SHAP WMHOG RESEARCH 2017/2018

West Midlands domestic new build standard: the business case for setting voluntary, affordable standards of quality and energy use for new housing that exceed current building regulation requirements

Scope of the research

The research is proposed to confirm anecdotal information that new approaches to housing design, manufacture and construction can make cost savings that can be used to increase the energy efficiency and quality standards of new housing. The business case and financial model produced by the research would be used to set a 'SHAP standard for new build'.

Indicative results suggest that a house built to a West Midlands standard based on existing new build demonstrators would cost 5% more and perform almost 20% better than a house built to current building regs. However, the adoption of modern methods of construction could reduce building costs by 10% compared to a traditional build resulting in an overall lower cost for a more energy efficient building. Other changes in process such as pre approval of agreed high quality housing types within a planning boundary and forward planning of infrastructure design for smart homes and local smart grids could also help to reduce build costs.

SHAP believes a new approach to housing design and delivery can attract further funding to support the incorporation of energy generation and storage which makes the homes even more affordable to live in.

BACKGROUND

The Government has identified the need for hundreds of thousands of new homes to be built. To facilitate this the Government red tape challenge resulted in the abolition of a number of housing standards and a reduction in the powers through planning that had required a trajectory to zero carbon for new homes from 2016 . This has been challenged by the House of Lords and we await the outcome for the future of a range of housing standards. However, despite the changing Government policy context, the UK carbon reduction target remains at 80% reduction by 2050. SHAP has consistently placed the need for housing energy efficiency standards for new build and retrofit at the top of its research priorities.

SHAP's objective is to make sure there is a quantifiable standard for housing that is future proof and fit for purpose because of the broad range of benefits from living within a 'healthy' home which is affordable to heat. The current position is that the UK risks building a generation of houses that will have to be retrofitted in the future as it rushes to meet the demand for new housing. However, industrialisation of construction means that standards significantly better than building regulations can be built now at an affordable price. Taking this into account, SHAP is being part funded by the West Midlands Housing Officers Group to develop a West Midlands standard for new build homes.

PROCESS

This research will test a West Midlands standard by examining existing information and consulting with both traditional house builders and those developing new highly energy efficient housing types.

The output will be a summary report to help decision makers understand the business case for the voluntary specification of higher energy efficiency standards for new build homes than current building regulations.

Output

A financial model for an affordable high quality energy efficient house that is commercially viable but delivers better quality and higher energy efficiency standards than the current Building Regs requirement.

The model will confirm construction costs per m2 (or ft2) that allow comparison with costs currently being funded by institutional investment.

The model will show how HCA DQS, Lifetime Homes and other quality standards can be met through new methods of construction which can also deliver to Code 4 -6 / zero carbon energy efficiency standards.

How will it be applied and by whom

The proposed work will be managed by SHAP and is supported by Local Authority and other social housing providers.

The financial model developed through WMHOG support will be tested with the new build housing sector. The final model will be provided to WMHOG for the information and use of Housing Officers, teams developing new housing and used to build awareness of Planning and Building Control officers to use in conversation with private sector developers.

Local Authorities planning new housing developments will have access to a financial model that demonstrates the costs/m2 for development of new housing that is more energy efficient and offers higher quality than houses currently built to be compliant but do not exceed current Building Regulations. Potentially, the model will show that better housing need not cost more to develop if a different approach is taken to design, manufacture and construction. New approaches will also address 'performance gap' issues.

Local Authorities not developing their own housing can also use the proposed model to support discussions leading to better quality outcomes from housing developments in their area.

The model would support activity in the following areas of relevance to Local Authorities:

Energy efficiency, management and security
Fuel poverty eradication
Housing, Health and wellbeing
Local Economic Growth
Carbon reduction

Added value

If the business case for affordable high quality housing can be made for social housing, there is an opportunity to build new demonstration housing developments that support a better quality of life addressing long term issues such as fuel poverty, health and wellbeing and energy security of supply and energy management.

This work would also provide the evidence base to help the industry move toward construction of zero carbon homes when required by regulation.

Local manufacture of highly energy efficient homes already operating in the Black Country could be scaled up across the West Midlands to meet national demand stimulated by both the business case and future regulation.

EXAMPLES

Development of a high quality, energy efficient, affordable to build house is likely to involve industrialisation of the construction process. This offers new business and employment opportunities for the West Midlands.

- The Accord LoCaL Homes factory offers a model for industrialisation which allows access to employment for previously unemployed and disengaged community members.
- There is evidence that the lack of pipeline projects is restricting the production levels of products such as Porotherm, being used by McCarthy and Stone but not widely rolled out. Porotherm offers a faster on site build and a greener building material but the business case for its use is not widely believed. There may be business development opportunities for local manufacture of materials such as Porotherm.

Proposed Methodology

- Collate existing energy performance data for new build homes and gather new build costings for new homes built across the West Midlands
- Produce draft cost model
- Consult with industry
- Final report including evidenced business case for building affordable, high quality, energy efficient homes in great places