

Zero Energy Houses



What will the house of the future look like?
Can we live without utility companies?
Can a house be an energy harvesting machine?
Can we improve our lifestyle and cut CO2 emissions.

Sustainable development means meeting “the needs of the present without compromising the ability of future generations to meet their own needs’ yet a quarter of Europe’s CO2 comes from the energy used to heat, light and operate homes.

Energy use can be measured in terms of cost, energy, or carbon emissions. Whatever measure is used we need to minimize energy consumption.

If applied correctly renewable energy technology can work – but only just. Incorporating passive energy technology has to have a fundamental influence on design.

This course is an **optional** course for those seeking the "Romania Green Building Professional" certification.

Location

Arhipro Arhitectura office. str. Iașilor, nr. 20, et. 2, Cluj-Napoca. Map is available here:
<http://www.arhip.ro/ro/contact/>

Agenda

9:00 am | Coffee and registration

9:30 am – 4:30 pm | Training *

* Lunch and Coffee Breaks will be provided.

The prices for attending this course

- RoGBC member | individual - 125 Euro
- Non-member | individual - 195 Euro

Trainer

Zero Energy Houses

Stephen Scrivens

Stephen Scrivens studied at the University of Bath and the University of Sheffield. He has lectured in Construction and Urban Landscape at the Universities of Bath, Manchester, Reading, Kingston, Greenwich and Wellington. He has made presentations to the UK Government on how to produce 500,000 low cost homes for London as well as the reuse of the Millennium Dome.

Stephen is a BREEAM assessor with a special interest in Renewable Energy and Zero Energy buildings. He has spent 20 years researching off-the-grid homes and has prepared designs for a number of houses that are currently going through the planning process in the UK.

Stephen has worked on over 150 building projects and designed the external works and atriums for fourteen corporate headquarters buildings including those of Anglo American, Sony, Proctor and Gamble, Canon, and Glaxo. He designed the public areas for a dozen shopping malls including Meadowhall (Sheffield), the Octagon Centre (High Wycombe), Vicarage Fields (Barking), Lakeside (West Thurrock), and the Metrocentre (Newcastle). He has masterplanned several business parks and won the Financial Times Business Park of the Year Award for Arlington Business Park at Theale amongst others. He has designed numerous atriums, water features and roof gardens.

He prepared value engineering and drawing coordination studies on office blocks for Trafalgar House and Prudential.

He planned and designed the external works for a number of large apartment projects in the UK. He was a member of the team that formulated the “Evolution” System for building low cost apartments.

Stephen has designed a number of storm water balancing and flood compensation schemes. He prepared the roofing details for the Hongkong Shanghai Banking Corporation Headquarters in Hong Kong. Since then he has detailed many roofs and produced briefing documents and articles on waterproofing systems.

Agenda

Zero Energy Houses

9:00 am – 9:30 am | Registration & Welcoming Coffee

9:30 am – 11:00 am | Training

- How can we capture and store the energy that we need from renewable sources - **heat** (biomass, solar and geothermal), **water** (tidal, hydro and wave action) and **wind**.
- Can every home generate and store the gas and electricity that its occupants need?
- LED lamps and computers run on 12V DC. Can a house operate on reduced voltage.
- Heat and coolth can be stored but what is best – water, stone, or phase change materials.
- Windows provide light and waste energy. How do we balance these conflicts?

11:00 am - 11:30 am | Coffee Break

11:30 am - 1:00 pm | Training

- A Passiv Hause offers comfort in summer and winter but beyond that we have to go to Super Insulation. What does this mean?
- Cutting heat loss means airtight construction which means heat recovery ventilation systems.
- Cooling usually means high electricity consumption but the future could be passive cooling (cooling ponds and ground tubes) and active solar cooling (absorption cooling, desiccant cooling, vapour compression cooling).
- Can solar chimneys and wind catchers provide ventilation instead of fans?
- How can we optimise water capture from a house?
- Can we make grey water technology really work.
- Can we make domestic appliances that work only using renewable energy

1:30 pm - 2:30 pm | Lunch

2:30 pm - 4:00 pm | Training

- Can we avoid using materials that are high in embodied energy
- How should the external envelope be finished - Living Walls and Cool Roofs.
- Can we reduce energy use in the construction phase?
- What lifestyle changes must we make to get the best from the house of the future.

4:00 pm - 4:30 pm | Discussions