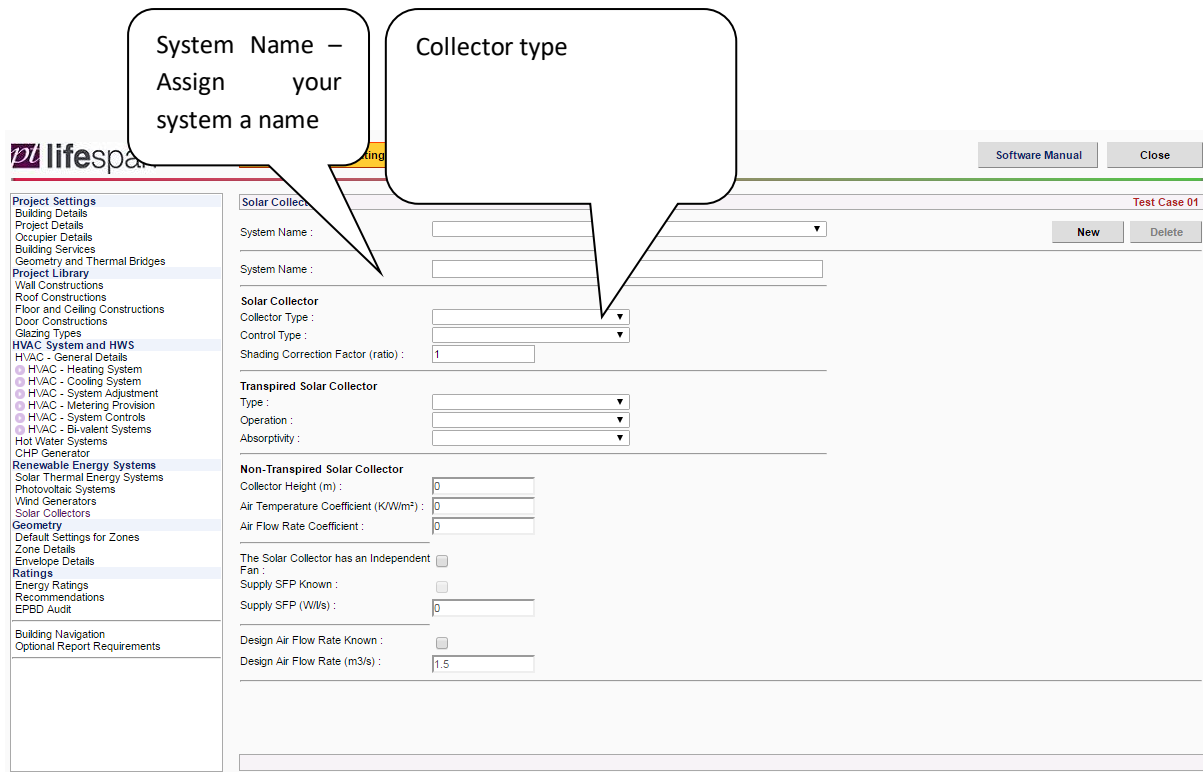
The screenshot shows the 'Wind Generators' configuration screen in the Lifespan SBEM software. The interface includes a left-hand navigation menu, a top navigation bar with 'Calculate Energy Ratings', 'Next >', and 'Save' buttons, and a main configuration area. The configuration area contains the following fields:

- System Name:** A text input field.
- Multiplier:** A dropdown menu with '1' selected.
- Wind Generator:** A dropdown menu.
- Terrain Type:** A dropdown menu.
- Swept Area:** A radio button.
- Diameter (m):** A text input field.
- Area (m²):** A text input field.
- Hub Height (m):** A text input field.
- Power (kW):** A text input field.

Callout boxes provide the following explanations:

- System Name – Assign your system a name** (points to the System Name field).
- Multiplier – Where there are multiple identical systems assign the multiplier here** (points to the Multiplier dropdown).
- Terrain Type – Specify the terrain on which the turbine will be installed** (points to the Terrain Type dropdown).
- Swept area – Select whether the turbine axis is horizontal (conventional) or otherwise.** (points to the Swept Area radio button).
- Diameter/ Area – Complete the relevant field. If diameter is given SBEM will calculate the relevant area** (points to both the Diameter and Area input fields).
- Power (kW) – Specify the power delivered at the rated wind speed** (points to the Power input field).
- Hub Height – specify the height of the turbine hub in meters** (points to the Hub Height input field).

RENEWABLE ENERGY SYSTEMS – SOLAR COLLECTORS



System Name – Assign your system a name

Collector type

The screenshot displays the 'Solar Collector' configuration window. The left sidebar shows a navigation tree with 'Solar Collectors' selected under 'Renewable Energy Systems'. The main panel contains the following fields:

- System Name:** A text input field with a dropdown arrow.
- Solar Collector:** A section header.
- Collector Type:** A dropdown menu.
- Control Type:** A dropdown menu.
- Shading Correction Factor (ratio):** A text input field with the value '1'.
- Transpired Solar Collector:** A section header.
- Type:** A dropdown menu.
- Operation:** A dropdown menu.
- Absorptivity:** A dropdown menu.
- Non-Transpired Solar Collector:** A section header.
- Collector Height (m):** A text input field with the value '0'.
- Air Temperature Coefficient (K/Wm²):** A text input field with the value '0'.
- Air Flow Rate Coefficient:** A text input field with the value '0'.
- The Solar Collector has an Independent Fan:** A checkbox.
- Supply SFP Known:** A checkbox.
- Supply SFP (W/m²):** A text input field with the value '0'.
- Design Air Flow Rate Known:** A checkbox.
- Design Air Flow Rate (m³/s):** A text input field with the value '1.5'.

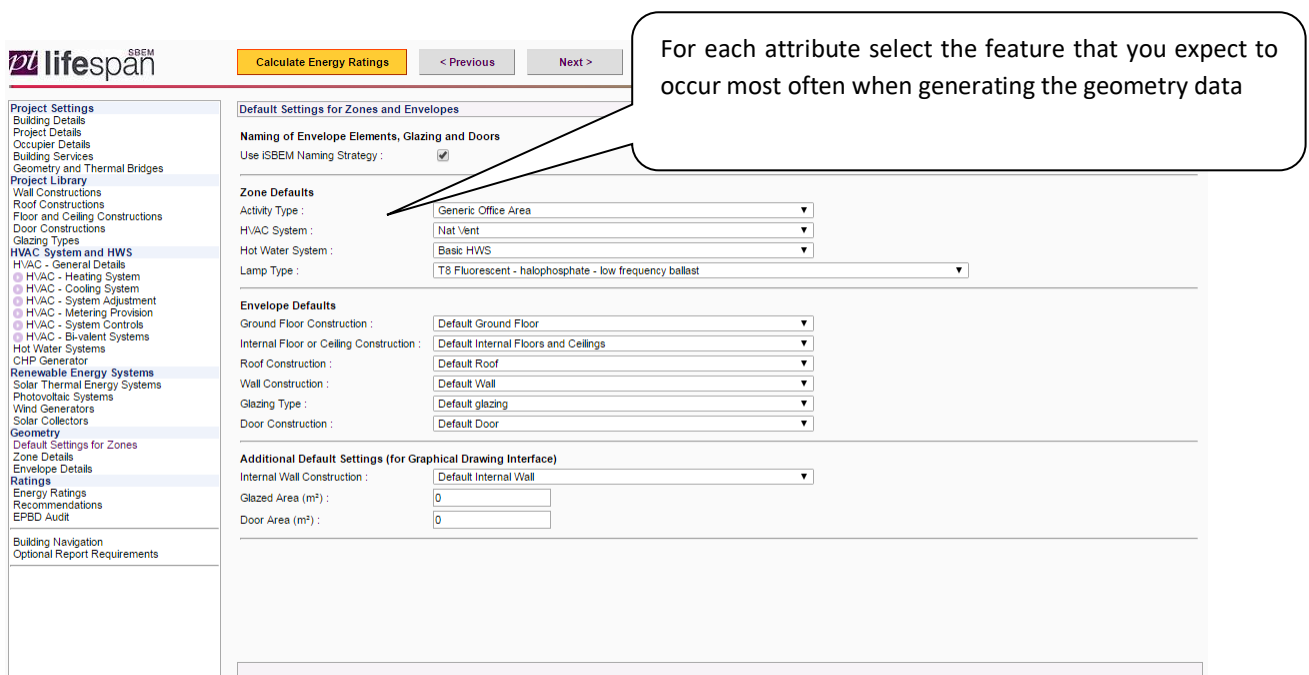
Buttons for 'New' and 'Delete' are visible in the top right corner of the configuration area.

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.



Default Settings for Zones and Envelopes

Naming of Envelope Elements, Glazing and Doors
Use SBEM Naming Strategy:

Zone Defaults

- Activity Type: Generic Office Area
- HVAC System: Nat Vent
- Hot Water System: Basic HWS
- Lamp Type: T8 Fluorescent - halophosphate - low frequency ballast

Envelope Defaults

- Ground Floor Construction: Default Ground Floor
- Internal Floor or Ceiling Construction: Default Internal Floors and Ceilings
- Roof Construction: Default Roof
- Wall Construction: Default Wall
- Glazing Type: Default glazing
- Door Construction: Default Door

Additional Default Settings (for Graphical Drawing Interface)

- Internal Wall Construction: Default Internal Wall
- Glazed Area (m²): 0
- Door Area (m²): 0

For each attribute select the feature that you expect to occur most often when generating the geometry data

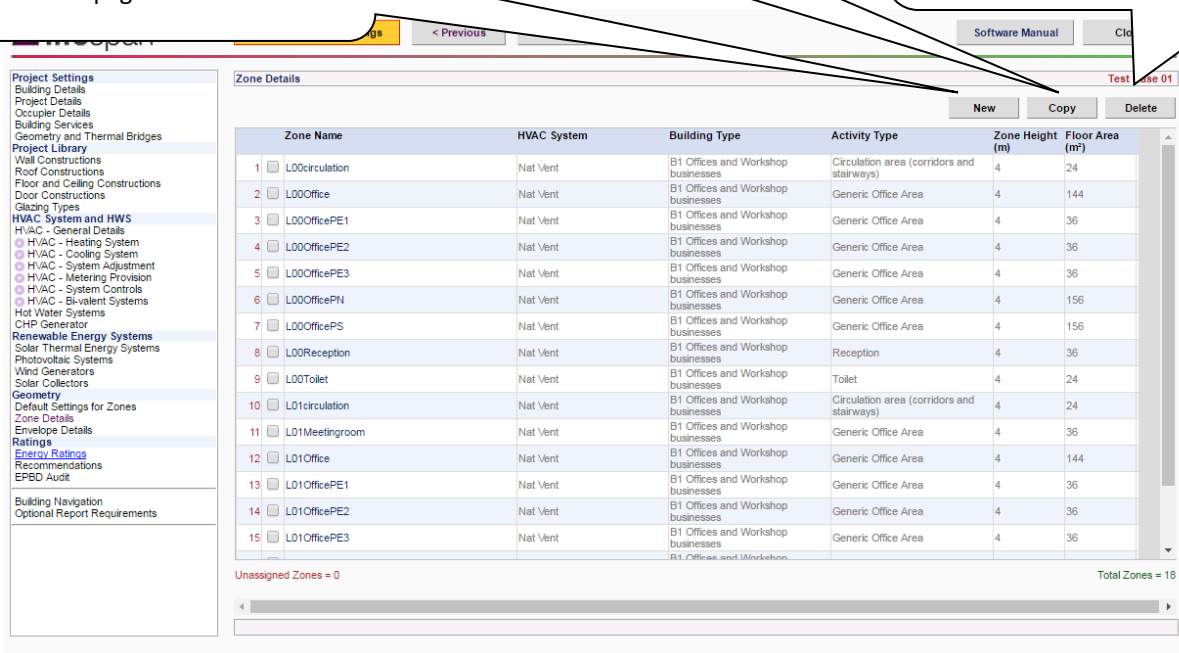
GEOMETRY – ZONE DETAILS

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

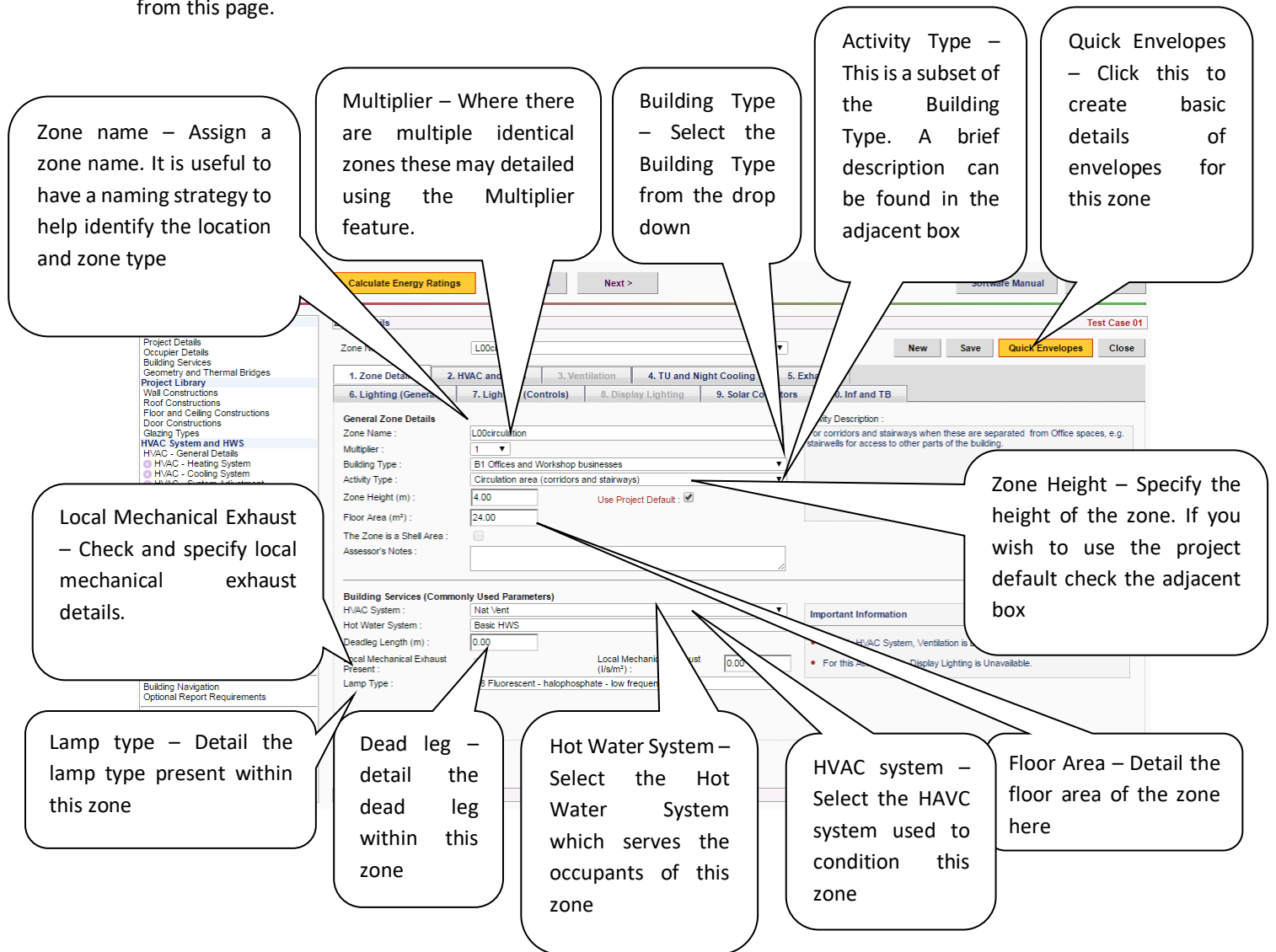


The screenshot shows the 'Zone Details' page in a software application. On the left is a navigation menu with categories like 'Project Settings', 'HVAC System and HWS', 'Renewable Energy Systems', and 'Geometry'. The main area displays a table of zones with columns for Zone Name, HVAC System, Building Type, Activity Type, Zone Height (m), and Floor Area (m²). At the top of the table are buttons for 'New', 'Copy', and 'Delete'. Below the table, it shows 'Unassigned Zones = 0' and 'Total Zones = 18'.

Zone Name	HVAC System	Building Type	Activity Type	Zone Height (m)	Floor Area (m²)
<input type="checkbox"/> L00Circulation	Nat Vent	B1 Offices and Workshop businesses	Circulation area (corridors and stairways)	4	24
<input type="checkbox"/> L00Office	Nat Vent	B1 Offices and Workshop businesses	Generic Office Area	4	144
<input type="checkbox"/> L00OfficePE1	Nat Vent	B1 Offices and Workshop businesses	Generic Office Area	4	36
<input type="checkbox"/> L00OfficePE2	Nat Vent	B1 Offices and Workshop businesses	Generic Office Area	4	36
<input type="checkbox"/> L00OfficePE3	Nat Vent	B1 Offices and Workshop businesses	Generic Office Area	4	36
<input type="checkbox"/> L00OfficePN	Nat Vent	B1 Offices and Workshop businesses	Generic Office Area	4	156
<input type="checkbox"/> L00OfficePS	Nat Vent	B1 Offices and Workshop businesses	Generic Office Area	4	156
<input type="checkbox"/> L00Reception	Nat Vent	B1 Offices and Workshop businesses	Reception	4	36
<input type="checkbox"/> L00Toilet	Nat Vent	B1 Offices and Workshop businesses	Toilet	4	24
<input type="checkbox"/> L01Circulation	Nat Vent	B1 Offices and Workshop businesses	Circulation area (corridors and stairways)	4	24
<input type="checkbox"/> L01Meetingroom	Nat Vent	B1 Offices and Workshop businesses	Generic Office Area	4	36
<input type="checkbox"/> L01Office	Nat Vent	B1 Offices and Workshop businesses	Generic Office Area	4	144
<input type="checkbox"/> L01OfficePE1	Nat Vent	B1 Offices and Workshop businesses	Generic Office Area	4	36
<input type="checkbox"/> L01OfficePE2	Nat Vent	B1 Offices and Workshop businesses	Generic Office Area	4	36
<input type="checkbox"/> L01OfficePE3	Nat Vent	B1 Offices and Workshop businesses	Generic Office Area	4	36

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.



Zone name – Assign a zone name. It is useful to have a naming strategy to help identify the location and zone type

Multiplier – Where there are multiple identical zones these may be detailed using the Multiplier feature.

Building Type – Select the Building Type from the drop down

Activity Type – This is a subset of the Building Type. A brief description can be found in the adjacent box

Quick Envelopes – Click this to create basic details of envelopes for this zone

Local Mechanical Exhaust – Check and specify local mechanical exhaust details.

Lamp type – Detail the lamp type present within this zone

Dead leg – detail the dead leg within this zone

Hot Water System – Select the Hot Water System which serves the occupants of this zone

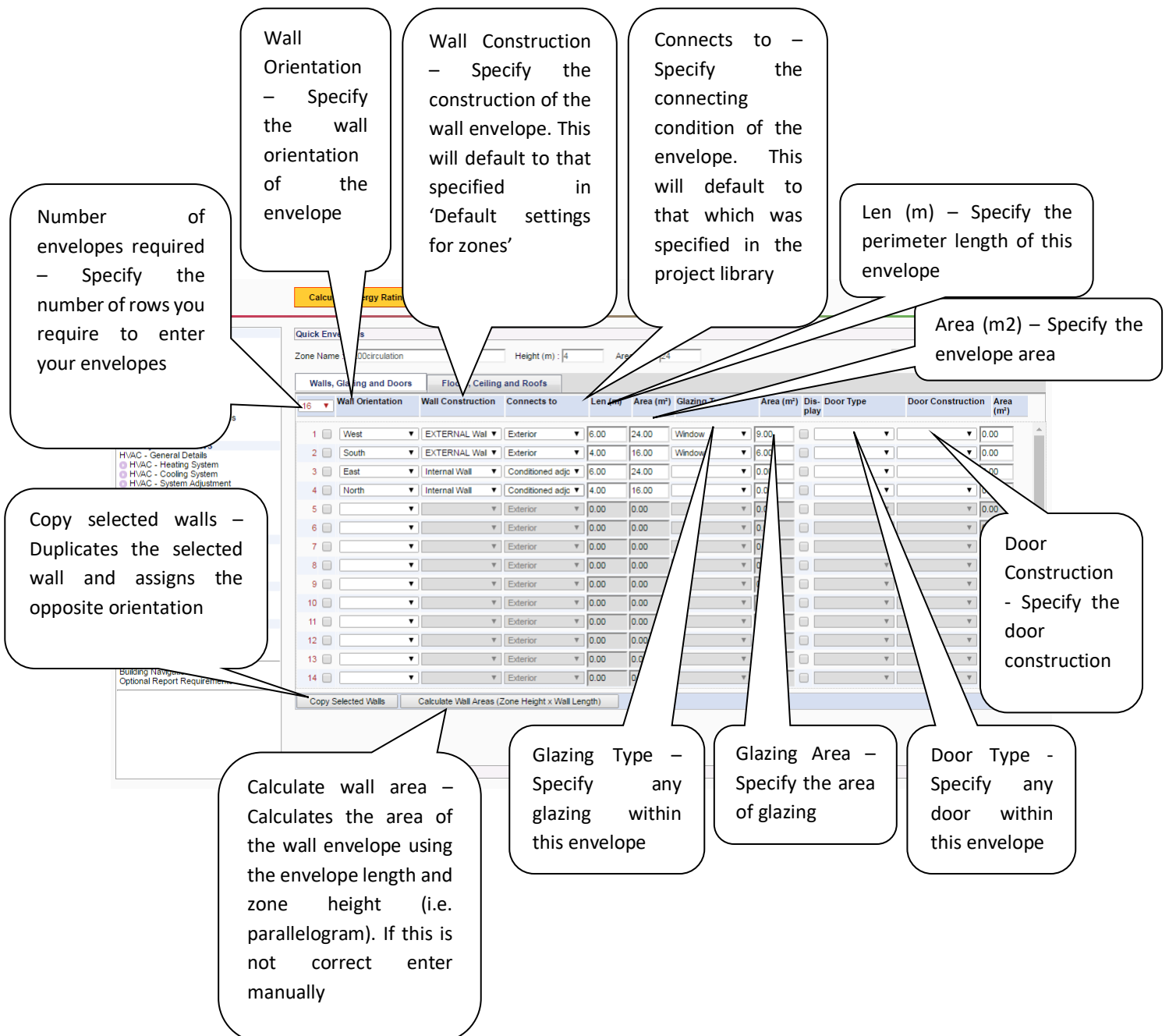
HVAC system – Select the HVAC system used to condition this zone

Zone Height – Specify the height of the zone. If you wish to use the project default check the adjacent box

Floor Area – Detail the floor area of the zone here

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.



Number of envelopes required – Specify the number of rows you require to enter your envelopes

Wall Orientation – Specify the wall orientation of the envelope

Wall Construction – Specify the construction of the wall envelope. This will default to that specified in 'Default settings for zones'

Connects to – Specify the connecting condition of the envelope. This will default to that which was specified in the project library

Len (m) – Specify the perimeter length of this envelope

Area (m²) – Specify the envelope area

Door Construction - Specify the door construction

Glazing Type – Specify any glazing within this envelope

Glazing Area – Specify the area of glazing

Door Type - Specify any door within this envelope

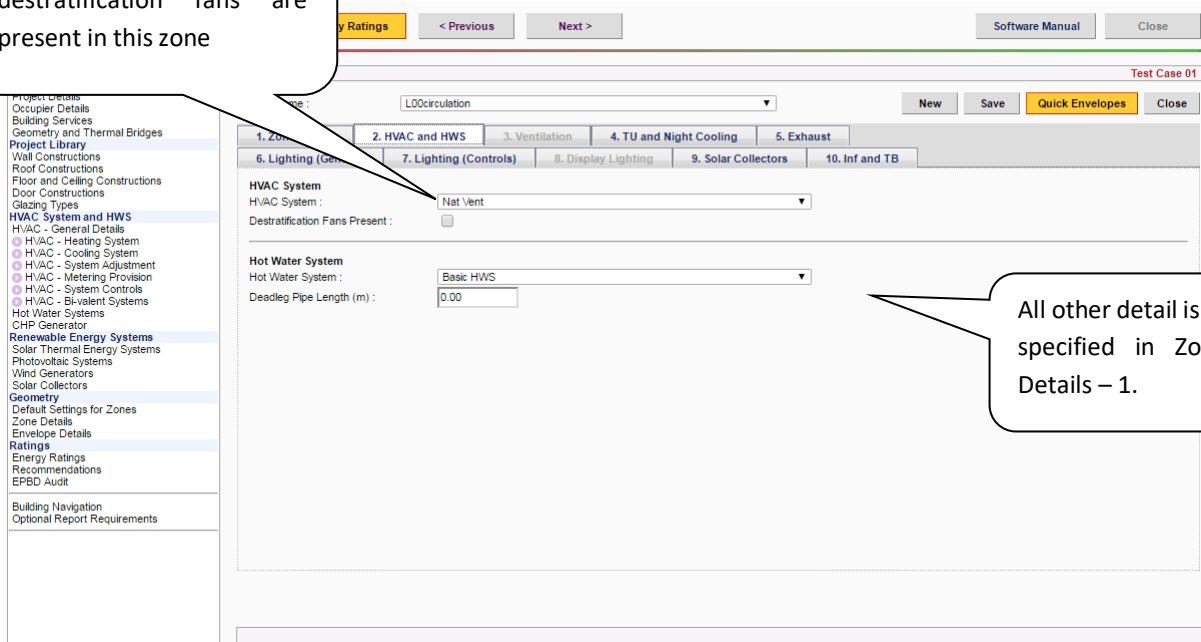
Calculate wall area – Calculates the area of the wall envelope using the envelope length and zone height (i.e. parallelogram). If this is not correct enter manually

Copy selected walls – Duplicates the selected wall and assigns the opposite orientation

	Wall Orientation	Wall Construction	Connects to	Len (m)	Area (m ²)	Glazing Type	Area (m ²)	Dis-play	Door Type	Door Construction	Area (m ²)
1	West	EXTERNAL Wal	Exterior	6.00	24.00	Window	9.00				0.00
2	South	EXTERNAL Wal	Exterior	4.00	16.00	Window	6.00				0.00
3	East	Internal Wall	Conditioned adjc	6.00	24.00		0.00				0.00
4	North	Internal Wall	Conditioned adjc	4.00	16.00		0.00				0.00
5			Exterior	0.00	0.00		0.00				0.00
6			Exterior	0.00	0.00		0.00				0.00
7			Exterior	0.00	0.00		0.00				0.00
8			Exterior	0.00	0.00		0.00				0.00
9			Exterior	0.00	0.00		0.00				0.00
10			Exterior	0.00	0.00		0.00				0.00
11			Exterior	0.00	0.00		0.00				0.00
12			Exterior	0.00	0.00		0.00				0.00
13			Exterior	0.00	0.00		0.00				0.00
14			Exterior	0.00	0.00		0.00				0.00

GEOMETRY – ZONE DETAILS – 2. HVAC AND HWS

Destratification fans present – Detail whether destratification fans are present in this zone



Energy Ratings < Previous Next > Software Manual Close

Test Case 01

LOD: circulation

New Save Quick Envelopes Close

1. Zones 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

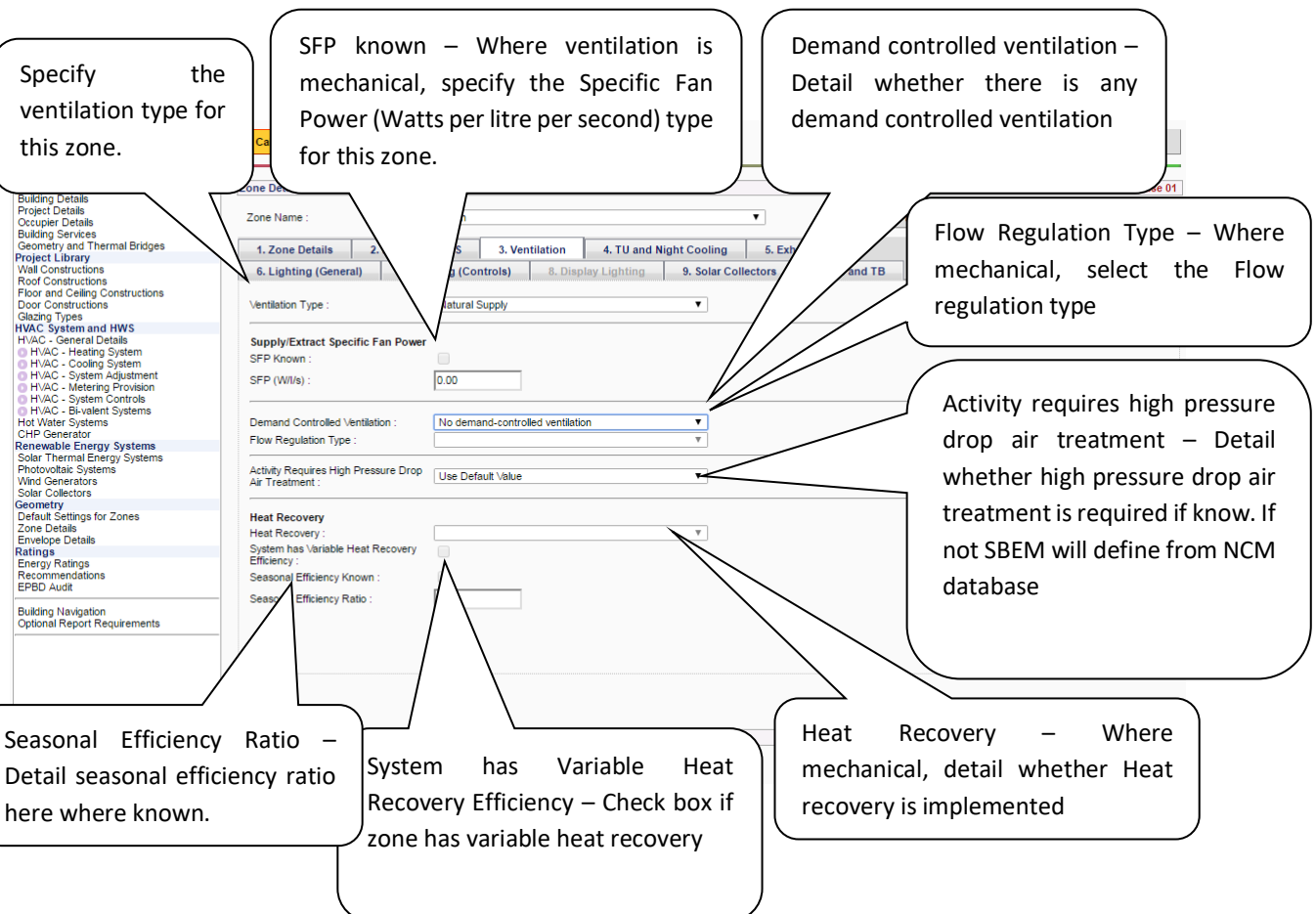
HVAC System
 HVAC System : Nat Vent
 Destratification Fans Present :

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

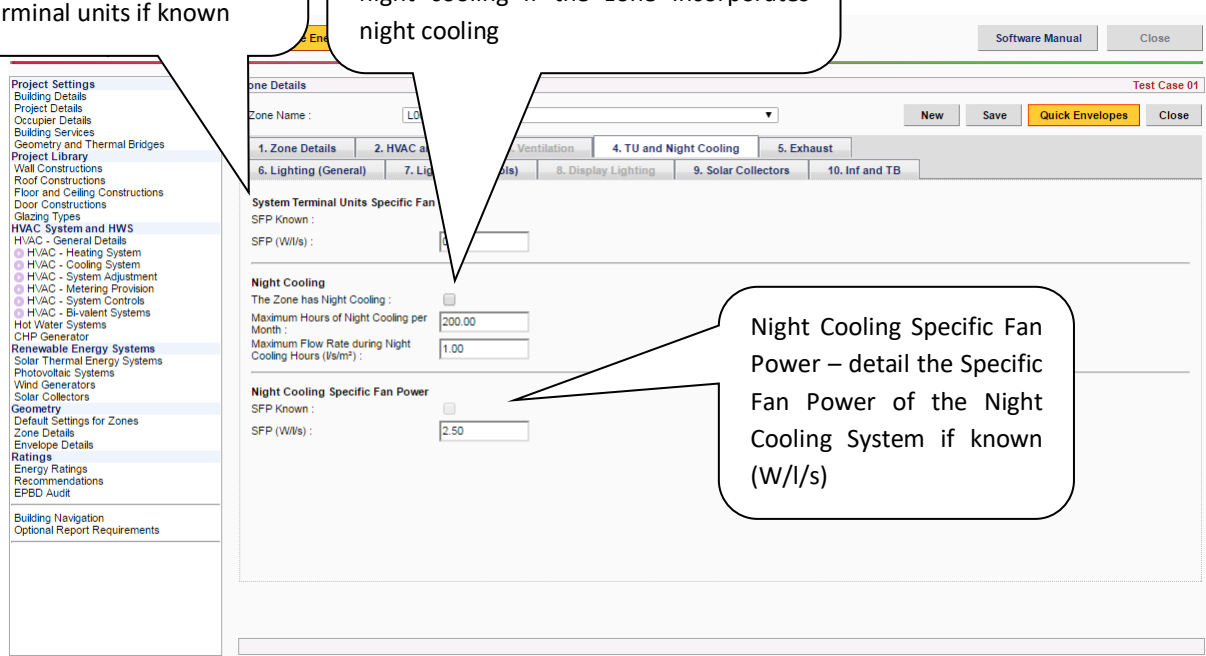
Details specified in this tab should relate to this zone specifically. Ventilation details for centralised plant should be detailed at project level in the 'HVAC Systems and HWS' area of the project library. If the centralised system incorporates terminal units in the zone these may be specified at zone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



The screenshot shows the 'Ventilation' tab in the 'Zone Details' section. The interface includes a navigation pane on the left, a main content area with various input fields, and several callout boxes providing instructions for each field.

- Specify the ventilation type for this zone.** (Callout for 'Ventilation Type' dropdown)
- SFP known – Where ventilation is mechanical, specify the Specific Fan Power (Watts per litre per second) type for this zone.** (Callout for 'SFP Known' checkbox)
- Demand controlled ventilation – Detail whether there is any demand controlled ventilation** (Callout for 'Demand Controlled Ventilation' dropdown)
- Flow Regulation Type – Where mechanical, select the Flow regulation type** (Callout for 'Flow Regulation Type' dropdown)
- Activity requires high pressure drop air treatment – Detail whether high pressure drop air treatment is required if know. If not SBEM will define from NCM database** (Callout for 'Activity Requires High Pressure Drop Air Treatment' dropdown)
- Seasonal Efficiency Ratio – Detail seasonal efficiency ratio here where known.** (Callout for 'Seasonal Efficiency Known' checkbox)
- System has Variable Heat Recovery Efficiency – Check box if zone has variable heat recovery** (Callout for 'System has Variable Heat Recovery' checkbox)
- Heat Recovery – Where mechanical, detail whether Heat recovery is implemented** (Callout for 'Heat Recovery' dropdown)

GEOMETRY – ZONE DETAILS – 4. TU AND NIGHT COOLING



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

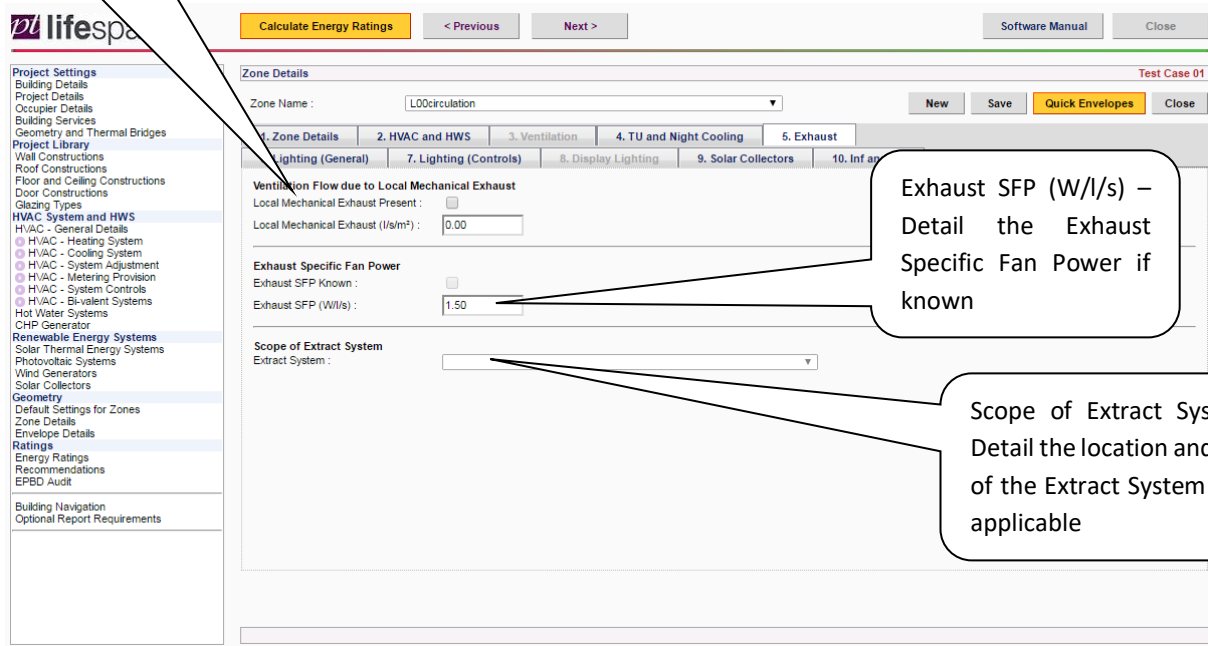
The Zone has Night Cooling – Specify the maximum hours of night cooling per month and Maximum flow rate during night cooling if the zone incorporates night cooling

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

The screenshot shows the 'Zone Details' window with the '4. TU and Night Cooling' tab selected. The 'System Terminal Units Specific Fan Power' section includes a checkbox for 'SFP Known' and a text input field for 'SFP (W/l/s)'. The 'Night Cooling' section includes a checkbox for 'The Zone has Night Cooling', a text input for 'Maximum Hours of Night Cooling per Month' (set to 200.00), a text input for 'Maximum Flow Rate during Night Cooling Hours (l/s/m²)' (set to 1.00), and another 'SFP Known' checkbox with a corresponding 'SFP (W/l/s)' text input (set to 2.50). The left sidebar shows a navigation tree with 'Zone Details' highlighted under the 'Geometry' section.

GEOMETRY – ZONE DETAILS – 5. EXHAUST

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



Ventilation Flow due to Local Mechanical Exhaust

Local Mechanical Exhaust Present :

Local Mechanical Exhaust (l/s/m²) :

Exhaust Specific Fan Power

Exhaust SFP Known :

Exhaust SFP (W/l/s) :

Scope of Extract System

Extract System :

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

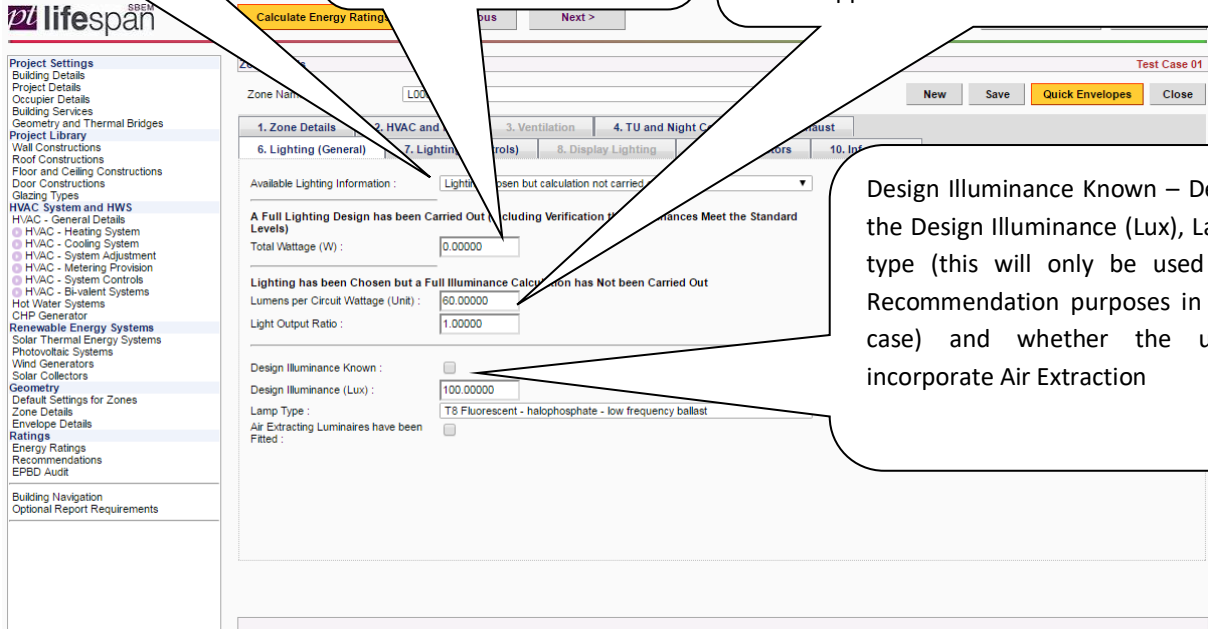
GEOMETRY – ZONE DETAILS – 6. LIGHTING (GENERAL)

Available Lighting Information – Specify the level of lighting information available

A Full Lighting Design has been Carried Out – Detail the Total Wattage where applicable

Lighting has been Chosen but a Full Illuminance Calculation has not been carried out – Detail the Lumens Per Circuit Watt and Light Output Ratio where applicable

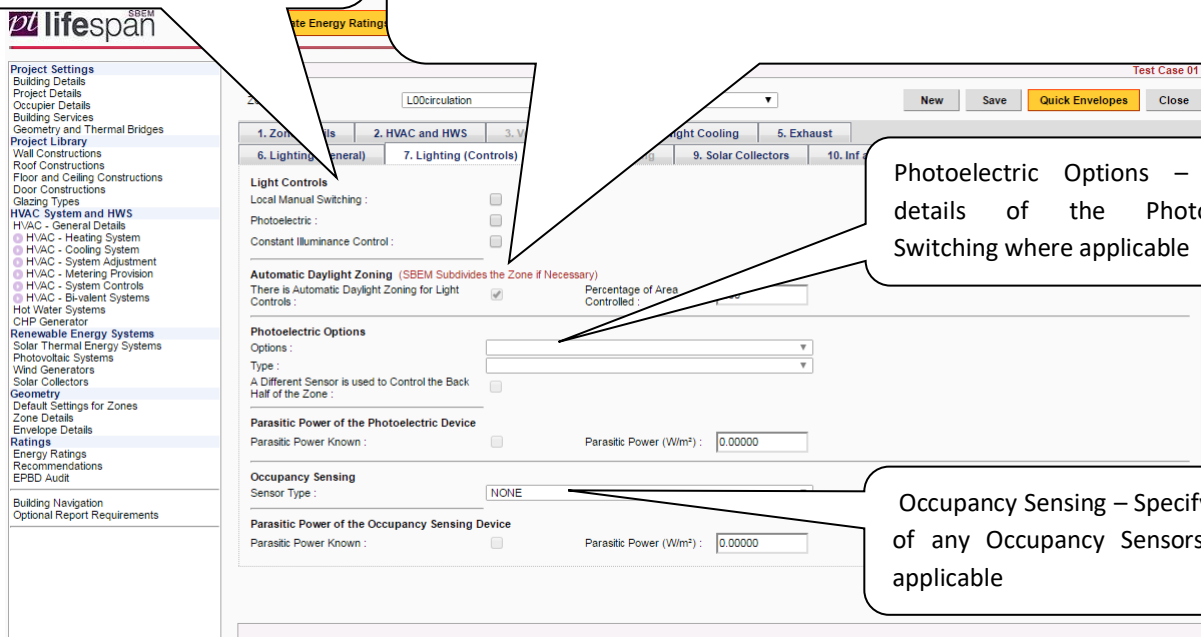
Design Illuminance Known – Detail the Design Illuminance (Lux), Lamp type (this will only be used for Recommendation purposes in this case) and whether the units incorporate Air Extraction



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



Light Controls

Local Manual Switching :

Photoelectric :

Constant Illuminance Control :

Automatic Daylight Zoning (SBEM Subdivides the Zone if Necessary)

There is Automatic Daylight Zoning for Light Controls : Percentage of Area Controlled :

Photoelectric Options

Options :

Type :

A Different Sensor is used to Control the Back Half of the Zone :

Parasitic Power of the Photoelectric Device

Parasitic Power Known : Parasitic Power (W/m²) :

Occupancy Sensing

Sensor Type :

Parasitic Power of the Occupancy Sensing Device

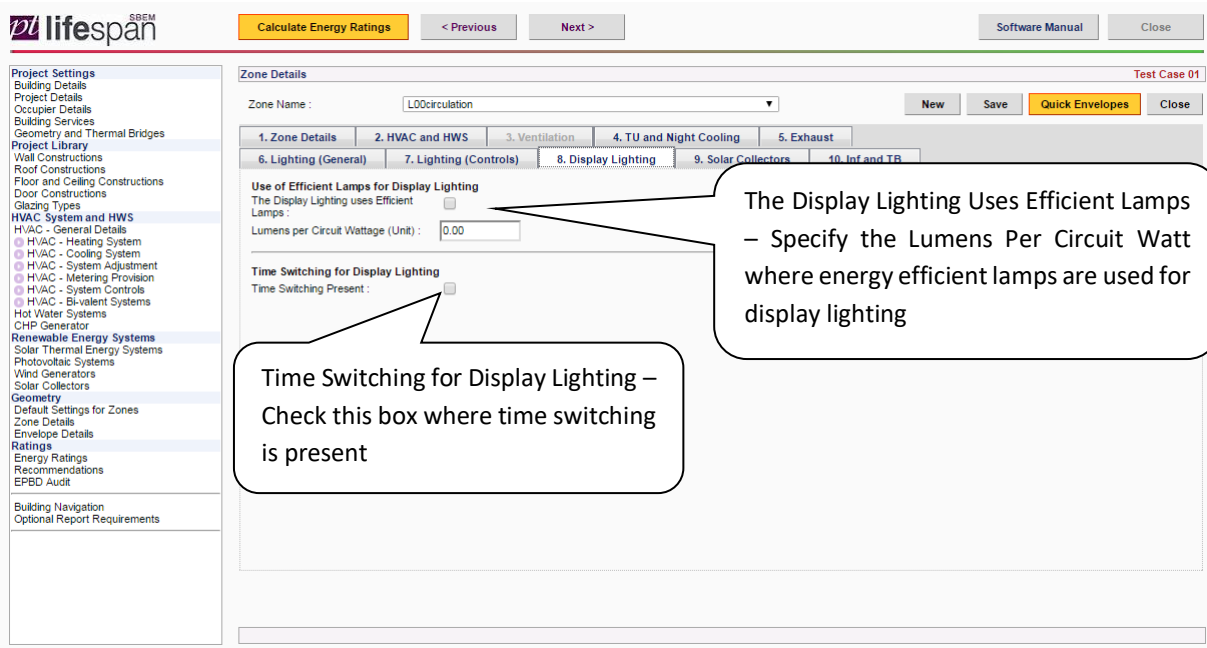
Parasitic Power Known : Parasitic Power (W/m²) :

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.



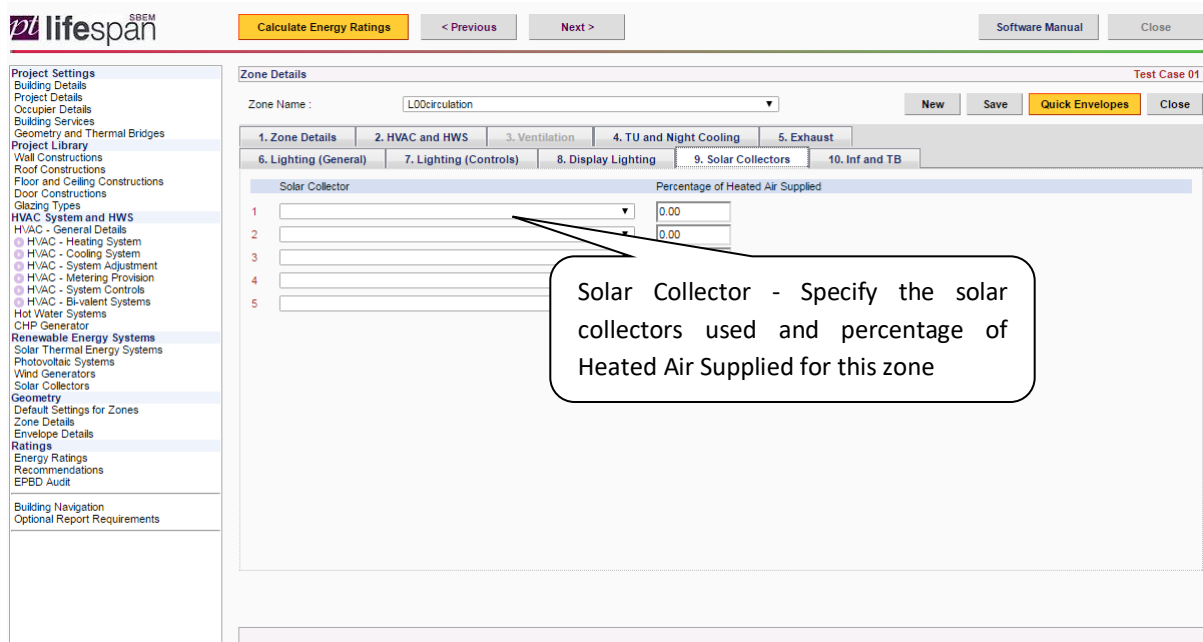
Use of Efficient Lamps for Display Lighting
 The Display Lighting uses Efficient Lamps:
 Lumens per Circuit Wattage (Unit):

Time Switching for Display Lighting
 Time Switching Present:

The Display Lighting Uses Efficient Lamps – Specify the Lumens Per Circuit Watt where energy efficient lamps are used for display lighting

Time Switching for Display Lighting – Check this box where time switching is present

GEOMETRY – ZONE DETAILS – 9. SOLAR COLLECTORS



The screenshot shows the 'Zone Details' window for 'L00circulation'. The '9. Solar Collectors' tab is active, displaying a table with the following columns: 'Solar Collector' and 'Percentage of Heated Air Supplied'. The table contains five rows, with the first two rows having a dropdown menu and a text input field respectively.

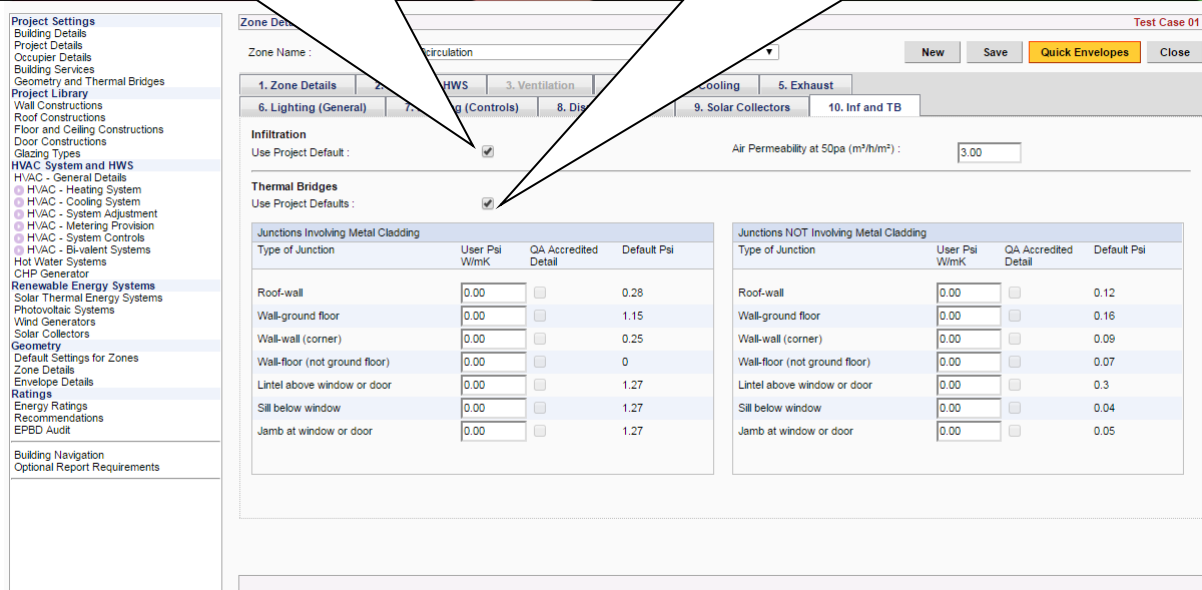
Solar Collector	Percentage of Heated Air Supplied
1	0.00
2	0.00
3	
4	
5	

A callout box with the text "Solar Collector - Specify the solar collectors used and percentage of Heated Air Supplied for this zone" points to the dropdown menu in the first row of the table.

GEOMETRY – ZONE DETAILS – 10. INFILTRATION AND THERMAL BRIDGING

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

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



Zone Details

Zone Name: Circulation

1. Zone Details | 2. HVAC System and HWS | 3. Ventilation | 4. Cooling | 5. Exhaust | 6. Lighting (General) | 7. Lighting (Controls) | 8. Display | 9. Solar Collectors | 10. Inf and TB

Infiltration

Use Project Default: Air Permeability at 50pa (m³/h/m²): 3.00

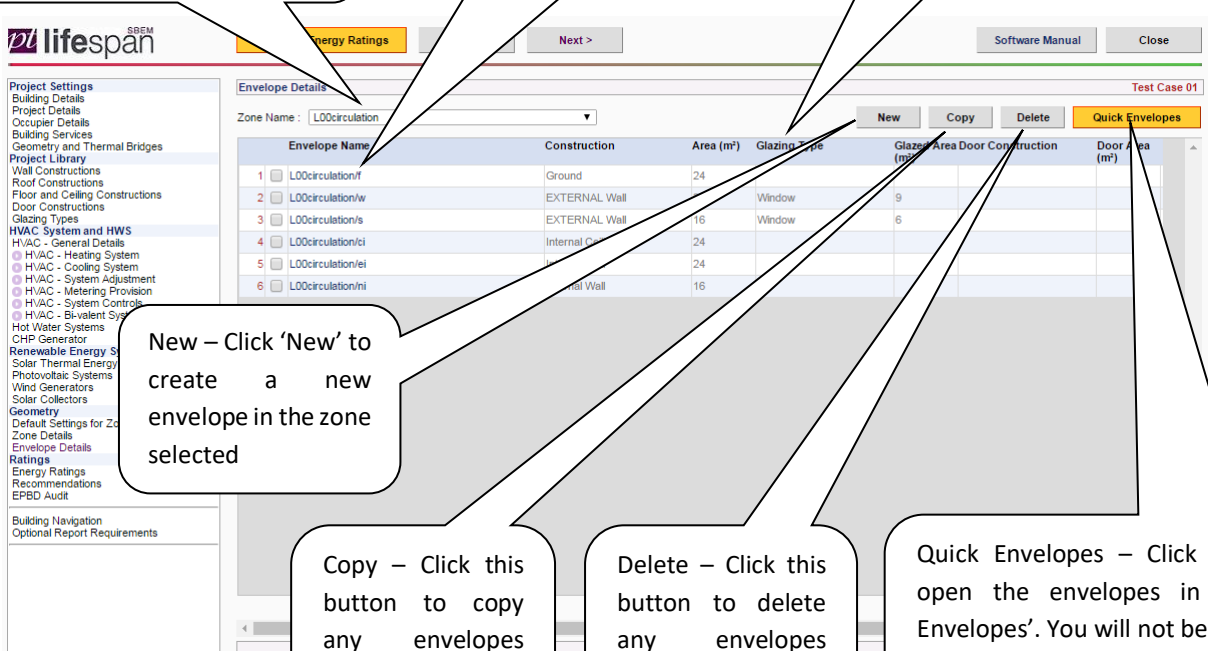
Thermal Bridges

Use Project Defaults:

Junctions Involving Metal Cladding				Junctions NOT Involving Metal Cladding			
Type of Junction	User Psi W/mK	QA Accredited Detail	Default Psi	Type of Junction	User Psi W/mK	QA Accredited Detail	Default Psi
Roof-wall	0.00	<input type="checkbox"/>	0.28	Roof-wall	0.00	<input type="checkbox"/>	0.12
Wall-ground floor	0.00	<input type="checkbox"/>	1.15	Wall-ground floor	0.00	<input type="checkbox"/>	0.16
Wall-wall (corner)	0.00	<input type="checkbox"/>	0.25	Wall-wall (corner)	0.00	<input type="checkbox"/>	0.09
Wall-floor (not ground floor)	0.00	<input type="checkbox"/>	0	Wall-floor (not ground floor)	0.00	<input type="checkbox"/>	0.07
Lintel above window or door	0.00	<input type="checkbox"/>	1.27	Lintel above window or door	0.00	<input type="checkbox"/>	0.3
Sill below window	0.00	<input type="checkbox"/>	1.27	Sill below window	0.00	<input type="checkbox"/>	0.04
Jamb at window or door	0.00	<input type="checkbox"/>	1.27	Jamb at window or door	0.00	<input type="checkbox"/>	0.05

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.



The screenshot shows the 'Envelope Details' window in the software. The 'Zone Name' is set to 'L00circulation'. A table lists six envelope entries with columns for Envelope Name, Construction, Area (m²), Glazing Type, Glazed Area (m²), Door Construction, and Door Area (m²). Callout boxes provide instructions for the 'New', 'Copy', 'Delete', and 'Quick Envelopes' buttons, as well as the 'Zone Name' dropdown and the table headers.

Zone Name – Select the Zone that you would like to create/ amend envelopes for

Envelope Name – Click on an existing envelope name to edit the envelope

Details of each envelope is summarised here

New – Click 'New' to create a new envelope in the zone selected

Copy – Click this button to copy any envelopes selected using the check boxes

Delete – Click this button to delete any envelopes selected using the check boxes

Quick Envelopes – Click this to open the envelopes in 'Quick Envelopes'. You will not be able to specify full envelope details in this facility

Envelope Name	Construction	Area (m ²)	Glazing Type	Glazed Area (m ²)	Door Construction	Door Area (m ²)
1 L00circulation/f	Ground	24				
2 L00circulation/w	EXTERNAL Wall		Window	9		
3 L00circulation/s	EXTERNAL Wall	16	Window	6		
4 L00circulation/ci	Internal Ceiling	24				
5 L00circulation/ei	Internal Wall	24				
6 L00circulation/ri	Internal Wall	16				

GEOMETRY – ENVELOPE DETAILS

Envelope Details

Zone Name :

Envelope Details

Envelope Name :

Multiplier :

Orientation :

Envelope Type :

Roof Pitch ° :

Loft Access :

Construction :

Connects to : Use Default :

Zone Height (m) :

Wall Length (m) :

Area (m²) :

Solar Collector

Wall Fitted with Solar Collector :

Additional Thermal Bridges :

Envelope Name – Give the envelope a name of your choosing

Multiplier – Where there are multiple identical envelopes these may be detailed using the Multiplier feature.

Orientation – Specify the orientation of the envelope

Envelope Type – Specify the type of envelope

Roof Pitch – Where relevant detail the roof pitch here

Construction – Select the construction type

Loft access – tick whether loft access is available

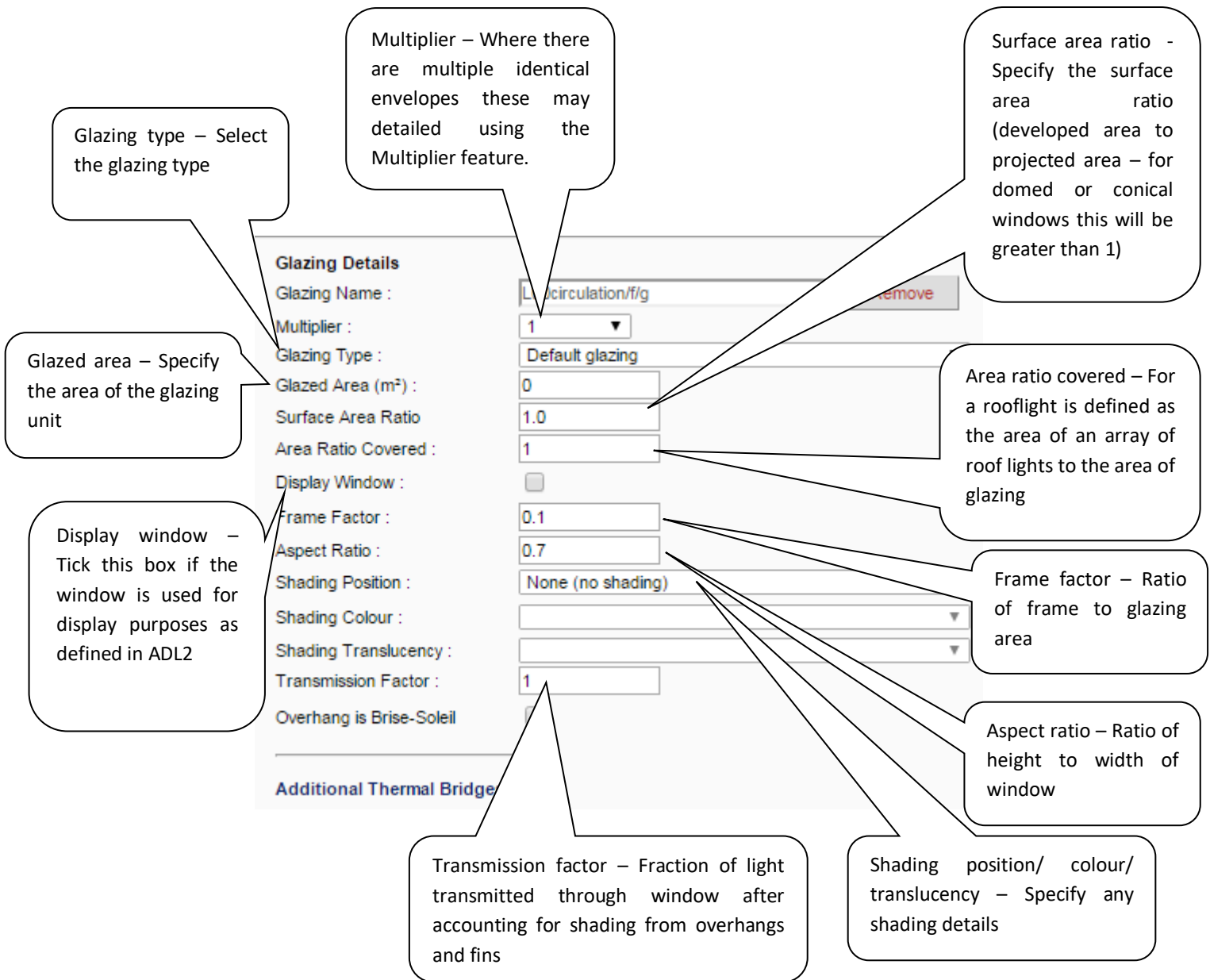
Connects to – Detail the connecting condition

Zone height/ Wall length/ Area – Specify the measured geometry here

Additional Thermal Bridges – Specify details of thermal bridges for this envelope here

Solar Collector – Specify solar collector details for this envelope

GEOMETRY – ENVELOPE DETAILS – GLAZING DETAILS



Glazing Details

Glazing Name : [L/circulation/ff/g] remove

Multiplier : 1

Glazing Type : Default glazing

Glazed Area (m²) : 0

Surface Area Ratio : 1.0

Area Ratio Covered : 1

Display Window :

Frame Factor : 0.1

Aspect Ratio : 0.7

Shading Position : None (no shading)

Shading Colour : [dropdown]

Shading Translucency : [dropdown]

Transmission Factor : 1

Overhang is Brise-Soleil


Additional Thermal Bridge

Callout Boxes:

- Glazing type – Select the glazing type** (points to Glazing Type)
- Multiplier – Where there are multiple identical envelopes these may be detailed using the Multiplier feature.** (points to Multiplier)
- Surface area ratio - Specify the surface area ratio (developed area to projected area – for domed or conical windows this will be greater than 1)** (points to Surface Area Ratio)
- Area ratio covered – For a rooflight is defined as the area of an array of roof lights to the area of glazing** (points to Area Ratio Covered)
- Frame factor – Ratio of frame to glazing area** (points to Frame Factor)
- Aspect ratio – Ratio of height to width of window** (points to Aspect Ratio)
- Shading position/ colour/ translucency – Specify any shading details** (points to Shading Position, Colour, and Translucency)
- Transmission factor – Fraction of light transmitted through window after accounting for shading from overhangs and fins** (points to Transmission Factor)
- Display window – Tick this box if the window is used for display purposes as defined in ADL2** (points to Display Window)
- Glazed area – Specify the area of the glazing unit** (points to Glazed Area)

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.



Calculate Energy Ratings
< Previous
Next >

Software Manual
Close

Test Case 01

- 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

Energy Ratings

EPC England

	Primary Energy Use (kWh/m ² /year)					TOTAL
	Heating	Cooling	Auxiliary	Lighting	Hot Water	
Actual Building :	25.62	64.01	64.47	22.97	3.69	210.77
Notional Building :	21.33	9.09	20.26	21.56	3.01	75.25
Reference Building :	47.52	25.22	2.89	43.82	5.78	125.23

	Part L TER	Typical	SER	BER	EPC Rating
Ig CO ₂ /m ² /year :	31	90.9	37.4	98.2	E
Band :	B	E	B-C	F	131

More energy efficient

A+

Net zero CO₂ emissions

- A 0-25
- B 26-50
- C 51-75
- D 76-100
- E 101-125
- F 126-150
- G Over 150

Less energy efficient

◀ **131** This is how energy efficient the building is.

Main SBEM Reports

- Energy Performance Certificate
- EPC Recommendations Report
- EPC Secondary Recommendations Report
- Compliance with England Building Regulations Part L
- Additional Details Report

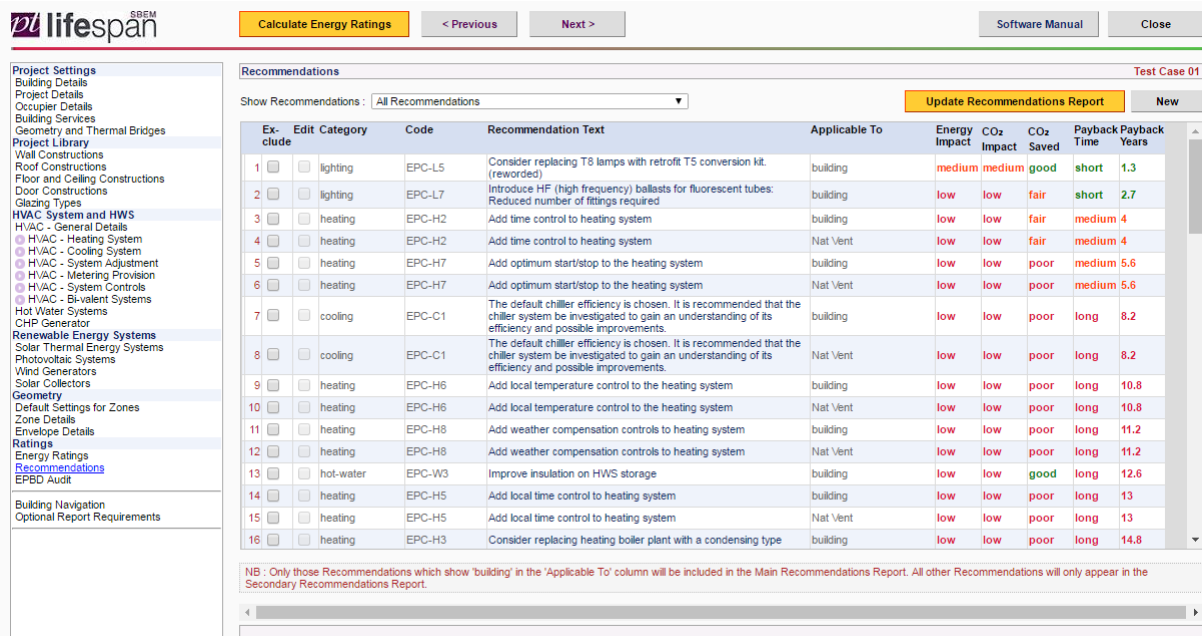
The EPC and Recommendations Reports are for Illustration Purposes Only

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 the project.



The screenshot shows the 'Recommendations' section of the Lifespan SBEM software. The interface includes a sidebar with navigation options like 'Project Settings', 'Project Library', and 'Recommendations'. The main area displays a table of recommendations with columns for 'Ex-clude', 'Edit', 'Category', 'Code', 'Recommendation Text', 'Applicable To', 'Energy Impact', 'CO2 Impact', 'CO2 Saved', 'Payback Time', and 'Payback Years'. Buttons for 'Calculate Energy Ratings', 'Update Recommendations Report', and 'New' are visible. A note at the bottom states: 'NB: Only those Recommendations which show 'building' in the 'Applicable To' column will be included in the Main Recommendations Report. All other Recommendations will only appear in the Secondary Recommendations Report.'

Ex-clude	Edit	Category	Code	Recommendation Text	Applicable To	Energy Impact	CO2 Impact	CO2 Saved	Payback Time	Payback Years
<input type="checkbox"/>	<input type="checkbox"/>	lighting	EPC-L5	Consider replacing T8 lamps with retrofit T5 conversion kit. (reworded)	building	medium	medium	good	short	1.3
<input type="checkbox"/>	<input type="checkbox"/>	lighting	EPC-L7	Introduce HF (high frequency) ballasts for fluorescent tubes: Reduced number of fittings required	building	low	low	fair	short	2.7
<input type="checkbox"/>	<input type="checkbox"/>	heating	EPC-H2	Add time control to heating system	building	low	low	fair	medium	4
<input type="checkbox"/>	<input type="checkbox"/>	heating	EPC-H2	Add time control to heating system	Nat Vent	low	low	fair	medium	4
<input type="checkbox"/>	<input type="checkbox"/>	heating	EPC-H7	Add optimum start/stop to the heating system	building	low	low	poor	medium	5.6
<input type="checkbox"/>	<input type="checkbox"/>	heating	EPC-H7	Add optimum start/stop to the heating system	Nat Vent	low	low	poor	medium	5.6
<input type="checkbox"/>	<input type="checkbox"/>	cooling	EPC-C1	The default chiller efficiency is chosen. It is recommended that the chiller system be investigated to gain an understanding of its efficiency and possible improvements.	building	low	low	poor	long	8.2
<input type="checkbox"/>	<input type="checkbox"/>	cooling	EPC-C1	The default chiller efficiency is chosen. It is recommended that the chiller system be investigated to gain an understanding of its efficiency and possible improvements.	Nat Vent	low	low	poor	long	8.2
<input type="checkbox"/>	<input type="checkbox"/>	heating	EPC-H6	Add local temperature control to the heating system	building	low	low	poor	long	10.8
<input type="checkbox"/>	<input type="checkbox"/>	heating	EPC-H6	Add local temperature control to the heating system	Nat Vent	low	low	poor	long	10.8
<input type="checkbox"/>	<input type="checkbox"/>	heating	EPC-H8	Add weather compensation controls to heating system	building	low	low	poor	long	11.2
<input type="checkbox"/>	<input type="checkbox"/>	heating	EPC-H8	Add weather compensation controls to heating system	Nat Vent	low	low	poor	long	11.2
<input type="checkbox"/>	<input type="checkbox"/>	hot-water	EPC-W3	Improve insulation on HWS storage	building	low	low	good	long	12.6
<input type="checkbox"/>	<input type="checkbox"/>	heating	EPC-H5	Add local time control to heating system	building	low	low	poor	long	13
<input type="checkbox"/>	<input type="checkbox"/>	heating	EPC-H5	Add local time control to heating system	Nat Vent	low	low	poor	long	13
<input type="checkbox"/>	<input type="checkbox"/>	heating	EPC-H3	Consider replacing heating boiler plant with a condensing type	building	low	low	poor	long	14.8

RATINGS – 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

Primary Energy Use (kWh/m²/year)

	Heating	Cooling	Auxiliary	Lighting	Hot Water	TOTAL
Actual Building :	26.92	0	1.59	22.89	3.69	55.1
Notional Building :	26.59	0	1.59	21.51	3.01	52.7

CO₂ Emissions (kg CO₂/m²)

Actual Building Emission Rate (BER) :	19
Notional Building Emission Rate :	18.08
Target Emission Rate (TER) :	18.08

Pass CO₂ Emissions Requirement (BER <= TER) : **NO**

Main SBEM Reports

- Compliance with England Building Regulations Part L
- Additional Details Report
- Input Document

For Part L checks in England the key Criterion that is checked by SBEM is that the ‘Building Emission Rate’ (BER) is less than the ‘Target Emission Rate’ (TER).

SBEM also reports on other criterion such as back stop U-Values etc. These are reported within the Compliance report

PART L WALES

Primary Energy Consumption (kWh/m²/year)

	Heating	Cooling	Auxiliary	Lighting	Hot Water	TOTAL
Actual Building :	26.89	0	1.59	23.01	3.69	55.18
Notional Building :	26.9	0	1.59	20.25	3.01	51.76

CO₂ Emissions (kg CO₂/m²/year)

Building Emission Rate (BER) :	19.05
Notional Building Emission Rate :	14.21
Target Emission Rate (TER) :	14.21

Pass CO₂ Emissions Requirement (BER <= TER) : **NO**

Primary Energy Consumption (kWh/m²/year)

Building Primary Energy Consumption (BPEC) :	110.94
Notional Building Primary Energy Consumption :	101.88
Target Primary Energy Consumption (TPEC) :	101.88

Pass Primary Energy Requirement (BPEC <= TPEC) : **NO**

Pass Criterion 1 (BER <= TER and BPEC <= TPEC) : **NO**

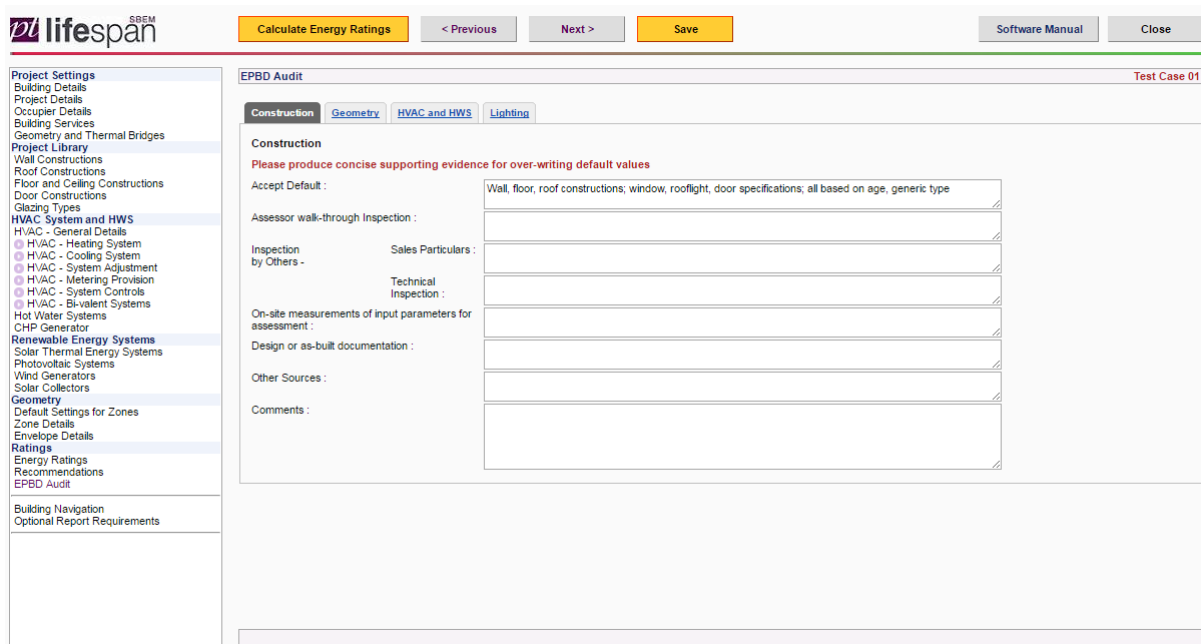
Main SBEM Reports

- Compliance with Wales Building Regulations Part L
- Additional Details Report
- SBEM Main Output Document

For Part L checks in Wales there are 2 key Criterion tested by SBEM. The first is that the ‘Building Emission Rate’ (BER) is less than the ‘Target Emission Rate’ (TER). The second is a test to check that the Building Primary Energy Consumption (BPEC) is lower than the Target Primary Energy Consumption (TPEC). Both of these tests need to pass to fulfill the Criterion 1 requirement

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.

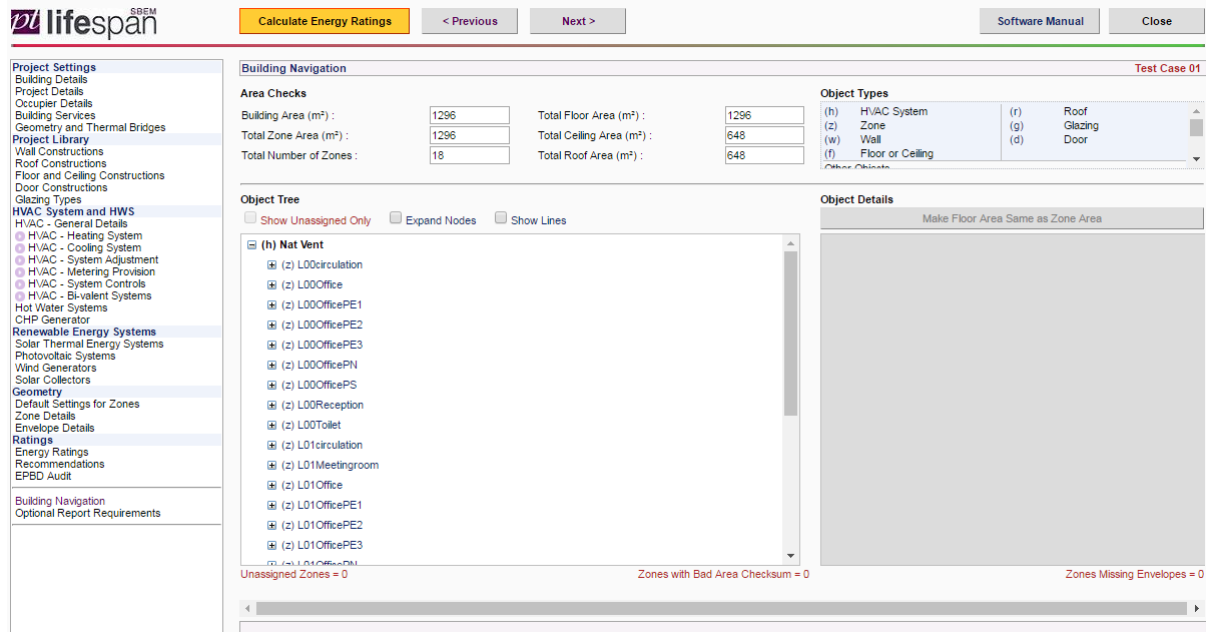


The screenshot displays the Lifespan SBEM software interface. At the top, there is a navigation bar with buttons for 'Calculate Energy Ratings', '< Previous', 'Next >', 'Save', 'Software Manual', and 'Close'. The left sidebar contains a tree view of project settings, including 'Project Settings', 'Building 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', 'Renewable Energy Systems', 'Geometry', 'Ratings', and 'Building Navigation'. The main content area is titled 'EPBD Audit' and includes a sub-tabbed interface with 'Construction', 'Geometry', 'HVAC and HWS', and 'Lighting'. The 'Construction' tab is active, showing a form with the following sections:

- Construction**: Please produce concise supporting evidence for over-writing default values
- Accept Default :** Wall, floor, roof constructions; window, rooflight, door specifications; all based on age, generic type
- Assessor walk-through Inspection :** [Text input field]
- Inspection by Others - Sales Particulars :** [Text input field]
- Technical Inspection :** [Text input field]
- On-site measurements of input parameters for assessment :** [Text input field]
- Design or as-built documentation :** [Text input field]
- Other Sources :** [Text input field]
- Comments :** [Text input field]

BUILDING NAVIGATION

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



lifespan SBEM

Calculate Energy Ratings < Previous Next > Software Manual Close

Building Navigation Test Case 01

Area Checks

Building Area (m ²) :	1296	Total Floor Area (m ²) :	1296
Total Zone Area (m ²) :	1296	Total Ceiling Area (m ²) :	648
Total Number of Zones :	18	Total Roof Area (m ²) :	648

Object Types

(h)	HVAC System	(r)	Roof
(z)	Zone	(g)	Glazing
(w)	Wall	(d)	Door
(f)	Floor or Ceiling		

Object Tree

Show Unassigned Only Expand Nodes Show Lines

- (h) Nat Vent
 - (z) L00Circulation
 - (z) L00Office
 - (z) L00OfficePE1
 - (z) L00OfficePE2
 - (z) L00OfficePE3
 - (z) L00OfficePN
 - (z) L00OfficePS
 - (z) L00Reception
 - (z) L00Toilet
 - (z) L01Circulation
 - (z) L01Meetingroom
 - (z) L01Office
 - (z) L01OfficePE1
 - (z) L01OfficePE2
 - (z) L01OfficePE3

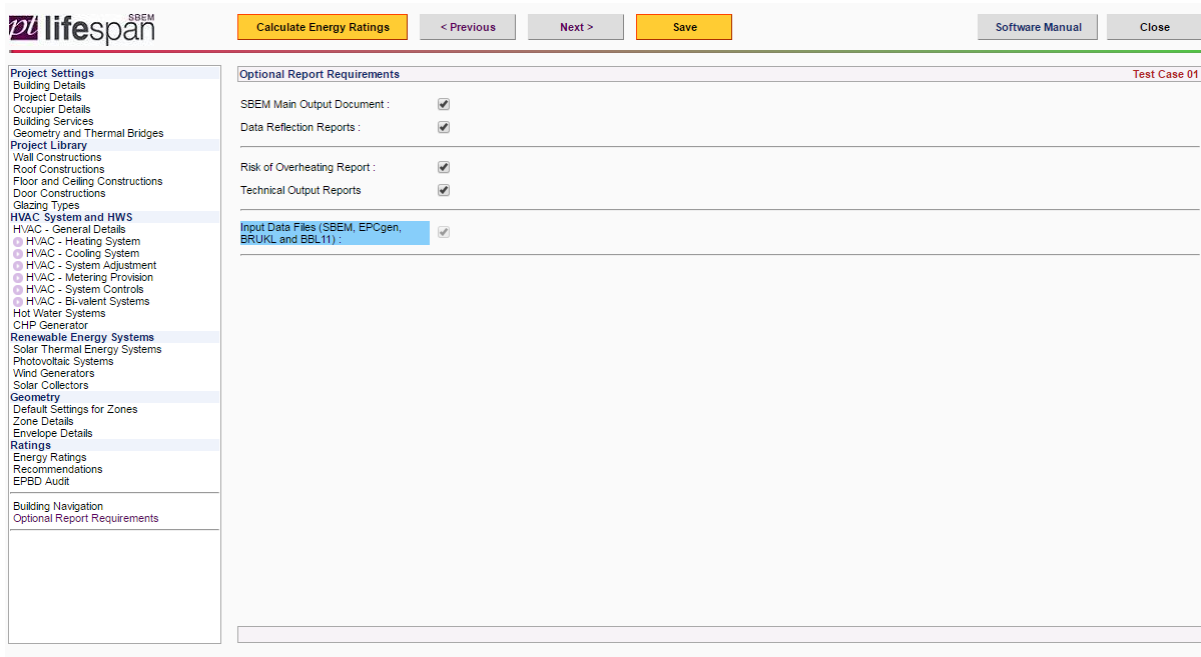
Object Details

Make Floor Area Same as Zone Area

Unassigned Zones = 0 Zones with Bad Area Checksum = 0 Zones Missing Envelopes = 0

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).



The screenshot shows the Lifespan SBEM software interface. At the top, there are buttons for 'Calculate Energy Ratings', '< Previous', 'Next >', and 'Save'. On the right, there are buttons for 'Software Manual' and 'Close'. The main window is divided into a left sidebar and a main content area.

Left Sidebar (Navigation Menu):

- 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

Main Content Area (Optional Report Requirements):

Optional Report Requirements Test Case 01

SBEM Main Output Document :

Data Reflection Reports :

Risk of Overheating Report :

Technical Output Reports :

Input Data Files (SBEM, EPCgen, BRUKL and BBL11) :

ADDRESS SEARCH

Use this page to search for an address

Use this form to enter details about an address you are looking for.

Building Name / Number:

Post Code: **I don't have a postcode**

Search using:

[Find Address](#)

I have the base UPRN for an address

Use this link if you wish to view an address using its base UPRN number.

[Click here to add a new base address to the database](#)

Use this link if you cannot find your address.

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.

Address Details

Below is the address, including re either the base UPRN or a refinem UPRN.

Base UPRN	83464465
Address	Property Tectonics Heywood Hall, B Pendlebury, nton
Post Town	MANCHESTER
Post Code	M27 8UX

[Click here if you want to add an address refinement to the database](#)

Once the correct address has been returned, click on the UPRN. This will drop the address into the project. Please ensure that the address is as you would like as this is as it will be displayed on the certificate. No amendments can be made once your EPC is lodged

If you would like to add a line to the top of the address (e.g. a building part such as 'Unit 1' etc) click on this link

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