

## NEW BUILD, REFURBISHMENT OR RETRO-FIT

In Our Experience: what's possible & effective

As technology develops manufacturers are trying to make it easy to adopt their products and therefore many technical systems can be partially retro-fitted. Predominantly they do this using WiFi or other RF (radio frequency) communications which can be ideal. However, the more RF devices are installed the more problematic and unreliable it becomes - so one must be wary of this approach (as discussed in our Fact Sheet "Cabling, why WiFi just won't cut it").

The most important thing is to discuss whatever new technology is in question with a specialist firm who can examine the property (in the case of retro-fit) or the plans and lay out the best options. In every case, it is best to make sure that the specialist will take end-to-end responsibility right from this design discussion, through cabling to installation and on to multi-year support.

Some Fundamentals:

- Good technologies for retro-fit: heating controls can be fitted to radiators and under-floor heating systems with relative ease and can give a mid-teens return on investment from the first year. Obviously IT systems and many aspects of home entertainment can be retro-fitted but there is a significant difference in doing it ad hoc or taking a planned and professional approach even when using great consumer systems like Sonos. Telephone systems, door entry and other "gateway" services like fast broadband provision can also be retro-fitted if done with care and planning.
- Anticipating the Future: where it is possible to put in a proper structured cabling solution, it is vital to lay cable with an eye to the future and for your specialist to have an understanding of what is coming over the horizon as far as is practicable. For example, items such as dishwashers and washing machines, that would not be thought to require anything but power, will soon synchronise with the grid to run at the most cost effective times of night; they will therefore need their own data connections and, as ever, a cable is the cheapest and most reliable method.
- Standards: by far the world's most common data connection is that of Cat5e. This is what is installed in most offices. Because of its enormous installed base, most manufacturers of high bandwidth video-over-data-cabling solutions design for Cat5e as their minimum specification. However, many practitioners of home technology suggest Cat6 should be used as it has better shielding from interference (even cable is susceptible) and higher potential throughput. This is sensible advice in some installations where the larger diameter cable, wider bend radii and more complex terminations are not problematic. (So called Cat7 and Cat8 are not ratified standards and should be ignored.)

Things to bear in mind when evaluating this technology

- What does flood wiring really mean? All cabling should be carefully planned, terminated & tested
- Try to work with open architectures to allow future flexibility (be cautious of systems like Crestron and B&O that need proprietary cabling)
- Keep an eye on the future: cabling is cheap but opening up walls & floors later is not
- Where retro-fitting is attempted it is vital to keep reliability in mind so avoid jointing onto old cabling
- Bear in mind the usefulness of new areas of technology like heating & lighting control to offset today's high energy costs
- Historic houses can benefit hugely from the careful & sympathetic introduction of technology