JPATL SAP 9.92 and EPC training course for On-Construction Domestic Energy Assessors

A comprehensive course, which considers the background to SAP assessments (EPBD and Building Regulations), SAP 2012 and supporting U-value calculations, and all the data gathering and data entry requirements of SAP 2012. JPA Designer SAP module is the recommended option for delegates who intend to complete the DipOCEA qualification assessment and examination with one of our accreditation partners.

This course is designed to familiarise you with using the JPA Designer software and to equip you for the more complex part of carrying out SAP assessments, that is, gathering the input data and interpreting the results. The course will prepare you for the assessments and examination for the ABBE Certificate for On-construction Energy Assessors.

The JPATL SAP 9.92 and EPC training course for On-Construction Domestic Energy Assessors is divided into twenty-two separate sections (modules). These modules can be done in as many 'sittings' as you want and can be revisited if required. All modules include links to a series of relevant resources, covering manuals (in PDF format), video files (in both Quicktime and WMV formats), calculation examples, links to external websites and Self Assessment quizes.

The modules

1. Introduction

Outlines the scope of the training course, guides you through the process of installing the JPA Designer software and describes how to create, change and save SAP and U-value calculations.

2. Understanding the Building Regulations

Examines the Building Regulations and other regulations which form the framework for carrying out SAP calculations and lodging EPCs. It considers the European Union's Energy Performance of Buildings Directive (which is one of the main drivers of the latest changes in the regulations), the Building Regulations in England and Wales and Building Standards in Scotland. Finally, it examines other regulations and codes which will also require energy performance calculations.

3. The principles of U-value calculations for common domestic constructions

U-values are a measure of heat loss through building fabric, and as such are an important part of SAP calculations. Modules three, four and five explains how to calculate U-values for floor, wall and roof constructions commonly found in dwellings.

This module introduces the principles of heat loss through the fabric and describes the combined method for calculating U-values. Modules four and five describe how to carry out U-value calculations using JPA Designer.

4. Calculating U-values with JPA Designer

Explains how to use the JPA Designer U-value module to calculate U-values for walls and roofs. It describes the settings for the whole calculation, how to build up the construction and how to enter details of repeating thermal bridges.

5. U-value correction factors and more complex calculations

Explains how to allow for the effects of mechanical fastenings and air gaps in U-value calculations and to carry out U-value calculations for ground floors and light steel frame constructions.

6. Thermal mass: calculating kappa-values

The thermal mass of the building fabric now plays a significant part in determining the energy required to heat a dwelling. The thermal mass of an element is described by its kappa-value; this module explains how kappa-values should be calculated in order to use them in SAP calculations.

7. An overview of SAP

Introduces the SAP methodology and gives a short account of its background, data gathering for SAP and the outputs from the SAP calculation.

8. The JPA Designer SAP 9.92 module

Describes the JPA Designer SAP 2012 module and explains the general settings for the dwelling.

9. Dwelling dimensions and orientation

Describes how to measure and enter the basic dimensions of the dwelling to determine the dwelling's floor area and volume. It explains what should, and should not be counted as part of the dwelling and sets out the principles for defining the dwelling living area and its orientation.

10. Lighting

Explains how SAP 2012 calculates the energy required for lighting and the effect on energy demand of low energy lighting units.

11. Ventilation

Describes how SAP 2012 addresses the effect of air infiltration and ventilation; it considers air permeability, shelter of the dwelling and possible ventilation strategies. The module explains how to gather and input ventilation data, and how to use the Product Characteristics Database to specify mechanical ventilation systems.

12. Opaque fabric: walls, roofs and floors

Describes how to measure the walls, floors and roofs of the dwelling in order to account for heat loss through those elements, and to assess the thermal mass of the structure.

13. Opaque fabric: junctions

Explains how SAP 2012 allows for the effect of linear thermal bridging at junctions between elements, and between elements and components such as windows and doors. It describes the sources of data and how to enter the data into the JPA Designer SAP module.

14. Openings: windows, doors and rooflights

Describes how to gather and enter data for the openings in dwelling, in order to assess heat loss, solar gain in winter and daylight.

15. Domestic hot water

Describes how to specify the domestic hot water system for the dwelling.

16. Space heating

Describes how main and secondary heating systems are treated in SAP and describes how to specify different types of heating systems, heat sources and heating controls, for both individual heating systems and community heating schemes. It considers the main sources of efficiency data, including the Product Characteristics Database.

17. Overheating and cooling

Explains the procedure for assessing the risk of summer overheating within dwellings, as a result of solar gain raising internal temperatures, in order to test for compliance with criterion 3 of Approved Document L1A. The module also explains how to enter data for space cooling systems in dwellings.

18. Renewable energy and new technologies

Describes how SAP deals with renewable energy generation from photovoltaics, wind turbines and small scale hydro-electric generation. It also covers the Appendix Q procedure for entering the details of new technologies into SAP calculations.

19. Buildings containing multiple dwellings

The comparative TER/DER compliance method often presents a problem for mid-floor flats and mid-terrace houses.

This module explains the cause of the problem and demonstrates how the to demonstrate compliance using the multiple-dwellings calculation in JPA Designer. The module also gives you further practice in carrying out SAP calculations.

20. Fuels and emission factors

Explains how fuel costs and emission factors are used in SAP and compliance calculations.

21. Calculation results

Describes how to print, or create PDFs of, the results of SAP calculations, for submission to the building control body or for clients. It also reinforces your understanding of the calculation process with a further sample calculation.

22. Energy Performance Certificates

Describes the content and format of Energy Performance Certificates for new dwellings in England and Wales.