

**Decision Session – Executive Member for  
Housing and Safer Neighbourhoods**

**30 June 2020**

Report Corporate Director, Health, Housing & Adult Social Care

**Proposed Energy Accelerator Pilot Project**

**Summary**

1. We are seeking to establish a pilot project to demonstrate retrofit design specifications that can be adopted to maximise the energy efficiency performance of CYC's existing social housing stock. The retrofit specifications will be produced in collaboration with specialist consultancy funded through the West Yorkshire Combined Authority's Energy Accelerator scheme. Once agreed, the specifications will then inform a £1m project of energy efficiency works to selected council homes.

**Recommendations**

2. The Executive is asked to:

- 1) Executive Members are asked to approve Option 3.

Reason: Continuation with the pilot project proposal on the basis of producing retrofit specification models suitable to bring at least 30 of our worst performing property archetypes up to EPC level 'C', combined with designs to bring 8 properties up to the ENerPHit standard.

**Background**

3. In March 2019, the Council declared a climate emergency in response to global warming and the UN's IPCC report of September 2018 on climate change. It committed to reduce the city's carbon emissions to net zero by 2030.

In July 2019, Executive members, agreed a number of amendments to the HRA budget for 2019/20, including establishing a £1m budget to

begin a programme of increasing the energy efficiency of our Council housing stock.

In August 2019 officers approached West Yorkshire Combined Authority (WYCA) to discuss their Energy Accelerator scheme. This is an innovative scheme, funded by the Leeds City Region Growth Deal and European Local Energy Assistance (ELENA) programme, is designed to help low carbon and energy efficient projects become a reality where they may otherwise not have been completed due to a lack of capacity, expertise and funding. Specifically, the scheme could fund technical, legal and commercial expertise costs up to 5% of total project costs.

During August and September 2019 officers worked with the WYCA' project lead to develop a project design and funding bid submission that would focus the first pilot properties on improving the energy efficiency of our worst performing stock. Currently a third of our stock is below EPC 'C' rating. This initial bid for gateway 1 'proof of concept' was approved by the LEP Board in October 2019.

See chart below for the Gateway approval process.

### Gateway process



More detailed project development and discussion with WYCA officers and with Executive Members then took place to develop the bid for the Gateway 2 feasibility assessment.

Given that 80% of the housing that we will be using in 2050 has already being built, tackling the challenge of retrofitting these houses to very high energy efficiency standards is crucial for reaching our climate change goals. Increasing the thermal efficiency of our buildings so that only very low levels of energy are needed for space heating and cooling is a key

part of reducing our CO2 emissions and also offers a “win-win” opportunity. Very low energy bills also help to tackle fuel poverty by not only reducing the cost of energy but also increasing comfort levels for residents.

There is however a great deal to be learned in terms of the practicalities of retrofit including the best approach for different housing architypes, skills and training for contractors, developing local partnerships and procurement chains, and engagement with residents including the management of those parts of the process that require residents to move out for a period of time.

There are also different approaches to retrofit which we need to understand better in practice. These include a variety of different approaches to ‘Fabric First’ and also the use of the ENERPHIT standard – the retrofit equivalent of the Passivhaus approach we are using for our Housing Delivery Programme. The ENERPHIT approach ensures that thermal efficiency is as high as possible and the demand for energy (of any kind) as low as possible, but is more expensive and does require more disruption for the householder than approaches that may be developed via an EPC based route.

Taking all this into account the following three options have been developed and Option 3 is recommended. The recommendation was to have gone to an Executive Member Decision Session on 26th March but was delayed as a result of the Covid-19 emergency. This section should include details and results of any consultation that has taken place within and/or outside the Council. If the report concerns the Council budget or Policy Framework, comments of the relevant Scrutiny Committee must also be included.

## **Consultation**

4. This report has been reviewed by HHASC DMT, the SMT for Housing & Community Safety.
5. A key factor in ensuring the success of the pilot will be establishing ‘buy-in’ from tenants in the homes where we’d like to carry out this work. This is critical because the work is very disruptive, and in the case of homes having ENerPHit works, the tenants will need to be decanted for many weeks, will need to live with a site presence for up to 6 months. Tenants who understand the benefits of the work, both in terms of energy savings and environmental impact; and who know how the work will be carried out – are more likely to accept this short term disruption and to advocate for this type of work with friends and neighbours.

To establish this 'buy-in' the project team will work with the council's tenant engagement officers, to produce fact sheets, newsletters, videos illustrating the benefits of the work, and how it will be carried out. We will also undertake briefing sessions, where we will not only address tenants' questions but also seek their input. We will also work with our communications team to establish a project communications plan, to ensure we provide frequent and relevant updates to tenants via project specific social media – Facebook, twitter, Whats-App. As with other major works on our properties, these works will only be carried out with the approval and agreement of the tenants concerned.

## Options

### 6. Option 1,

Produce retrofit design specifications in collaboration with the Energy Accelerator programme that can be used to bring our worst performing stock up to an EPC 'C' rating; then roll out those models across 60 pilot properties using our existing WYCA 'Better Homes' Contract.

#### Estimated Costs

We have estimated that this approach would cost £15k per property, giving a total pilot project cost of £900k. All consultancy, design, survey, and project preparation to point of handover to the installation contractor would be provided for 'free' through the Energy Accelerator scheme. Costs are covered by the allocated £1m energy efficiency budget.

#### Impacts

We would aim for a 40% saving on carbon emissions from space heating. Based on a national average gas usage, this would equate to 1.1 tonnes of CO2 per property. Estimates suggest this would result in an average annual energy bill saving of £260 for each household. These works will also reduce the incidence of cold conditions which contribute to condensation and mould growth, improving the health and wellbeing of 60 households. They will also reduce the number of repairs inspection the council need to make, and the risk of disrepair claims. Works would take between 1-4 weeks, and it is envisaged that the tenants will be able to remain in their homes.

## Risks

The insulation works required for this programme could result in residents having to empty their lofts. Where new heating systems are required, the level of disruption would be similar to a kitchens and bathrooms replacement programme. Typical project management risks regarding customer care, quality, timeliness, and budget adherence, will be mitigated through strong project governance overseen by the Head of Building Services and a dedicated Project Lead. The Energy Accelerator team will carry out a full analysis of risk prior to commencement of the project, and a risk register will be maintained throughout. Whilst improving the energy efficiency of a number of homes, this approach as it stands will be of limited advantage in progressing our understanding of how to tackle the zero carbon retrofit challenge in York.

## 7. Option 2.

Produce retrofit design specifications in collaboration with the Energy Accelerator programme that could be used to bring our stock up to EnerPHit standard; then roll out those models across 12 pilot properties using our existing WYCA 'Better Homes' Contract. Target properties would include inter-war terraced properties and 'Dennis Wild' non-traditional homes.

### Estimated Costs

In order to maximise the number of homes deliverable we would aim to deal with 4 properties in a terrace in a single installation. The cost for 4 inter-war terraced properties would be approximately £250k; and approximately £300k for 4 Dennis Wilds. We would envisage project costs of £800-£900k depending on the mix of properties, plus £6k in supporting residents to move out during the works. All consultancy, design, survey, and project preparation to point of handover to the installation contractor would be provided for 'free' through the Energy Accelerator scheme. If we were to retain the designing architect, and appoint a retrofit coordinator, as recommended below, we could expect to pay a further £100k, but these costs would not be covered by the Energy Accelerator scheme. This would push the project to the limit of our existing £1m budget, leaving no room for contingency. However, retention of a designing architect and retrofit coordinator for the duration of the project will help us to most effectively develop our expertise in approaches to high thermal efficiency retrofit and contingency can be identified in the £250k energy efficiency budget approved for 20/21 in February 2020.

## Impacts

The EnerPHit standard requires that a property expend no more than 25 kWh/m<sup>2</sup>/yr. This would result in an estimated savings of 1.9 tonnes of CO<sub>2</sub> per year and estimates of approximately £440 of energy bill savings for the 12 households in the pilot. These works will also reduce the incidence of cold conditions which contribute to condensation and mould growth, improving the health and wellbeing of 12 households. They will also slightly reduce the number of repairs inspection the council need to make, and the risk of disrepair claims.

## Risks

The disruption to residents would be significant and we would expect there to be an ongoing site for 6 months for these pilot properties. Residents would be able to remain in situ for most of the works, especially if the contractor is able to complete the insulation and air tightness works externally. However, residents would need to be decanted while the mechanical ventilation with heat recovery is installed, which would take at least 2 – 3 weeks. This would include in the region of £500 removal costs and void loss for each decant.

The works are much more complicated than the typical 'fabric first' retrofit work in Option 1, with higher risks of unintended consequences meaning the contractor would need to be managed carefully. It is recommended that we retain the designing architect and potentially a retrofit coordinator throughout the installation. The highly specialist nature of this type of work would also mean our procurement process would need to be far more rigorous to ensure that the contractor had the necessary skills to deliver the project.

## 8. Option 3

Design a hybrid project with elements of both Option 1 and 2, focused on Dennis Wilde properties whereby we bring 8 properties up to ENerPHit standard and as many as 30 homes up to EPC 'C'.

Full ENerPHit certification can be hard to achieve for some properties and may not be achieved in every case. Using the EnerPHit methodology, however, ensures that the retrofit gets as close as possible to the highest thermal efficiency. The small number of ENerPHit properties that can be achieved with the funding currently available means that only a limited number of our housing architypes could be addressed. The option of ensuring that our EPC based approach also develops a 'roadmap' to

ENerPHit has also been brought forward, which means that a 'hybrid' approach will offer the most learning for the future.

The Accelerator Project will provide an appropriately qualified ENerPHit architect, and a Retrofit Coordinator to develop technical designs and project delivery specifications. EPC 'C' retrofit specification will be designed in such a way that this becomes a first phase or first step which can easily added to at a later stage to achieve higher energy performance standards as new budgets/funding become available. In effect this option allows us to design a retrofit specification 'road map' towards ENerPHit for the selected archetype.

### Estimated Costs

To bring 8 homes up to the ENerPHit standard would cost approximately £550k, based on work to Dennis Wildes properties in terrace or semi-detached configurations. To bring at least 30 homes up to EPC 'C' would cost approximately £450k.

### Impacts

The ENerPHit standard requires that a property expend no more than 25 kWh/m<sup>2</sup>/yr. This would result in an estimated savings of 1.9 tonnes of CO<sub>2</sub> per year and approximately £440 of energy bill savings for the 8 households in the pilot. Bringing 30 homes up to EPC 'C' would result in an approximate annual energy bill saving of £260 per household and a saving of 1.1 tonnes of CO<sub>2</sub> for each home. These works will also reduce the incidence of cold conditions which contribute to condensation and mould growth, improving the health and wellbeing of 38 households. They will also slightly reduce the number of repairs inspection the council need to make, and the risk of disrepair claims

### Risks

Option 3 produces less overall energy bill savings, and less overall carbon savings than Option 1 due to the somewhat smaller number of properties in the pilot. The disruption to residents receiving ENerPHit works would still be significant and we would expect there to be an ongoing site presence for 6 months for these pilot properties. However it does allow us to combine the more easily accessible carbon savings of bringing all homes up to an EPC 'C' with a practical learning opportunity of how to best deliver ENerPHit level efficiencies in social housing homes.

The ENerPHit works are much more complicated than the typical 'fabric first' retrofit work in Option 1, with higher risks of unintended consequences meaning the contractor would need to be managed carefully. It is recommended that we retain the designing architect and potentially a retrofit coordinator throughout the installation, making use as necessary of a portion of the £250k allocated for energy efficiency works in the February 2020 budget. The highly specialist nature of this type of work would also mean our procurement process would need to be far more rigorous to ensure that the contractor had the necessary skills to deliver the project, but this will be guided by the ENerPHit process.

## **Analysis**

### **9. Provisional Timeline**

- 1 July 2020: sign-off by EA
- Early July: sign-off by COYC
- 27 July 2020: project sponsor agreement and duty of care letter signed; EA work can commence
- August 2020: data exchanged and remote surveys undertaken
- August – September 2020: ENerPHit design developed, works programmed and funding options reviewed
- October 2020: specification developed
- November 2020: contractor appointed/works order approved
- December 2020 – February 2021: contractor designs developed and reviewed
- March 2021: works commence

### **10. Property Selection**

- Properties will be selected on the following basis;
- The current energy performance falls below EPC 'C'

- Properties will where possible all be of the same archetype to enable a retrofit road map to be developed from EPC C to ENerPHit – with \*Dennis Wildes as favoured archetype to focus on
- Properties are configured in terraces
- Properties house council tenants
- Tenants have indicated that they are interested in having the work carried out

## 11. 'Dennis Wildes'

These property archetypes are found in the Hull Road, Tang Hall areas of the city. They were built between 1920 and 1927. They have a skeleton steel frame. On the ground floor, a near traditional narrow cavity wall and on the upper floor a very narrow block cavity with hanging tiles or render finish. A number were modernised in the early 2000s, but many still suffer from poor energy efficiency, and problems with condensation and damp in upper floor rooms. Properties in Burlington Road for example have an average RD SAP of 65 (EPC level 'D').

## 12. Further funding

At present there are limited options for additional funding for retrofit and specifically for Passivhaus/ENerPHit. However, Government policy on this is developing rapidly with acknowledgement that in terms of economic recovery the urgent need for housing retrofit to tackle climate change and fuel poverty also represents an opportunity to create many new jobs. Developing our understanding of approaches to retrofit and to our various housing archetypes in York through this programme will put us in a very good position to attract further funding as it becomes available.

The Energy Accelerator project team will review any additional funding options as part of their work, see timeline above. Officers will also ensure that should any additional funding streams be made available during the development of the project, they will be investigated and pursued where appropriate.

### 13. Reason for recommendation

	<u>Carbon savings (tCO2)</u>	<u>Annual Bill savings (£)</u>	<u>Total Project Cost (£)</u>
<u>Option 1. EPC C – 60 properties</u>	<u>66</u>	<u>15,600</u>	<u>£900,000</u>
<u>Option 2. EnerPHit standard – 12 properties</u>	<u>22.8</u>	<u>5,280</u>	<u>£1,000,000</u>
<u>Option 3. EnerPHit standard 8 properties + 30 Properties to EPC ‘C’</u>	<u>EnerPHit – 15.2</u> <u>EPC C – 33</u> <u>Total - 48.2</u>	<u>440 x 8</u> <u>+ 260 x 30</u> <u>≡</u> <u>Total – 11,320</u>	<u>£1,003,000</u>  <u>(Includes £3k for decanting costs).</u>

Option 3 combines the more easily accessible carbon savings of bringing homes up to EPC ‘C’, with the opportunity to create, and extract the learning from, a project to bring 8 homes up to the ENerPHit standard. It also aligns more closely with CYC’s aspirational goals to reduce the city’s carbon emissions to ‘net zero’ by 2030.

### Council Plan

14. This proposed project supports the Council’s objective to develop and greener and cleaner city.

### Implications

- **Financial** – Appropriate budgets in place. Risk of funding clawback for costs incurred by WYCA to date should we decide not to proceed with the project, or breach any of the terms and conditions of the funding agreement.
- **Human Resources (HR)** – None
- **Equalities** – None
- **Legal** - State Aid. No state aid implications are envisaged as a result of application for, or receipt of, this funding; however we have asked our Legal Dept to confirm this.

- **Crime and Disorder** – None
- **Information Technology (IT)** – None
- **Property** – None
- **Other** - None

## **Risk Management**

8. Risks are considered within analysis section for each option.

## **Contact Details**

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	<b>Approved</b>

**Wards Affected:** [List wards or tick box to indicate all]

**All**

**For further information please contact the author of the report**

**Background Papers: None**

**Annexes: None**