



**FACE TO FACE**  
DIGITAL

ARCHITECT & DESIGNER'S BRIEFING BOOKLET



## ARCHITECTS' CHARTER

We believe that you need assurance that your specialist...

1. will only recommend systems that are reliable and, where prudent, offer the best that modern technology can offer
2. is presentable & clear-speaking enough to meet with your client face-to-face, should you wish, and to translate their requirements into a workable specification
3. will clearly understand your design intentions and to integrate their systems with aesthetic sensitivity and clear project management
4. will take end-to-end responsibility for the final operation of the system from first client meeting, through site cabling, to installation and then to support it for multiple years thereafter to ensure satisfaction
5. will take into account the regulatory demands (such as Part L) where possible and recommend ways in which their equipment can help meet these targets



## GETTING TECHNOLOGY OUT OF YOUR WAY

In Our Experience: what's possible & effective

Architects and designers want a blank sheet of paper. There are enough compromises in the building process to place a duty on every specialist to reduce the number of aesthetic trade-offs they bring to the table. Household technology has taken a lot of criticism for this, with its huge TVs and multiple control interfaces and everyone is familiar with the rash of tech that spreads across a wall when a thermostat, a light-switch and an audio-visual touch-screen sit next door to each other.

The bottom line is that only the solution should be evident: speakers should be hidden, TVs can be placed on arms to let them fold away and if a single specialist is given responsibility for the way the technological interfaces are presented to the client then controls can be amalgamated, reduced and hidden as appropriate.

Some Fundamentals:

- **Quality:** you can hide the obvious elements of technology, such as speakers, but you do need to be aware that there can be an effect on performance. For instance, the invisible 'plastered-in' speakers cannot physically shift sufficient air to give a convincing mid and low level sound so they require a subwoofer to be added which usually causes significant knock-on aesthetic integration issues. Equally, cameras can be made to be tiny and discreet but they will not necessarily provide a high enough quality image to fulfill their key purpose (whether that be in identification of intruders or baby monitoring, for instance).
- **Control:** many practitioners in the residential technology industry call themselves 'integrators'. This can be laudable but it needs to be done with great care because amalgamating functions on one device can lead to be complex to use and leave the customer wanting their simple one-function interface back. We believe the solution is to use two main interfaces: a simple one for the primary controls that are used 85% of the time (for instance turning on a favourite radio station from a standard light-switch) and a second controller (often wireless) in the room giving many more choices such as selection of music, a wider range of lighting scenes and control of functionality only used 15% or less of the time.
- **Flexibility:** now that we live in a world of wireless connectivity, the old requirement to hard-wire a control screen on the wall of each room is declining. Even systems such as door entry can bring up an image on portable touch-screens, iPhones and the like if needed. However, the world of wifi is congested and problematic (see Fact Sheet on WiFi usage) and it requires a more nuanced approach to combine some static controls (such as traditional toggle light-switches in historic homes) with intelligent functions and then a secondary wireless device to augment it.

Things to bear in mind when evaluating this technology

- Can the technology be made more discreet, can it be made to disappear from view entirely?
- Will this compromise its usability &/or performance?
- Consider giving the responsibility for ALL control interfaces the customer will have to touch to one firm so that there is a homogenous approach
- Which functions do the clients use 85% of the time
- and how can these be made simpler to use?
- Has the manufacturer put a lot of thought into their user interface & will this be impaired if it is 'skinned' by someone else?
- Do the controls mix wired & wireless?
- What level of remote operation is required?



## PART L, AND BEYOND...

In Our Experience: what's possible & effective

The government's intentions with Part L are clearly to promote energy efficiency but their requirements for dwellings are fairly lax. It is clear that many architects and clients would prefer to exceed the Part L minimums if they could do so without incurring considerable extra cost and/or aesthetic compromises. Interestingly, the easiest way to do this is often overlooked: the application of discreet yet intelligent lighting and heating controls.

With heat & light comprising 60-70% of household energy consumption and control directly affecting half of this consumption, a rapid return on investment can be shown simply by enabling clients to interact with their systems more simply and regularly.

Some Fundamentals:

- Ensuring that the fabric of a building is energy efficient is ideal, but in many cases historic considerations preclude this. Insulation, glazing and green sources of heating are all well-understood, providing cheaper heat & preventing heat dissipation, but how about not heating areas that simply don't need it? With intelligent heating controls, it is cheap and easy to zone a house on a room-by-room basis and heat only those rooms that are required for any given pattern of occupancy. We work with systems from Heatmiser and Honeywell right through to the big building management systems players like Trend.
- Most heating control systems as recommended by M&E firms tend to have grown out of the commercial environment, with confusing user-interfaces often requiring training to use. Today, customers who are used to iPads and modern computer operating systems expect better and more intuitive user-interface design and ubiquity of interaction. This can only be provided effectively by companies who are used to delivering modern, high-tech and customer-facing electronic systems and who are familiar with wiring schematics and planning to ensure the right data pathways exist to produce reliable systems.
- Lighting control systems are better understood for their aesthetic uses (scene setting etc) but the simple fact is that a light dimmed to 50% by Lutron (for instance) uses half the energy of a rotary wall dimmer. When a kitchen has 16 halogen 50w lamps burning for 8 hours a day, this can add up to a significant saving.
- New lighting technologies that are inherently more energy efficient (LED, compact fluorescent etc) require more sophisticated dimming to get the best out of them. This compounds the advantages of using lighting control.
- The advantages of heating & lighting control are often available even with piece-meal renovations and retrofits. Although stricter controls will be mandated in Part L in the next few years they should already be playing a central role in any project.

Things to bear in mind when evaluating this technology

- Giving a home-owner the tools to alter their heating to suit their needs produces a 100% guaranteed energy saving
- Modern, ecological heating such as ground & air source operate at lower temperatures & are slower to react so control is all the more vital
- This is also true of slow-reacting under-floor systems
- Energy prices are rising and will continue to do so but even at today's rates the technologies produce a 15%+ per annum return on investment
- The fundamental 'intelligence' of these controls make life more efficient & productive
- Key to successful implementation is to involve a specialist firm in the earliest stages



## ENTERTAINMENT & THE SMART HOME

### In Our Experience: what's possible & effective

For some customers 'home entertainment' can be as simple as a Roberts radio playing Radio 4 which they carry with them from room to room but those same customers may care deeply about having a reliable Sky installation to watch sports, for instance. For others, home entertainment requires a full home cinema set-up so that the visceral visual and audio impact of a movie comes across exactly as the director & producer intended it to.

Yet more customers want a home that is in some way 'smart' about their needs which often means that it makes them more efficient and productive in everything they do at home. This may mean reliable wifi to make it easy to finish the internet shopping, well thought-out door entry systems for seeing who's at the door or reliable IT to make replying to work emails easy in 30 snatched minutes between children's tea and bath-time.

The best 'smart homes' are not those with the largest TVs or most complicated video distribution systems, but those that satisfy customers' needs and yet provide a solid foundation for the easy adoption of future technologies should the customer want to embrace them at a later date.

### Some Fundamentals:

- **Price Deflation:** it is now possible to put together a home cinema system for only a few thousand pounds, for instance, that will beat the experience you can get in your local multiplex. From multi-room audio to whole-house control systems, these products have never been so affordable. Even 'consumer' products like Sonos or Sky benefit from proper set-up and planning by a specialist because they remain deeply complicated products which require a solid foundation to operate reliably.
- **Performance & Multi-Room Living Spaces:** modern homes are less segregated than in the past and so the open family kitchen may be at once an entertaining space requiring good music, a relaxing place for family TV, a working space during the day etc. These multiple roles require carefully selected equipment to make sure that multi-use doesn't mean compromised results. Equally, it requires careful early planning & design to make sure all bases can be covered and that the technology stays in the background, so that only the solution is evident.
- **Anticipating the Future:** in the same way that our homes have multi-use spaces they also evolve over time. The responsibility of the 'smart home' specialist lies not just in the initial design but also in making sure that future requirements can be catered for. A top-floor bedroom, for instance, may become a home office with dedicated telephone lines and full IT facilities and all of this should be as easy as plugging in some cables without any need to redecorate. The home will soon see great changes in the way TV & utilities operate and both will require data connections that, in our congested WiFi environment, will be much more reliable and capable if they can be connected to existing data cabling. As such it is vital, not just for the successful implementation of entertainment & 'smart home' systems in your immediate project design, 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.

### Things to bear in mind when evaluating this technology

- The all new 'features' in tech marketing are often irrelevant or misleading - buy what actually matters
- How well will one unit work with another?
- Look for specialist controls to simplify the operation of all your equipment
- Popular 'high street' equipment like Sonos can perform much better if installed with proper care
- We live in a world of congested WiFi: use cables wherever possible



## THE GATEWAY TO THE HOME

### In Our Experience: what's possible & effective

In the past people have considered their front door to be the entry-point of the home and this physical barrier is the clearest delineation of your physical defensible space. However, we now live in a connected world where people can demand your attention when at home not just by physically arriving at your gate but by calling, emailing, texting and using the other virtual 'gateways' to the home. As such, the modern world demands that designers and home owners consider all of these connections as a whole and hire a specialist to manage them properly.

This entails approaching door entry equipment, telephone lines and systems, internet connections and mobile phone coverage as a total package. This gives the home owner the tools to decide quickly & efficiently whether their home life can be interrupted by a caller, be they physical or virtual.

### Some Fundamentals:

- **Cocoon:** it is easy to feel hounded in the modern world. The home as a total haven away from work is no longer possible or popular, yet it is vital to maintain the ability to retreat, to 'cocoon' when needed. Modern technology can do this: for example we can make door entry systems ultra convenient and integrate them onto devices with other functions so they are always at hand (see FFD Fact Sheet on Getting Technology Out of Your Way). Intelligent telephony can forward your mobile to your landline in places with limited connectivity or vice versa when away from the house.
- **The Back Door:** In the same way that the home owner needs better tools to screen interruptions in their home, they also need systems that they can access and manipulate when physically away from the home. Heating controls need to have a 'back door' via secure internet access to let them be controlled remotely. Equally security and camera systems can be monitored by the home owner if the systems have been set up correctly. The physical security of the gateway to the home is important not just to keep people out but let the right people back in, physically and virtually.
- **The Building Phase:** historically door entry, telephony, broadband supply, audio-visuals, IT, heating control and intelligent lighting have all been very separate services with a different specialist for each brought on by architects and designers in planning. The progress of technology means that these systems will never function effectively if planned and installed in these 'silos'. They all share common characteristics and should be designed together with a deep technological level from the start to provide ease of use, minimum aesthetic impact from their controls (see FFD Fact Sheet Getting Technology Out of Your Way) and an efficient service for the customer where all supplies are up-and-running on the move-in-date.

### Things to bear in mind when evaluating this technology

- This service should be included in any property even if they turn down other household technologies like home entertainment or lighting control
- It is best to use one specialist firm to take a complete overview of, and responsibility for, the provision of all 'gateway' services
- Efficiently selecting & ordering telephone lines, broadband & Sky services during the building phase is vital for a smooth installation
- An effective 'gateway' implementation can be seen as the final phase of the structured cabling work
- A reliable internet connection, either in the city or country, is now as vital as a working telephone line



# CABLING: WHY WIFI JUST WON'T CUT IT

In Our Experience: what's possible & effective

The last decade has seen the proliferation of wireless networks giving huge benefits such as constant data to phones and laptops that can roam around the house. Innovation is continuing apace. However, the unfortunate truth is that our radio spectrum is already very congested and the performance of many of these networks are hobbled (especially for city dwellers whose houses are saturated by competing signals).

As residential technology develops one of its keys tasks will be to deliver high definition video around the home. This may be, for instance, from TV sources, door entry or surveillance cameras and this video must be sent/received in a continuous stream. The stability of the connection and its overall speed is therefore crucial. Even the best of today's WiFi is 1/10th of the speed of a cabled connection when working at its best. Add more TVs to stream to, a visitor at the door and the WiFi network can quickly be overwhelmed and signals lost.

Some Fundamentals:

- **Cabling the Foundation:** the responsibility of the 'smart home' specialist lies in layering a robust WiFi infrastructure on top of a fast cable infrastructure to avoid these issues. Also, cable can make sure that future requirements can be catered for. A top-floor bedroom, for instance, may become a home office with dedicated telephone lines and full IT facilities and all of this should be as easy as plugging in some cables without any building work. Services such as telephony are some years from running over WiFi (and DECT handsets do not work well with large phone systems) and so cabling for them will also be vital.
- **Anticipating the Future:** it is vital, not just for the successful implementation of entertainment & 'smart home' systems in your immediate project design, 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.
- **Standards:** by far the world's most common data connection is Cat5e, which 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.)
- **Intelligent vs Dumb WiFi:** an ordinary WiFi installation will comprise one or more access points that put out a 'pool' of reception - but each pool is unaware of its neighbouring WiFi networks and moving between them requires disconnection and reconnection. Intelligent WiFi utilises a central controller to actively manage a number of these 'pools' and allow roaming between them. Such systems are preferable if budget allows.

Things to bear in mind when evaluating this technology

- Careful planning of cabling infrastructure is vital at the earliest design stage (for fitting in 1st fix)
- WiFi networks demand throughput as a computer data stream - does this create its own complications?
- How many access points will be needed? Local WiFi conditions are unknowable until site is completed
- Is there much use of foil-backed plasterboard & structure steel in the building?
- Proper structured cabling systems require careful termination, labeling & testing or they are worthless
- How many competing types of RF will there be in the house: WiFi, DECT, Zigbee, Baby Monitors etc?



## SUPPORT & MONITORING

In Our Experience: what's possible & effective

We exist to enable people to have a better experience with technology, whether they be our customers, architects or designers. We put great care into the way we communicate and each relationship we make we create for the long term. Our installation during the building project is only the start of our work: we look to support that household for years thereafter because we believe that by enabling people to have a good experience with technology they will be willing to adopt more of it.

Of course technology can be frustrating: it is inherently complicated and sometimes unstable. Almost all of today's household systems contain computers which can crash, 'freeze' or cease to communicate properly. The fact of life is that this will happen whether one has a support relationship with a team of experts or not. Our service will provide a pro-active monitoring programme and a team of clear-speaking support engineers to help with any of these issues. Through our 'digital gardening' we can keep your systems running smoothly and efficiently.

Some Fundamentals:

- **Face to Face:** in the past, unscrupulous suppliers of technology have used the complex nature of their products to cloak their own commercial aims and to sell products to customers which they don't need or in configurations that aren't right. We are called "Face to Face" Digital because we must be able to stand in front of you and justify every product we recommend as being driven by suitability and not commercial return.
- **Price Deflation:** the benefit of today's vastly cheaper technology is that our customers can accept a faster upgrade cycle. If you paid relatively little for a TV, for instance, then it will be more attractive to upgrade for the better features in newer sets in 3 years' time. In giving the right support we can help to identify when there is a compelling reason to upgrade and when it is just marketing hype that should be ignored.
- **Familiarisation:** a pernicious effect of modern technology marketing is the proliferation of 'features' that exist only to try to differentiate products from their competition rather than be truly beneficial for the buyer. However, it is the case that many useful functions of modern equipment go unnoticed after purchase because the consumer is not aware of them. We offer training and familiarisation both after system-install and as needed in the future so that our customers can get the most out of their investments. This extends to one-on-one tuition with all members of the household who may be of use in keeping the system operating properly and at its maximum potential.
- **Room for Growth:** the key to using a specialist for all household systems and involving them in the earliest design phase is that we can create a foundation for easy & cost effective future growth. As clients become aware of the advantages of future technologies, they need a trustworthy support service to ask about it and to implement it for them if needed.

Things to bear in mind when evaluating this technology

- **Trust is vital in recommending technology:** brand independence & a complete overview of the market are necessary
- **You should be assured of a speedy response to your queries**
- **Maximising the potential of your existing investment is important especially as free software updates may have added functionality**
- **All computers will 'fall-over' from time to time so having some support resource is vital**
- **Are the systems you rely on working effectively? When did you last check your back-ups or CCTV recordings?**