

# Crawley Borough Council

## Report to Climate Change Scrutiny Panel 12 October 2020

### Crawley Homes – Energy Efficiency Activity

Report of the Head of Crawley Homes, CH/191

#### 1. Purpose

- 1.1 The purpose of this briefing note is to update the scrutiny panel on previous, current and proposed activities within Crawley Homes as part of an effective Carbon Reduction programme

#### 2. Recommendations

- 2.1 To the Climate Change Scrutiny Panel:

The Scrutiny Panel is requested to receive this report, note and acknowledge the update and progress to date and any future service delivery (set out in appendix A).

#### 3. Reasons for the Recommendations

- 3.1 To update the Scrutiny Panel on the residential and domestic properties achieving a low-carbon footprint and to understand the challenges the services face – now and in the future, together with the provision of support currently being provided. This follows the Climate Emergency Declaration in July 2019 which requested a Scrutiny Panel be established to focus upon the workings and activities of Crawley Borough Council relating to carbon emissions.

#### 4. Background

- 4.1 Crawley Homes maintains over 8,000 tenanted homes, 1,500 leasehold properties and communal areas, plus a number of Sheltered Housing, Hostels, and Garages etc. on behalf of Crawley Borough Council
- 4.2 The current housing stock is a mixture of flats and houses built between 1915 and the current day, of either traditional or non-traditional construction type. A new build programme continues and has included Passivhaus homes as well as more traditionally built homes.
- 4.3 Previous projects have included gas boiler upgrades, solar thermal panels for hot water, Photovoltaic panels, air source & water source heat pumps, loft, cavity and external wall insulation, LED Lighting, all of which produce better energy efficient homes for our tenants.
- 4.4 Some of our newer homes are already fitted with energy monitoring devices, measuring temperature, humidity and electrical energy usage. This data can be difficult to use and to work out which heating systems are the most beneficial.

## **5. Description of Issue to be resolved**

5.1 Crawley Homes is committed to reducing our carbon emissions by 40% before 2030 with the aim of reaching zero carbon before 2050, by developing the correct solutions for each property dependant on its age & construction type. This will result in lower energy bills to prevent fuel poverty and higher quality warm, well ventilated homes creating a positive environment for residents.

5.2 There are a number of Major Factors in reaching our 2030 40% Carbon reduction requirements that will help with reaching the Councils corporate climate change commitment

- **New Build – Construction Methodology/Specification**
- **Net Zero Collective**
- **Partnership Contractors**
- **Estate Regeneration**

### **5.3 New Build – Construction Methodology/Specification**

Currently the Councils Employers Requirements (ER) specifications require 19% carbon reduction above current building regulation requirements. This is currently under review, looking to see if/how this could be improved. This could be by the increased use of the specification of certified Passivhaus or taking the passivhaus fabric first approach and having reduced ventilation losses with added renewables.

The current requirements are already very close to Passivhaus fabric standards. Ventilation rates/losses and could be further reduced, but then we are almost specifying Passivhaus as standard. We have yet to revisit the carbon credentials of construction types. EG Timber frame versus masonry thin bed joint.

Other considerations will be the provision of electric car charging points to be standard across all new build developments, although it is anticipated that near future building regulation revisions are likely to recommend this.

### **5.4 Net Zero Collective**

CBC are very pleased to be joining the NetZero Collective and look forward to working together with other organisations across the UK to make a positive impact on reducing our carbon emissions with a view to having data driven future energy efficient development programmes at Crawley Borough Council

Netzero Collective has developed a Programme in conjunction with Southampton University to gather Data from domestic and commercial properties, and, based on an analysis of the Data to make recommendations (if applicable) for the installation of an intervention to reduce carbon emissions.

It is intended that the Data collected from all Project Participants will be pooled by Netzero to be processed by its Analytic Partners to produce the most appropriate form of intervention recommendations for as many differing property archetypes as possible from the Data.

Crawley Homes are committing ten different properties to the programme for the data study phase. The ten homes will reflect different property types, of varying age and build, allowing us to explore the range of options for each.

On completion of the extensive data study supported by Southampton |University, Crawley Homes will then be in a position to make an informed decision on the measures required to enable future retrofit programmes to be developed

## **5.5 Partnership Contractors**

Crawley Homes has recently procured some new long term maintenance contracts with 3 well established maintenance contractors. As part of the new contract an alliancing group has been formed to look at a number of key development areas, one of with being energy efficiency & carbon reduction. A sub-group has been set up with the purpose to ensure that all parties work together with regard to energy efficiency and carbon reduction programmes. All three contractors made commitments within their tenders to work in collaboration with Crawley in driving energy efficiencies and carbon reduction throughout the lifetime of the contract. These measures include looking at transferring their fleet of vehicles to all electric, to reducing energy in the home and investing in the local community as projects are identified.

## **5.6 Estate Regeneration**

As part of Crawley Homes future asset management strategy, we have recognised the need to explore the option of estate regeneration. Crawley Homes have a number of non-traditionally constructed properties that were system quick-built as part of the new town development. These homes require extensive maintenance to ensure they maintain a fit for habitation status. All options need to be considered in order to provide higher energy efficient standard, improve dwelling density and ensure homes are fit for future generations and feasibility study appraisals will be undertaken.

## **6. Implications**

- 6.1** Any financial implications have currently been met from the HRA capital/stock investment programme works budgets, and funding allocated for new-build housing programmes
- 6.2** Further funding implications will be subject to more detailed cost analysis when future investment requirements have been identified/agreed
- 6.3** Statutory requirements (building regulations) and council policy (planning policy) will have an impact on ant future decisions made

## **7. Background Papers**

- 7.1** None

## Appendix A

### Previous Completed Energy Efficiency Measures

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| TSB funded retrofit Properties – (Technology Strategy Board), alongside decent homes programme | 4 homes all of different construction type were identified and extensive retrofit carried out using all new technology methods   |
| Own Solar PV – Sheltered Schemes   | We currently have four sheltered schemes and four hostels providing the Council with an annual feed in tariff income totalling £13,806. This produces 47,000kw of electricity per quarter, and in turn equates to an approximate saving of 52000 kg of CO2 per year. |
| YES/WSCC Partnership - PV programme  | 236 solar PV installations carried out in partnership with WSCC who own & maintain the PV installations and take the FIT (feed in tariff). The tenants then get the benefit of the free electricity produced   |
| Air Source Heat pumps  | Heat pump installed as a free trial. At 151 London Road as a retrofit, where the tenant gets the benefit of the lower cost energy<br><br>The new build properties at Dobbins Place have also been installed with Air Source Heat Pump Technology                     |
| Water Source Heat Pump – Schaeffer House   | This significant installation now provides all the heat & hot water to Schaeffer House sheltered scheme communal areas. This was complex to set up as arrangements with the Environment Agency etc. were required (river water extract licence)                      |
| Passivhaus Construction: Gales Place / Dobbins Place   | New development with all properties designed & built to Passivhaus standards   |
| Cavity Wall, Insulation Programmes   | Ongoing programme to insulate cavity walls (main focus on properties suffering from damp & mould)  |
| LED Lighting installations   | Various communal areas in flats have been converted to general LED lighting & LED emergency lighting. We are therefore phasing out the use of fluorescent tube lighting across all communal areas.   |

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| Working in partnership with Robin Hood Energy (Nottingham City Council) for energy switching and smart meter installations | All void properties over the past 18 months have been switched to a 'Robin Hood energy supply and a smart meter installed |
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### Current Projects underway

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| Net Zero Collective sign up      | <p>Crawley Homes have joined the 'Net zero collective initiative.</p> <p>This is a growing collaboration of property landlords, equipment manufacturers and building owners - including local authority and social housing landlords, who are working with university researchers to find answers to the challenge of decarbonizing UK buildings and homes.</p> <p>NetZero Collective initial study will be to look at current energy performance and monitor the stock across 10 to 20 pilot properties. A full data study/analysis will be carried out in conjunction with Southampton University research team, before making any recommendations with regards to retrofitting properties with zero carbon heating, cooking and cooling solutions. This takes a building fabric and data first approach.</p> <p>After the retro fit completion, properties will continue to be monitored for performance which will result in a future methodology for carbon efficiency across all Crawley Homes housing stock.</p> |
| External wall Insulation (EWI)   | Programme of installing external wall insulation to the timber framed properties within Broadfield & Bewbush is now in its 3 <sup>rd</sup> phase.   |
| LED Lighting Upgrades            | Our larger sheltered housing schemes have been upgraded with LED lighting and occupied switching, to produce further energy savings.  |
| Cavity Insulation Fill           | Ongoing cavity fill to properties identified as most in need (tenants with damp & mould issues)   |
| Loft Insulation Top-ups          | Following void scope asset surveys, lofts are topped where a need is identified   |
| Solar PV & Battery Storage trial | A further 620 kw of PV installations has been identified on other blocks to utilise   |

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|   | battery storage solutions for their communal areas or fed back into the grid. A trial battery storage installation has recently been installed to assess its savings, production and payback. If successful and cost effective, further sites could be upgraded.   |
| Smart Meter Installation and energy Supply switch for all void properties                 | Robin Hood Energy has now transferred all its business customers to British Gas. We continue to work with BG regarding void properties switching to a BG supply and smart meter  |
| Installation A-Rated Combination Boilers (see later more on their future)                 | Liberty Gas currently continue to supply new A-rated boilers   |
| John Brackpool Ct   | John Brackpool Ct is now connected to its own temporary communal boiler.   |
| Bridgefield House   | Stand-alone combined heat & power (CHP) currently supplies the building  |
| Partnership contractors –energy efficiency & carbon reduction is key sub-group focus area | A sub-group has been set up with CBC and its key maintenance partnership contractors. The purpose of the group is to ensure that all parties work together and deliver their tender commitments with regard to carbon efficiency programmes.   |
| New builds / Passivhaus / Part L building reg's or better: review planning policy         | A current review is underway of all our new build energy/carbon efficiency specifications  |
| Renewable technology – Current study underway   | Discussions are currently taking place with regards to a design service and training for Crawley Homes and Liberty Gas engineers   |
| Future of Gas boiler provision  | We are currently in discussion with an energy management consultant to model our future boiler/heating system requirements. We are considering when best to stop installing gas boilers - (possibly 2025)<br>Also looking at the best alternatives with regard to renewable technology to replace the existing boilers as and when they fail |
| Energy monitoring   | We currently have a number of existing stock properties, as well as some new build homes being monitored for their energy usage & performance by Raleigh instruments. This system is adaptable to monitor many energy production and energy usage in a home  |

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|  | <p>and shown on one platform for an app or PC.</p> <p>Our larger plant boiler rooms use is monitored by Trend systems.</p> <p>All systems allow for performance and monitoring results to be available locally. These platforms are used for metering and billing, performance reviews, complaints or for fault finding.</p> <p>We also have separate metering and billing systems for our District heat networks.</p> |
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## Future Proposals in the making

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| Continued investment in property Insulation programme (EWI/Cavity/Loft)                 | We have invested over £3.5 million to-date in various insulation programmes over the past 3 years to help improve the efficiency of our poorest performing houses. We will continue to invest in improving the poorest performing properties.   |
| Net Zero Collective – Implementation project  | On completion of the pilot study, the results of the monitoring will be considered to help plan future retrofit programmes of work. This will also look at using local labour, suppliers & technology as well as working in collaboration with Crawley college.   |
| Energysprong – Dutch concept using off-site construction for retrofit of existing homes | Crawley Borough Council (as Part of the larger 'Coast 2 Capital' bid) progressed the option of 4 pilot properties (with EU match funding) using the 'Energysprong' retrofit model. Whilst EU match funding is no longer available, opportunities are still present for alternative match funding, however this would require a larger scheme (circa 30-40 units) and underwritten guarantees. Both of which have resulted in serious concerns on the viability of the project. However we continue to look for viable opportunities of working with Energysprong in the future. |
| Study on fuel poverty – recognise those most at risk                                    | Still need to scope requirements that will form part of the findings from Netzero Collective  |
| Regeneration: review planning policy  | In conjunction with progress from feasibility study to live project.  |

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| Feed into any council policy being developed regarding Climate Change Emergency. Should our local planning policy exceed national guidelines! | Corporate projects to be progressed  |
| Lessons learnt from existing data and monitoring equipment  | A single multiple open protocol platform able to monitor all devices is best.<br>Some monitoring equipment is limited in ability to monitor many inputs. |