

# A quick tour of iSAP

## cSAP - Consultation SAP

Developed by BRE on behalf of DECC.



[Home](#)

Home

My Projects

New Project

Downloads

FAQs

Click here to view your projects...

### Welcome back to cSAP cSAP Software

#### First time using cSAP?

Have a look at the [quick tour guide](#) before you get started.

This consultation seeks views on proposed changes to the Standard Assessment Procedure, the government's tool for assessing the energy and environmental performance of dwellings.

SAP is used to underpin the delivery of a  
including:

- the Building Regulations for England and Wales

#### This guide includes:

- Navigating the interface
- Creating a project
- Adding and deleting objects
- Entering data
- Help and validation features
- Running the calculation
- Results format

# My Projects

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[Home](#)

[Home](#)

[My Projects](#)

[New Project](#)

[Downloads](#)

To open a project, simply click on it's name to view the details

Want another project?  
Create new projects  
on this page

### Your projects on iSAP cSAP software

Your current projects are listed below. Choose (by clicking on the name) any project you wish to open.

To create a new project, follow the link from the menu on the left.

To change the version of SAP that you are using please use the following selector:

Active version:  [Change Version](#)

Number of projects: 4

#### Name of project

[Typical detached house](#)  
Address: Test Street, , ,

[Project 1 test](#)  
Address: , , ,

[Project 2 test](#)  
Address: , , ,

This shows you  
the version of SAP  
you are using

Delete?

[Delete](#)

[Delete](#)

[Delete](#)

Careful! This  
button will  
permanently  
delete a  
project

# New Project

The screenshot shows the 'cSAP - Consultation SAP' web interface. The header includes the title 'cSAP - Consultation SAP' and the text 'Developed by BRE on behalf of DECC.' along with the SAP logo. A left sidebar contains navigation buttons for 'Home', 'My Projects', 'New Project', 'Downloads', and 'FAQs'. The main content area is titled 'Create a Project cSAP software' and is divided into two sections: 'New project' and 'Duplicate an existing project'. The 'New project' section has a text input field for 'Enter project name:' and a 'Create' button. The 'Duplicate an existing project' section has a dropdown menu for 'Select project:' (currently showing 'Typical detached house'), a text input field for 'Enter project name:', and a 'Duplicate' button. A footer note states: 'You are currently working with projects for sap2016 calculations. To change version use the My Projects tab.' Annotations in yellow boxes with arrows point to the 'Create' button, the 'Duplicate' button, the 'Enter project name:' field in the 'New project' section, and the footer note.

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Home

Home

My Projects

New Project

Downloads

FAQs

### Create a Project cSAP software

#### New project

Enter project name:

Create

#### Duplicate an existing project

Select project:

Enter project name:

Duplicate

ⓘ You are currently working with projects for **sap2016** calculations. To change version use the My Projects tab.

Click here to create a project from scratch...

...or here to copy a project you already have

Don't forget to give your project a name!

Note: this footer will remind you which calculation version you are using (to switch just go back to the My Projects tab)

# Current Project

Good to know: iSAP is dynamic! It will save all your inputs as you define them (no need to click save!)

The screenshot displays the iSAP software interface. On the left, a tree view under 'Current Project' lists building components: Door, Window, Building Part, Thermal Bridge1, Roof / Ceiling, Wall, Wall Opening, Wall Opening2, Floor, Main Heating, Water Heating, Ventilation, and Lighting. The 'Main Heating' item is highlighted. Below the tree are links for 'Index Numbers Help', 'Product Characteristics Database (PCDB)', 'Home', and 'My Projects'. The main area has tabs for 'General', 'Geometry', 'Heating Systems', 'Ventilation & AC', 'Renewables', and 'Results'. The 'General' tab is active, showing 'Project details' and 'Dwelling Location' sections. The 'Project details' section includes fields for Project name (Typical detached house), Address Line 1 (Test Street), Address Line 2, Address Line 3, Post Town, Post Code, Country (England), Weather Region (South East England), and Is dwelling in smoke control area? (no). The 'Dwelling Configuration' section includes dropdowns for Type of analysis (new dwelling), Built form (House), Detachment (Detached), and Stage of analysis (As designed).

This box shows you everything currently in your project...

...click on any object to view the details

Related inputs are grouped into sections

A project always opens with the general information first

You enter all the project details in the boxes

# Adding objects

Remember! Use this box to navigate to objects already in your project

Use these tabs if you want to add new objects

**Current Project**

- Typical detached house
  - Door
  - Window
- Building Part
  - Thermal Bridge1
  - Roof / Ceiling
  - Wall
    - Wall Opening
    - Wall Opening2
  - Floor
- Main Heating
- Water Heating
  - Solar Thermal
- Ventilation
- Lighting

**General** **Geometry** **Heating Systems** **Ventilation & AC** **Renewables** **Results**

**Project details**  
**Renewables**

**Add new:**

- Solar Thermal  Maximum reached.
- Photovoltaic
- Wind Turbine
- Special Feature

sap2016 calculations. To change version use the My

Use the buttons to add objects to your project (you will be prompted to give each object a name)

If an object cannot be added, then the Add button will be disabled

Note: some essential objects will always be added when you first create a project

# Add and delete objects

The screenshot shows a software interface with a project tree on the left and a main panel on the right. The project tree is titled 'Current Project' and contains a hierarchy: 'Typical detached house' -> 'Door' -> 'Window' -> 'Building Part' -> 'Thermal Bridge1' -> 'Roof / Ceiling' -> 'Wall' (highlighted) -> 'Wall Opening' and 'Wall Opening2'. The main panel has tabs for 'General', 'Geometry', 'Heat', 'Renewables', and 'Results'. The 'Geometry' tab is active, showing 'Project details' and 'Geometry'. A 'Wall' object is selected, with a 'Select instance:' dropdown menu showing 'Wall'. Below this, there are 'Add' and 'Delete' buttons. The 'Add' button is highlighted, and an arrow points to it from a callout box. The 'Delete' button is also highlighted, and an arrow points to it from another callout box. The main panel also displays properties for the selected 'Wall' object: Area (180 m<sup>2</sup>), Thermal transmittance (U-value) (0.13 W/m<sup>2</sup>K), Effective thermal capacity (kappa-m) (100 kJ/m<sup>2</sup>K), and a 'Wall Opening' section with an 'Add' button. Callout boxes provide instructions: 'You can add similar objects to the one you are viewing...' points to the 'Add' button; 'You can select another object instance to view from this list' points to the 'Select instance:' dropdown; '...Or delete the current object' points to the 'Delete' button; 'Child objects can also be added from the parent page' points to the 'Add' button in the 'Wall Opening' section; and 'This shows you all the grouping and levels of current objects' points to the project tree.

**Current Project**

- Typical detached house
  - Door
  - Window
  - Building Part
    - Thermal Bridge1
    - Roof / Ceiling
    - Wall
      - Wall Opening
      - Wall Opening2
  - Ventilation
  - Lighting

**Project details**

**Geometry**

Wall

Select instance: Wall

Add Delete

Wall

Wall

exposed

cavity wall filled

Area ⓘ 180 m<sup>2</sup>

Thermal transmittance (U-value) 0.13 W/m<sup>2</sup>K

Effective thermal capacity (kappa-m) ⓘ 100 kJ/m<sup>2</sup>K

Wall Opening

Add

You can add similar objects to the one you are viewing...

You can select another object instance to view from this list

...Or delete the current object

Child objects can also be added from the parent page

This shows you all the grouping and levels of current objects

Note: your project tree will instantly update as you add and delete objects

# Enter data

For each question, enter data or select an option from the list, as you do the rest of the page will update to what is applicable

- Wall
  - Wall Opening
  - Wall Opening2
- Floor
- Main Heating
- Water Heating**
- Ventilation
- Lighting

## PCDB Index Numbers Help

[Product Characteristics Database \(PCDB\)](#)

Tip: It is recommended that questions are answered in the order they appear on each page

**General** **Geometry** **Heating Systems** **Ventilation & AC** **Renewables** **Results**

### Project details

#### Heating Systems

##### Water Heating

**General**

Name	Water Heating
Category	Electric immersion
System Type	Electric immersion
Fuel Type	Electricity
Efficiency data source	from manufacturer declaration
Heating efficiency	110 % <b>Value fails range check.</b>
Immersion type	single immersion
Tick if heat pump assisted by immersion	<input type="checkbox"/>
Number of baths in property	1

**Thermal Store and CPSU** ⓘ

**Water store** ⓘ

Tick if hot water storage cylinder	<input type="checkbox"/>
Store size	180 litres

Inputs with only one option are displayed in grey

Inputs that are invalid will flag an error message (these values will not be saved)

Questions which are not applicable will be hidden (sometimes for a whole group)

# Help with inputs

The screenshot shows a web-based interface for configuring heating systems. On the left, a 'Current Project' sidebar lists building components like 'Door', 'Window', 'Thermal Bridge1', 'Roof / Ceiling', 'Wall', 'Floor', 'Main Heating', 'Water Heating', 'Ventilation', and 'Lighting'. Below this is a 'PCDB Index Numbers Help' section with a link to the 'Product Characteristics Database (PCDB)' and a 'Home' button. The main content area has tabs for 'General', 'Geometry', 'Heating Systems', 'Ventilation & AC', 'Renewables', and 'Results'. The 'Heating Systems' tab is active, showing 'Project details' for 'Main Heating'. A 'Select instance:' dropdown is set to 'Main Heating' with 'Add' and 'Delete' buttons. The 'General' section includes fields for 'Name' (Main Heating), 'boiler with radiators or underfloor heating', 'Gas boilers', and 'Gas (including LPG) boiler 1998 or later'. A 'Fraction of heated space served by this system' field is set to '1'. The 'Data Source' is 'from database'. The 'PCDB index number' field is empty and highlighted with a blue border. A 'System description' section includes 'Heat emitter', 'Tick if condensing boiler' (checked), 'Heat distribution for condensing boiler' (flow temperature 55C or higher), and 'Central heating pump' (2013 or later). Annotations include: a callout box pointing to an information icon (i) in the 'Fraction of heated space served' field with the text 'For more information on a question hover over the question mark symbol to read the help text box'; a callout box pointing to the blue-bordered 'PCDB index number' field with the text 'Input fields with a blue border mean they are required for you to run the calculation'; a callout box pointing to the 'PCDB index number' field with the text 'Product index number from PCDB is always six digits (with leading zeroes if necessary). Use link in menu on the left to access PCDB, search for product, and copy over its index number.'; and a callout box at the bottom left pointing to the 'PCDB Index Numbers Help' section with the text 'Additional help also appears in these links'.

# Checking inputs

When you finish defining your project, click on the results tab

The screenshot shows a software interface with a navigation bar at the top containing tabs for 'General', 'Geometry', 'Heating Systems', 'Ventilation & AC', 'Renewables', and 'Results'. The 'Results' tab is selected and highlighted in yellow. On the left, a tree view under 'Current Project' shows a hierarchy: 'Typical detached house' -> 'Door', 'Window', 'Building Part' -> 'Thermal Bridge1', 'Roof / Ceiling', 'Wall' -> 'Wall Opening', 'Wall Opening2', and 'Lighting'. The main content area is titled 'Project details Results' and contains a blue error message box. The message states: 'Some required fields have not been entered, or data entered is invalid. Please check inputs for the following: - Boiler-Index-Number is required (Main Heating) Heating-Eff is required (Water Heating)'. Below the message is a 'Calculate' button. At the bottom, a note reads: 'You are currently working with projects use the My Projects tab.' Two callout boxes provide instructions: one points to the error message with the text 'If there are any errors you will not be able to run the calculation until they are corrected', and another points to the text '(Main Heating)' and '(Water Heating)' with the text 'The part in brackets tells you which pages to go back and check to fix the problem'.

If there are any errors you will not be able to run the calculation until they are corrected

The part in brackets tells you which pages to go back and check to fix the problem

# Calculation

The screenshot displays a software interface with a navigation menu on the left and a main content area on the right. The navigation menu, titled 'Current Project', lists a hierarchy: 'Typical detached house' (with sub-items 'Door' and 'Window'), 'Building Part' (with sub-items 'Thermal Bridge1', 'Roof / Ceiling', and 'Wall'), and 'Wall' (with sub-items 'Wall Opening' and 'Wall Opening2'). The main content area has a top navigation bar with tabs: 'General', 'Geometry', 'Heating Systems', 'Ventilation & AC', 'Renewables', and 'Results'. The 'Results' tab is active, showing 'Project details Results'. A blue message box states: 'You have successfully completed the data entry for this project. You can now proceed to run the **sap2016** analysis:'. Below this message is a yellow 'Calculate' button. A yellow callout box with an arrow pointing to the 'Calculate' button contains the text: 'When a project has been defined without errors, you can run the calculation to see the results'. At the bottom of the interface, there is a note: 'You are currently working with projects for **sap2016** calculations. To change version use the My projects tab.'

**Current Project**

- Typical detached house
  - Door
  - Window
- Building Part
  - Thermal Bridge1
  - Roof / Ceiling
  - Wall
    - Wall Opening
    - Wall Opening2

**General** **Geometry** **Heating Systems** **Ventilation & AC** **Renewables** **Results**

### Project details Results

**Results**

You have successfully completed the data entry for this project.

You can now proceed to run the **sap2016** analysis:

**Calculate**

When a project has been defined without errors, you can run the calculation to see the results

You are currently working with projects for **sap2016** calculations. To change version use the My projects tab.

# Results

Home

My Projects

New Project

Downloads

FAQs

Click here to go back and make changes to your project

## Project Results cSAP software

[Back to Project details](#)

### Summary

Dwelling Emission Rate, kgCO <sub>2</sub> /m <sup>2</sup> .annum:	<b>20.44</b> (DER)	Pass
Target Emission Rate, kgCO <sub>2</sub> /m <sup>2</sup> .annum:	<b>22.06</b> (TER)	
Dwelling Fabric Energy Efficiency, kWh/m <sup>2</sup> .annum:	<b>55.2</b> (DFEE)	Pass
Target Fabric Energy Efficiency, kWh/m <sup>2</sup> .annum:	<b>75.05</b> (TFEE)	
SAP Rating:	<b>80</b>	
SAP Band:	<b>C</b>	
<b>Likelihood of overheating:</b>		
June	<b>High</b>	
July	<b>High</b>	
August	<b>High</b>	

This part gives a summary of the main results

### Calculation details

	Energy consumed (kWh/year)		CO <sub>2</sub> emissions (kg/year)	
	Actual	Notional	Actual	Notional
Space heating	4471	4989	930	1038
Water heating	2783	2752	579	573
Electric showers	0	0	0	0
Cooling	0	0	0	0
Pumps and fans	75	75	30	30
Lighting	244	314	97	125
Special features	0	0	0	0
<b>Total</b>	<b>7572</b>	<b>8130</b>	<b>1635</b>	<b>1765</b>

View a break down of the results here