

YOUR COMPLETE GUIDE TO EVERYTHING FOR A DIGITAL HOME

# Home

# SMART



## DIGITAL HOME MAKING

What's on offer for the selfbuilder?

**ECO HOUSE OF THE FUTURE**

**LUXURY IN THE BATHROOM**

**HISTORIC HOME GETS HI-TECH**

**+ PICK OF THE GADGETS**





# ECO HOUSE OF THE FUTURE

**R**ight from the word go, selfbuilder John Croft had big plans for his dream home in the Cotswolds. It took a few years in the planning process and a lot of patient research and work to make it the best he could. The results are not only stunning but are designed to last for over 200 years.

Built on the site of old industrial buildings, the first challenge was to design something that would cope with a valley sloping steeply to a stream at the bottom. While the isolation of natural waters seeping from the fissured rocky slopes of the valley sides was to





prove a massive technical hurdle, the location allowed John the opportunity to create a multi-level (seven in all) dwelling, with a third of the building underground, filled with natural light and unspoilt views of the delightful countryside just outside Cheltenham.

The building is designed to meet or exceed the highest environmental standards, whilst providing a beautiful and practical family home. It achieves better than the German Passivhaus standard for efficient energy, and with meticulous attention to detail, John has created an ultra-modern space filled with the best in environmental, security and entertainment technology, without sacrificing the stylish interiors that the family demanded.

## PV panels on an outside wall supply more electricity than the house uses, the surplus being fed back into the grid.

The 16,000ft<sup>2</sup> home has 19 separate zones for audio and video. In order to meet John's demands for clean lines, and quite literally no evidence of the technology in the house, installers JK Audio Visual of Telford introduced John to Amina, and their unique plastered over 'invisible' speakers.

Using the theory of natural musical instruments, which generate sound from tiny vibrations on the instrument itself, (as opposed to the pistonic nature of a conventional cone speaker) the Amina product is not only totally invisible once installed, but is effective at filling big spaces with an even level of sound – ideal for John's open-plan living areas.

Twenty-one Amina AIWX series invisible speakers were installed which compared favourably with the cost of installing the 76 conventional speakers required to create the equivalent sound quality.

Having sorted his audio requirements, John wanted to embrace the concept of 'cloud' IT which, in terms of multi-media



entertainment, means low cost subscription access to quite literally everything ever created on the planet. The alternative is to continually make large capital purchases to own a copy of the media, and still have a limited selection of what is available. By streaming data directly from the internet via his Apple iPad or iPhone through a Sonos wireless amplification and control system, John not only saved himself the capital cost of the media, and the not-inexpensive hardware to store it all on, but the iPad and iPhone also control the entire home entertainment system remotely without blighting walls with touch panels and switch bezels.

Environmentally, John demanded a 'positive energy'

design. PV panels on an outside wall supply more electricity than the house uses, the surplus being fed back into the grid, generating an estimated income of £3,500 per year. The house is lit entirely with energy efficient RGB based LED lamps which cost less and provide a warmer light than conventional white LEDs.

The house is not even connected to a mains water supply. Rainwater from the immense roof area is harvested and stored underground in giant tanks. A two tier vertical reed bed natural filtration system converts black and grey water into a fresh potable supply for drinking, washing and flushing.

All windows are triple-glazed, with U-values down to 0.7. The exterior wall is 50cm solid

stone and a further half metre of solid state of the art extruded waterproof insulation provides insulation values 65 per cent better than the best Passivhaus homes in Germany. The inner wall is deliberately constructed from dense concrete block which acts as a heat sink in summer and a heat source in winter, gradually absorbing and releasing energy as the seasons change. As a testament to the energy efficiency of this home, it is incredible to note that John's underfloor heating, powered from a ground source heat recovery system, was used for a total of only six days during the bitterly cold winter of 2009/2010, with the outside temperature plummeting down to -13°C for over three weeks.

Amina's truly invisible loudspeaker range brings a totally new dimension to whole house entertainment systems. Simply mount into a wall or ceiling and skim over with standard finishing plaster. Once dry, apply your chosen wall covering or paint finish. The result is unparalleled sound quality, evenly distributed throughout your home, totally invisible to you and your guests.

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