OUR TRAININGS AND COURSES

TITLE OF COURSE – **Autonomous House** (Net-Zero Energy House)

This 2- day course about Autonomous House (AH) provides an understanding of passive building highest technical and functional standards with reduced operationg costs by 85%)

DURATION 2 DAYS (16 hours)

Day 1

- Regulations of Article. 9 of Directive 2010/31/EU home of nearly zero energy demand.
- Architecture designs of net –zero energy houses
- Verifying of energy balance (PHPP programme)
- Construction condtitions (modern building components allowing to minimize thermal bridges and partitions. High durability and thermal accumulation, low radioactivity, high resistance of biological corrosion, optimal vapor permeability)
- Insulation (warm and thermal insulation of walls and roof according to a insulation index)

- Installations (functional, reliabe and comfortable based on renewable energy sources like photovoltaics installation and mechanical ventilation system)

Day 2

- Intelligent Building Mamagment Systems – (control and monitor the operation of buildings form anywhere in the world)
- Technical and funcional standars of AN (reduction of operating costs by 85%)
- Ecological aspects od passive constructions (healthy house with low emissivity and radioactivity)
- Certification of net –zero houses (confirmed by the air tightness and Passive House Institute in Darmstadt certificate)

TITLE OF COURSE - **HEAT PUMPS**

DURATION 3 DAYS (24 hours)

GROUPS: MAXIMUM 15 PERSONS

This course has been designed for Heating and Plumbing engineers to provide the necessary skills for the design, installation, testing, commissioning, handover, servicing and faultfinding of ground and air source heat pump systems in accordance with the latest NOS/QCF criteria and MCS scheme requirements.

Day 1

- Fundamental working principles of heat pump systems
- Fundamental requirements of building location/building features for the potential to install heat pump systems
- Regulatory requirements
- Typical advantages and disadvantages of heat pump systems
- Health and safety risks and safe systems of work
- Requirements of relevant regulations/standards relating to practical installation, testing and commissioning activities for heat pump installation work

Day 2

- Fundamental principles of heat pump selection and system design
- Fundamental design principles for ground source ‘closed loop’ heat pump collector circuit design and component sizing
- Layouts of ‘open loop’ water-filled heat pump collector circuits
- Fundamental air source heat pump design considerations
- Preparatory work required for heat pump installations
- Installation, testing, commissioning and handover requirements
- Planning and preparation for the installation of heat pumps (non-refrigerant circuits)
- Requirements for routine service and maintenance
- Diagnosing and rectifying faults

Day 3

- Heat loss design calculations for domestic dwellings
- Calculation of hot water requirements and determination of storage vessel sizing
- Improving insulation levels to minimise heat loss through building fabric and optimised heat pump choices
- Calculating energy output from traditional radiators to take into account the lower level of energy generated by heat pumps
- Practical assessment

TITLE OF COURSE **SOLAR PHOTOVOLTAIC** (PV)

DURATION 3 DAYS (24 hours)

GROUPS: MAXIMUM 15 PERSONS

This 3 day course in Solar Photovoltaic (PV) provides an understanding of PV systems with a view to applying for Competent Persons, Micro-Generation Scheme and/or Green Deal registration. The course is designed in accordance with the latest NOS/QCF criteria and MCS scheme requirements to provide the necessary skills for the design, installation,testing, commissioning, handover, servicing and faultfinding of solar photovoltaic systems.

Day 1

- Environmental background
- Different types of solar PV technology
- Planning and preparation for the installation of PV

Day 2

- Design and specification of solar PV systems
- Working at heights
- Installation of solar PV systems
- Commissioning and testing systems
- Maintenance
- Government grants and funding bodies
- Requirements for routine service and maintenance

Day 3

- Practical assessment

TITLE OF COURSE **UNDERFLOOR HEATING**

DURATION 2 DAYS (16 hours)

GROUPS: MAXIMUM 15 PERSONS

The Underfloor Heating course is designed for Heating and Plumbing engineers to provide the necessary skills for the design, installation, testing, commissioning, handover, servicing and faultfinding of underfloor heating systems in accordance with regulatory requirements and industry best practice.

Day 1

- Legislation
- Types of underfloor heating system
- Suitability of underfloor heatingsystem and flooring types
- Survey and design
- System design criteria

Day 2

- Health and safety issues
- Installation criteria and requirements
- Testing and commissioning
- System handover
- Service and maintenance

TITLE OF COURSE **SOLAR THERM HOT WATER**

DURATION 3 DAYS (24 hours)

GROUPS: MAXIMUM 15 PERSONS

This 3 day course is designed for plumbing and heating engineers to provide the necessary skills for the design, installation,testing, commissioning, handover, servicing and fault finding of solar thermal hot water systems in accordance with the latest NOS/QCF criteria and MCS scheme requirements.

Day 1

- Fundamental working principles
- Fundamental requirements of building location/building features
- Regulatory requirements
- Health and safety risks and safe systems of work
- Requirements of relevant regulations/standards relating to practical installation, testing and commissioning activities
- Types and layouts
- Purpose and operational characteristics of solar thermal hot water system components
- Types and key operating principles of solar collectors
- Information requirements to enable system component selection and sizing
- Measuring the performance of solarhot water systems

Day 2

- Preparatory work required for installations
- Requirements for connecting collector circuits to combination boiler domestic hot water circuits
- Requirements for installing pipework and solar collector arrays
- Requirements to test and commission solar thermal hot water system installations
- System handover requirements
- Planning and preparation for the installation of ‘active’ solar thermal hot water systems
- Installing components
- Testing, commissioning and handover of an ‘active’ solar thermal hot water system
- Requirements for routine service and maintenance
- Diagnosing and rectifying faults

Day 3

- Practical assessment

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