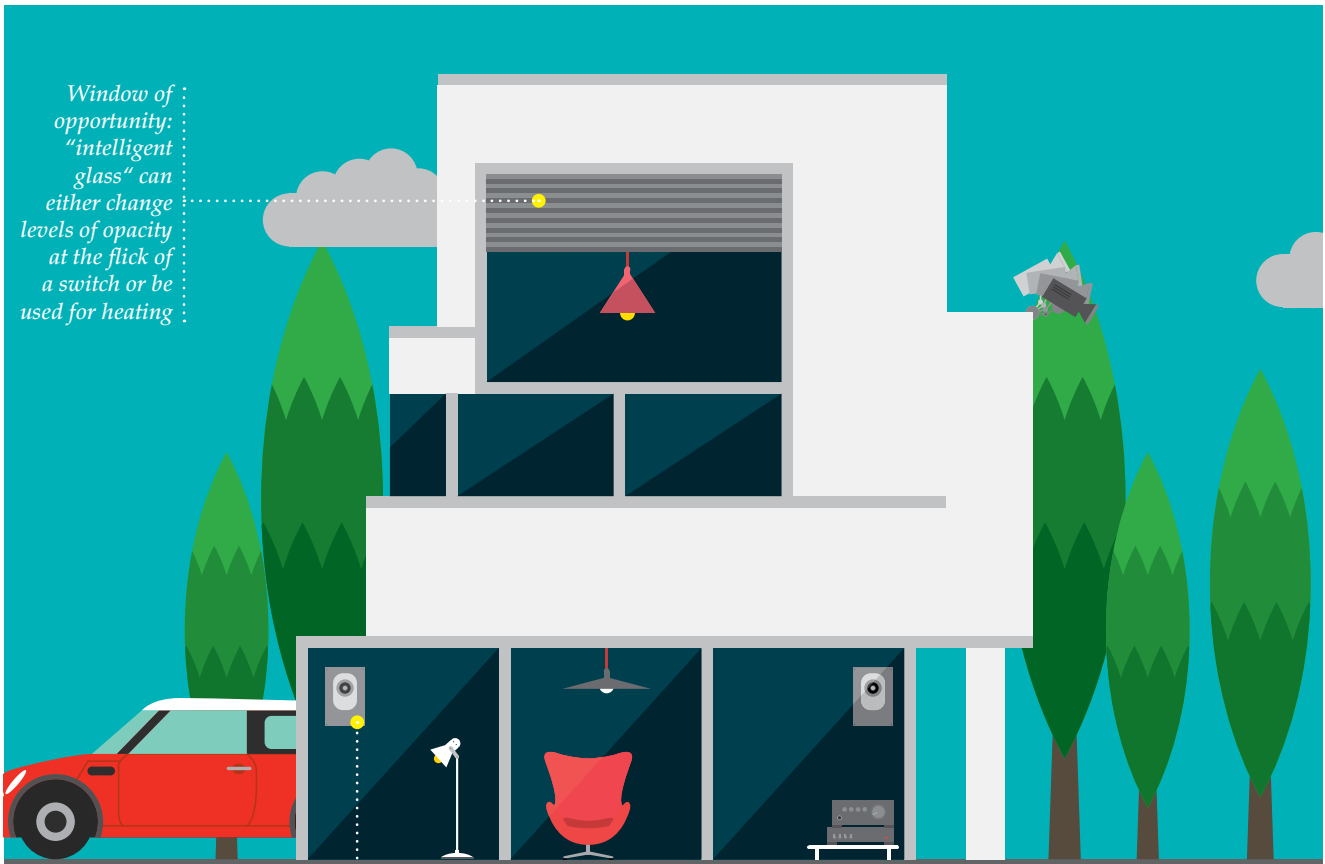


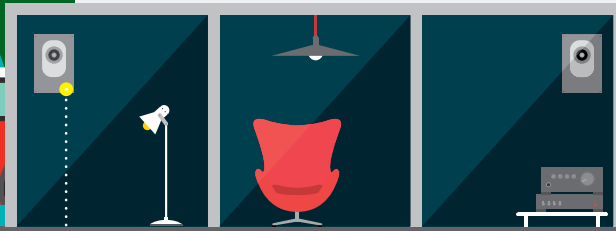
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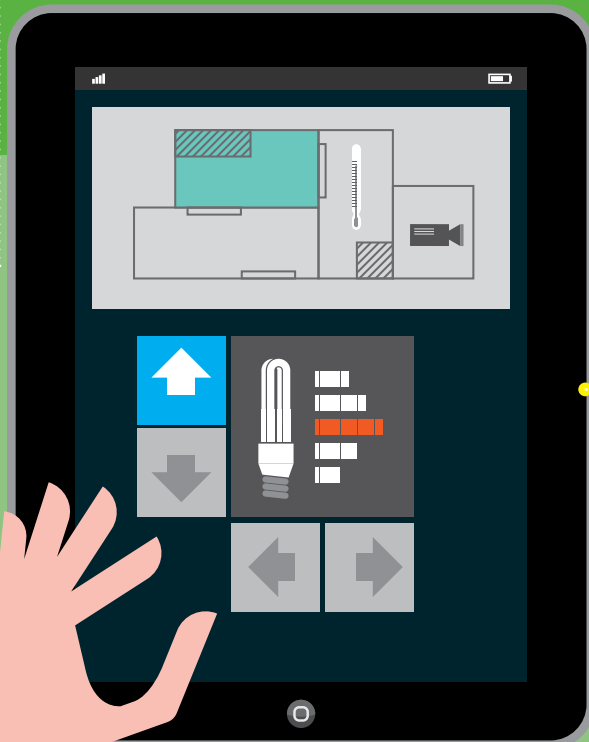
Window of opportunity: "intelligent glass" can either change levels of opacity at the flick of a switch or be used for heating



Sounds good, looks good: invisible speakers and silent air conditioning are futuristic features of modern households



Lights, cameras ... action: advances in technology mean almost any electrical device can be controlled via tablet



The smart home technology that sci-fi writers predicted would change our lives a generation ago is now materialising. PETER SWAIN dials in

ILLUSTRATION ROBERT HANSON

The dream of having all of our domestic gadgets and devices communicate with each other – and with us – has for decades been a mere fantasy, far beyond the reach of everyone except self-confessed techno-nerds who had the ability, and time, to construct their own homemade contraptions. But now, thanks to the KNX open standard, which has been adopted by manufacturers such as Philips, Panasonic and Siemens and used in major projects like Heathrow's Terminal 5, the Apple-based **Savant** home automation system (savantsystems.com), among others, can control almost any electrical device in the home – and do it remotely. So from an iPad on the way in from the airport, home climate control can be set, the oven turned on, mood music selected, a favourite DVD cued up and garage doors opened. Or when motion sensors are activated while the owner is on holiday, cameras can send pictures in real time over the internet to a monitoring service, or even direct to the owner's smartphone. All it needs is a black box and someone to install it all.

The beauty of the Apple Savant combination is, of course, the intuitive and elegant graphical user interface. Until recently it seemed only engineers or astronauts could operate these highly complex systems; now, if you can drive an iPad app, you're at the Savant races. "And later this year, we expect to deliver full voice control," says Craig Spinner of Savant. The home that does just what you tell it to do has arrived.

This technology is about more than convenience and control. Accurate, automated monitoring of heat and light sensors along with electricity-generating solar panels can lead to drastic reductions in energy use – in large commercial premises, savings of 30% are not unknown. Take traditional air conditioning, for example, which is noisy and expensive. By comparison, chilled ceilings developed by Swiss-based Barcol-Air (barcol-air.co.uk)

use a piped cold water system instead of forced air. Already installed in elite residential projects from Abu Dhabi to Zurich, the technique is more comfortable for residents, environmentally friendly and easy to program remotely. Plus, it's whisper-quiet.

"Intelligent glass" is another exemplar of a new technology that lends itself to home automation. Created by a number of manufacturers worldwide, including **Saint-Gobain** in France (saint-gobain.fr), heated glass has a thin and entirely invisible layer of metal oxide that warms up, giving out the same quality of heat as the sun. So, a window can become a radiator. "With these 'heated curtains' of glass, even in the depth of winter, there's no chill factor," says Peter Tigg of PTP Architects in London. "With no other radiators or heating grilles, these 'hot' new windows can heat an entire home." The same French company makes Priva-Lite, a laminated glass with a liquid crystal film that allows an instantaneous change between full transparency and different degrees of opacity. With major implications for security and privacy, one minute a window or shower screen is clear; the next, with a flick of a switch or a pre-programmed command, it's cloudy.

Whether in dry or wet rooms, smart domestic automation is complemented by minimalist design. Ergo, invisibility equals nirvana. Traditionally, audio speakers have been boxes on the wall, desk or floor. No more. Hidden by a thin layer of plaster to match the rest of the wall, or even by wood panelling, **Amina's** loudspeakers can be heard but not seen (amina.co.uk). Just 40mm thick when buried in the wall, they work by using an internal electronic tuning fork that creates a vibrating surface like that of a musical instrument. The system, used in Mandarin Oriental hotels worldwide, has now gone residential.

The future has arrived, and at least in the home, the good news is we can control it. ■

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