

Training workshop: **Energy efficiency A to Z**

ENERGY MANAGEMENT is primarily a technical discipline but through no fault of their own, many people working in the field lack some of the basic knowledge that would enable them to identify real opportunities and avoid pursuing projects that are actually of little or no value. This is without considering the prevalence of plausible-sounding but actually worthless or counter-productive products.

The course is designed for environmental managers, buildings and estates staff, bureau analysts, and anyone else who has come to energy management from a non-energy professional background or straight from college.

It combines presentations with exercises, discussion, physical demonstrations and other activities. Course material includes a reference handbook which explains key concepts and technologies, providing guidance on common things to look out for, survey tricks and tips, and suggestions for 'spend to save' interventions.



The course offers a chance to handle common energy surveying equipment. This group of trainees was snapped by one of their colleagues trying out a thermal imaging camera.

Course contents

The diversity of the subject matter, the inter-relationships between topics—and the blurred boundaries between some of them—make it all but impossible to structure the material in a single, logical sequence. Instead, the instructor approaches the material from 26 different directions through keywords beginning with each letter of the alphabet, from air-handling units through gross calorific value, motor-driven systems and voltage reduction to zone control. In this way valuable insights can be introduced right from the outset with significant generic opportunities continuing to appear throughout the day.

Some of the principal topics covered in this manner are:



- **Automatic control** and its central importance;
- **Combustion efficiency:** a widely-neglected opportunity which can often be exploited at no cost;
- **Compressed air;**
- **Energy balances:** particularly as a means of refuting bogus claims;
- **Heating and ventilation systems;**
- **Weather** and how to account for it;
- **Insulation:** the calculation of U-value;
- **Lighting:** including why lamp replacement alone may no longer be worth pursuing unless combined with improved controllability;
- **Motor-driven systems** including motor sizing and the benefits of speed control;
- **Refrigeration and air conditioning** including why its running costs may be too high and how to reduce the need for it;
- **Test equipment;**
- **Voltage reduction,** why it may not fulfil its promise and may even increase consumption;

The instructor's wide knowledge and the flexible approach to the delivery of the training makes it possible to cover other topics, or examine specifics in greater depth, if the class wants to do so.

Outcomes: by the end of the day, trainees will have become familiar with a number of important energy-saving themes whose importance they did not previously appreciate, or which they actually knew nothing about. They will understand better the limitations of certain common and fashionable interventions and should feel better able to spot false or exaggerated claims.

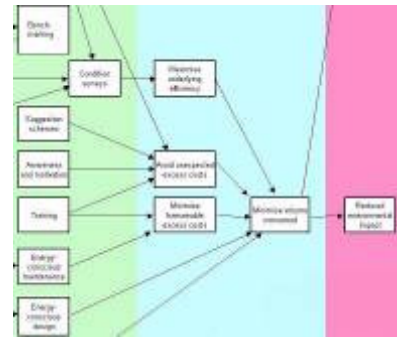
If a trainee feels these outcomes have not been achieved, we will cancel the invoice (or refund the price of the course if prepaid).

Prerequisites: all trainees should prepare by following our free custom-designed on-line basic science course, which takes about two hours to complete but can be done in small sections. This covers just those topics from school physics and chemistry which are essential for all energy-management staff, and is suitable for people with no prior knowledge of science.



Presenter: Vilnis Vesma MA(Oxon) CEng MEI CMVP CEM is a former local government energy manager. He is the author of Energy management principles and practice (BSI, 2009) and various government advisory booklets on energy management.

"Vilnis is an excellent trainer, who uses both theoretical and practical examples to give a wider and more in-depth understanding of energy management techniques" – N.P.



Part of a process map used to illustrate the interrelationship of energy management activities and the resources needed to support them

For dates, venues and rates please check the listings at www.vesma.com/training