

4. futureproof: Opportunities and Barriers, Engagement and Feedback

The original aims and objectives were then tested by several months of engagement and consultations with key stakeholders and industry experts.

Expert Comments

Experts from different fields the offsite / DfMA sector, financial organisations, academia, the public sector, and construction were consulted to check the underlying assumptions and to ensure greater robustness were consulted with the results shown below.

Financial Sector

The **futureproof** model is underpinned by long term, institutional finance. Perspectives from traditional banking, insurance and private & public pension fund sectors were established, importantly including those related to risk profiling and management.

These have particularly helped inform the phasing of the **futureproof** approach, the timing of finance acquisition and the required returns / cost of finance.

Institutional investors – particularly pension funds – are not characterised by homogeneity, and the ability to match the investment proposal with the ‘right’ fund is a key aspect of the next stages of the project.

Pension funds are not homogenous – they are strictly managed to reflect a pre-determined risk profile and pension fund committees are tasked with overseeing and agreeing major investment decisions.

Only a relatively small proportion of funds will be interested in the built environment/residential market in the first place, and a smaller proportion of those will be interested in the innovative approach being championed by the **futureproof** team.

The Financial Sector advice emphasised the importance of scale. Five hundred homes and above is the scale at which institutional investment makes sense. It warrants the necessary attention from fund managers whilst helping to create a balanced risk profile within the development portfolio which is sufficiently spread across a high enough number of homes.

Insurance

The issue in relation to building performance around aspects such as energy & water demand / cost and resilience of fixtures and fittings is that it relies very heavily on occupier behaviour, for which one cannot legislate. The benefits of building in resilience and longevity at the design and construction stage would be felt in the longer term through the attractiveness to insurers and hence reduced costs and would be adopted by futureproof.

Property Values

Feedback from an expert from the London School of Economics indicated that whilst there may be concerns regarding a reduction in property values locally should 500 homes be built quickly in an area. These concerns should not be a major factor in considering the **futureproof** approach as the drop in property values tend to be a short-lived phenomenon.

Phasing of Investment

In respect of actual timing of financial commitment from institutional investors, therefore, there are two key elements: institutional investment may be secured, but only drawn down at the point of completion of a building that should be faster with off-site manufacture. A funding gap, therefore, remains in relation to the pre-construction phases that will need support through from high-net-worth individuals, landowners, local authorities, and traditional development finance.

The Advantages of Collaborative Design

Feedback from BuildOffsite members shows that the design and planning process required for successfully using off-site methods is also a key factor in the development of the **futureproof** model.

The design process is far more comprehensive from an earlier stage, as design needs to incorporate the offsite technology and processes from the outset, meaning that a far greater collaborative and joined up approach to the development process is required, rather than the standard traditional sequential approach amongst client teams.

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Feedback from experts on the futureproof principles as an alternative approach for housing delivery continued

The feedback from stakeholders suggested that the market/investors that futureproof addresses must be well informed. The “pitch” is that it offers an alternative, differentiated solution that does not restrict supply to maintain value but does meet the needs for returns on investment. Additionally, it meets a need in the market for high quality housing with different, blended and highly flexible types of home ownership that is not currently being offered.

Moreover, the ability to build the properties quickly – at a rate which is greater than a traditional route – will enable earlier returns. Although the overall costs of off-site manufacture are slightly higher than traditional house build this is more than overcome by the speed and quality of build.

The housing market will need to have the information of the following features in a digestible form:

All buildings will be built to near Passivhaus standards to minimise energy (particularly space heating) demands. There will be no use of fossil fuels on FutureProof sites, with electricity adopted for the provision of heat (where required through heat pump technology).

All roofs will be built with whole-roof PV systems to maximise power generation on site (creating a land free solar farm).

Sites will be designed with consideration of cross-vectoral energy uses – anticipating needs for transport as well as heat and power.

All occupiers will be provided with an energy services package that not only guarantees energy costs (within defined usage parameters) but incentivises more efficient or varied energy use to maximise the value of energy within the system, and to promote energy trading capability.

Energy storage – at a community scale – will be a key feature of proposals with the multiple aims of:

- Minimising peak loads from the site to offset/minimise connection costs
- Maximising the value of energy generated from the properties / on site
- Enabling acquisition of Grid Services revenue

The right providers and technology partners will be identified as part of the implementation phase, with the ability to scale up across multiple developments in due course.

Fibre to the property will be installed as standard.

From a water and drainage perspective, FutureProof is likely to also focus on an inset / NAV arrangement which encapsulates portable water, surface water drainage, foul drainage, and where possible highways infrastructure.

Ancillary services – although it has been pointed out that the value of ancillary services is small when compared to other sources of reward.

OUTCOME 1. Based on the research and engagement undertaken, and considering emerging technological opportunities, futureproof is proposing the development of a semi-autonomous, technologically advanced, microgrid developed on an inset basis.

OUTCOME 2. The fundamental principles of a futureproof site had now been established and confidence had been raised by almost no “deal breaking issues” being raised by these experts.

OUTCOME 3. The ability to have a fully co-ordinated, single point of contact in relation to all phases and all elements alongside flexibility in design approach is critical for enabling a futureproofed approach to infrastructure.