



GREATER
LONDON
AUTHORITY

CONTRACTORS: ARE YOU READY FOR PAS 2035? **FREE RETROFIT COORDINATION** **AND RISK MANAGEMENT COURSE**

- Become a fully qualified Retrofit Coordinator to deliver PAS 2035 compliant projects
- Be able to deliver retrofit projects covered by the Each Home Counts Quality Mark
- First pilot courses 100% funded
- Six days of intensive learning
- Successful graduates will gain the Open College Network West Midlands Level 5 Diploma in Retrofit Coordination and Risk Management



Key Information

Target audience: Site Manager, Contract Managers, Assistant Contract Managers and others employed by contracting firms involved in domestic refurbishment work.

Total Time Requirement: approx. 60 hours

Pilot Course Dates

20th - 21st September

27th – 28th September

15th – 16th October

Venue: Federation of Master Builders, London

To apply for your FREE place contact David Pierpoint:
david@osmosisconsult.com, 07714 742 661 no later than 31st July



QUALIFICATION OVERVIEW

Module 1: Introduction to Domestic Retrofit

Unit 1.1: Background and Context

The twin challenges of climate change and fuel poverty | UK Domestic sector greenhouse gas emissions | The UK domestic building stock | Typical domestic energy use and emissions | Domestic retrofit targets and standards | Retrofit trigger points | Incremental and whole-house approaches | The fabric first approach

Unit 1.2: Quality Assurance and Risk Management

The retrofit process | Common retrofit failures | Concentrate on the interfaces | The Measures Interaction Matrix | The *Each Home Counts* review | The Quality Mark, the Code of Conduct and the Customer Charter | The BSI retrofit standards framework | PAS 2035 and PAS 2030 | The MCS standards | The roles of the Retrofit Project Manager and the Retrofit Coordinator

Module 2: Building Physics

Unit 2.1: Thermal Efficiency

Heat transfer | Fabric heat losses | Thermal conductivity | Thermal transmittance (U value) | Thermal bridging | Thermal by-pass | Ventilation heat loss | Heat gains | Thermal capacity | Heat balance | The Passive House EnerPHit principles for achieving energy efficiency in retrofit

Unit 2.2: Managing Moisture Risk

Moisture states | Mechanisms of moisture transfer | Sources of moisture in buildings | Hygrothermal properties of building materials | Vapour balanced construction | Managing moisture risk in buildings | Moisture analysis methods | Standards and techniques for moisture control | Analysing complex moisture interactions

Module 3: Assessing Dwellings for Retrofit

Unit 3.1: Assessing Existing Dwellings

The scope of whole-house dwelling assessments | Planning and heritage constraints | Local context | Identifying vulnerable households and individuals | Identifying vulnerable buildings | Assessing the building envelope | Assessing the building services | Assessing existing ventilation | Assessing occupancy

| Identifying pre-retrofit repairs | Identifying inappropriate improvements | Methods for assessing energy performance: SAP and PHPP | Reporting assessments | Training and qualifications for assessors

Unit 3.2. Improvement Option Evaluation and Medium-Term Retrofit Plans

Evaluating improvement options: simple payback and carbon cost effectiveness | Interactions between measures | Using SAP and PHPP for improvement option evaluation | Ranking and prioritising measures | Identifying compatible and incompatible measures | The Measures Interaction Matrix | Identifying critical ventilation upgrades | Identifying relevant retrofit funding schemes | Establishing medium-term whole-house improvement plans | Preserving future improvement options | Reporting improvement option evaluation

QUALIFICATION OVERVIEW

Module 4: Improving the Building Fabric

Unit 4.1: Floors and Roofs

Planning and heritage considerations when insulating floors and roofs | Floor and roof insulation materials and products | Improving the insulation and air tightness of solid and suspended floors | Emerging techniques for insulating suspended floors | Improving the insulation and air tightness of pitched roofs | Improving the insulation and air tightness of flat roofs | Identifying, modelling and minimising thermal bridges | Eliminating thermal by-pass | Managing moisture risk | Identifying and specifying critical construction details

Unit 4.2: Walls and Windows

Planning and heritage considerations when insulating walls | Technical constraints, advantages and disadvantages of wall insulation options | Wall insulation materials and products | Cavity wall insulation (CWI) | Dealing with 'hard to treat' cavity walls | Internal solid wall insulation (IWI) | External solid wall insulation (EWI) | Secondary glazing | Window replacement | Identifying, modelling and minimising thermal bridges | Eliminating thermal by-pass | Managing moisture risk | Identifying and specifying critical construction details

Module 5: Improving Air-tightness and Ventilation

The critical role of ventilation | Build tight, ventilate right | The effects of age and construction type on air-tightness | common air leakage paths | Indoor air pollutants | Fresh air requirements | Maintaining internal air quality | Overheating mechanisms and mitigation techniques | Existing ventilation systems | Ventilation options for retrofit | Emerging ventilation techniques | The PAS 2035 ventilation assessment | The PAS 2035 minimum ventilation requirements

Module 6: Improving Building Services

Unit 6.1: Heating, Hot Water, Lighting and Power

Considerations for improving existing heating and hot water systems or installing new systems | Efficiency and responsiveness | Comparison of pay-back from heating and fabric measures | Comparison of costs and performance of heating and hot water options | Gas-fired central heating and controls | Combi boilers | Thermal stores | Flue gas heat recovery | Electric heating | Ground- and air-source heat pumps | Wood-fired heating | Lighting | Energy efficient appliances

Unit 6.2: Renewable Energy Systems

Integrating renewable energy systems using the fabric first approach | Using renewable technologies to 'top up' performance to meet emissions targets | Solar photovoltaic systems | Solar thermal systems | Wind power | Micro-CHP | The Feed-in Tariff | The Renewable Heat Incentive

Module 7: Post-Retrofit Testing, Monitoring and Evaluation

The value of monitoring and evaluation | Feeding-back to improve standards, materials, products and processes | Pre- and post-completion test: fan pressurisation testing and thermography | Post-construction reviews | Post-occupancy evaluation | Basic monitoring of fuel use and internal conditions | Advanced monitoring | Permanent monitoring systems: smart meters and smart heating controllers | Analysing and presenting monitored performance data.

