

**GM ENVIRONMENT TEAM**

**Date: 25 AUGUST 2016**

**Subject: GREATER MANCHESTER GREEN DEAL COMMUNITIES PROGRAMME  
SCHEME EXIT PAPER**

**Report to: GREATER MANCHESTER LOCAL AUTHORITIES**

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**PURPOSE OF REPORT**

The report provides GM Local Authorities with an update on the Greater Manchester Green Deal Communities Programme and with relevant reference details for post programme.

**RECOMMENDATIONS**

GM LAs are asked to:

- Review this paper and its contents, and to store the relevant framework partner contact details for any future customer queries.

**1. BACKGROUND**

In late 2014 DECC/BEIS awarded the Association of Greater Manchester Authorities (AGMA) with the largest Green Deal Communities budget (£6.1M), and largest national target for delivery (1,205 households to receive measures predominantly external wall insulation).

Initially over 27 LAs and combined authorities were nationally awarded DECC/BEIS GDC funds, mid-way through the project only 19 LAs/combined authorities still remained, (the others struggled and dropped out), out of those remaining we are the lead nationally, and the only body to have completed.

Greater Manchester bolstered the original DECC/BEIS funding with additional funds: £1.2M total Customer Contribution, £948K Local Authority contribution and £589.1K of ECO funds, making the net worth of this project £8.8M.

Greater Manchester completed delivery of the project before the deadline, 31st March 2016, with 1,302 households receiving measures (predominantly external wall insulation); 97 additional households receiving measures all within budget. We were the first to meet the DECC/BEIS Green Deal Community Household Sign Up Target and the first (and only body to date) to have met the DECC/BEIS Completion Target by the DECC/BEIS deadline.

## **2. DELIVERY OF GM GREEN DEAL COMMUNITIES PROGRAMME**

### a) Initial obstacles:

Green Deal has received much negative PR. With this negative publicity and industry apathy, it was very difficult at the start of the Greater Manchester Green Deal Communities project to get Green Deal Communities underway, a concept developed by DECC/BEIS aimed to kick start Green Deal. In Greater Manchester, we utilised the Green Deal Communities funding to assist fuel poor residents, in the private owner occupied and private rented sector, with energy efficiency measures for hard to treat elements, predominantly through external wall insulation (EWI). The private sector, in the past, has often been neglected when it comes to external wall insulation, with the majority of EWI schemes, focused on social housing.

Overall Marketing: customer engagement and marketing was kept simple, both for the residents and the local installers, as at the time the project started there were conflicting national offers available such as Home Improvement Fund (HIF). Set up of such a large scale project, legalities, data sharing etc. also meant that we encountered initial delays.

During delivery of this project we have seen all our 10 LAs undertake staff reductions. The Greater Manchester team also disbanded the Greater Manchester Energy Advice Service which was in existence at the start of the project, mid-way during the project, leaving one full time and one parttime officer. We have seen small SMEs who have been working on the project enter into Administration. Through the programme framework we were able to assist a few such companies and prevent them from entering into Administration e.g. by advance payment.

### b) Technical Advancements:

This project has enabled technical innovative advancement in Greater Manchester. Working with the University of Salford and a local SME, RED, a pattern book has been produced. This is an extensive online catalogue of different types of domestic retrofit measures, (including those used on this project) and details around them e.g. types of suitable materials, access to these materials, advantages of specific methods of installs etc. We have also learnt from undertaking this project and technical workshops have been held to share this learning in Greater Manchester with key stakeholders, local SMEs, contractors and local authorities. Etc. This learning has also been shared with DECC/BEIS and the Core Cities group (a national group made up local authorities).

Through this project we have also delivered external wall insulation on a whole, owner occupied, park homes estate (+20 park homes); this is a first in Greater Manchester. The project was well received and has significantly benefited the fuel poor residents. In addition the programme has worked on retrofitting an array of complex solid wall properties including steel framed and tinned wall properties, homes that have extremely low thermal comfort. The project has used innovative energy efficiency materials e.g. on homes at risk of flood. This learning is can be used for future schemes in Greater Manchester.

The University of Salford is monitoring a select few households to enable a better understanding of the impact of these energy efficiency works on these households. Once this evidence is collated, it will be shared local and nationally (through DECC/BEIS, Core Cities, and Public Health England) to enable better learning of such measures.

### c) Using local SMEs and third sector groups:

This project has provided work for small local SMEs who have been contracted to be the installers as well as deliver customer engagement. Local charities and community groups have also been used for customer engagement, behavioural change advice programmes

etc. Local venues and community buildings have been hired. This project has greatly helped to increase local community cohesion and bolster the local economy.

d) Customer financial contribution:

Residents who provided a financial contribution towards the works were assisted with access to interest free loans, e.g. through local authority loans, or Care and Repair loans etc.

### **3. PROGRAMME OUTCOMES**

- The majority of the 1,302 residents assisted through this programme are low income, vulnerable, fuel poor households in Greater Manchester (Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Stockport, Tameside, Trafford and Wigan). They have been assisted through energy efficiency measures, predominantly external wall insulation, as well as behavioural change advice and energy efficiency advice. For a full break down of these installs please see Annex 1.
- On average we are seeing approximately £350pa savings on resident fuel bills.
- Estimated quantity of carbon/energy saved per year through this project in Greater Manchester: 12000 MtCO<sub>2</sub>e (or 1.2M kg).
- GM have received very positive feedback from residents since installation of the energy efficiency works including: improvement in their thermal comfort, a better understanding of their energy usage, a visual improvement to their home from the outside and their street looking better visually, community atmosphere improved with the area being visually rejuvenated and neighbours interacting with each other benefit.
- The project has delivered a holistic approach, e.g. coordination of use of other services/works for the residents which has added to the overall impact of the energy efficiency project, e.g. additional home repair works e.g. roof repairs, security and safety advice through fire and police visits, community led/ and council led street clean ups, community led events and activities. Some Councils (e.g. Rochdale) through this programme have also provided residents with an easy to read handbook detailing the works and energy efficiency tips etc.

### **4. EVALUATION STUDY BY THE UNIVERSITY OF SALFORD**

The University of Salford conducted an evaluation of the programme. A questionnaire was sent to all residents who had been involved in the programme and had received energy efficiency home improvements; 181 residents completed and returned the questionnaire. The feedback from the survey has been very positive: over 80% found the works to be value for money, 88% found the energy efficiency works had a positive impact on their property. 77% of those who responded to the questionnaire found the quality of final works good/very-good. Only 16% of respondents found the quality to be below 'good' i.e. fair, 7% responded with poor (we liaised with the University to obtain contact details for these residents; however these residents wished to remain anonymous). 77% found the quality of handover information good/very-good.

## 5. NATIONAL COMPARISON

The national deadline set by DECC/BEIS to complete this programme was 31<sup>st</sup> March 2016. GM met this deadline and were the only body in the county to do so. To review how our project compares nationally in May 2016, please see Annex 2 (Supporting document, source DECC/BEIS: Zillah Boraston, Home Energy, [Zillah.Boraston@DECC/BEIS.gsi.gov.uk](mailto:Zillah.Boraston@DECC/BEIS.gsi.gov.uk)).

## 6. GOING FORWARD

### a) Data

All final data has now been submitted to DECC and all DECC data queries have been dealt with. As an LA if you wish to access data specific to your LA (some of you have already done so, e.g. Salford, Oldham) please contact Amy Decourcy: ([amy.decourcy@rochdale.gov.uk](mailto:amy.decourcy@rochdale.gov.uk)) by 17<sup>th</sup> October 2016 with your request.

### b) Green Deal Community Queries

The programme has now officially closed.

- i. For Customer Queries: Please see Annex 3.
- ii. Local Authority Officer Queries:
  - Keepmoat relevant query: [ian.stone@keepmoat.com](mailto:ian.stone@keepmoat.com) Tel: 0161 876 6000
  - Willmott Dixon: [Steve.Preston@willmottdixon.co.uk](mailto:Steve.Preston@willmottdixon.co.uk) Tel: 01462 476610 or 07811 991574
  - Wates: [Gary.Baxter@wates.co.uk](mailto:Gary.Baxter@wates.co.uk) Tel: 0161 946 8800
  - Demo Homes: University of Salford, Professor Will Swan, [w.c.swan@salford.ac.uk](mailto:w.c.swan@salford.ac.uk) Tel: 0161 295 2585 Mob: 07876 580 189

### c) Final Reports

- i. For the Customer Survey Outline Report by the University of Salford please see Annex 4.
- ii. For the Evaluation report by Dr Graeme Sherriff, University of Salford please see Annex 5.
- iii. Following closure of project finances AGMA are in the process of submitting a final report to DECC/BEIS. This report will be made public upon approval from DECC/BEIS.

### d) Greater Manchester Green Deal and ECO Framework

The OJUE procured framework is still active and available for GM authorities to use. At present the framework is being used to deliver (£2M ring fenced for GM) ECO measures (boilers and insulation) to low income homeowners and private tenants, this current ECO funding is through Willmott Dixon and their utility provider E.ON. The framework is valid till 2019.

**Annex 1:**

**TABLE 1: Completed GDC installs per LA.**

<b>Local Authority</b>	<b>EWI</b>	<b>Soft</b>	<b>Total</b>
Bolton	155	14	169
Bury	29	59	88
Manchester	79	54	133
Oldham	121	2	123
Rochdale	218	252	470
Salford	37	0	37
Stockport	22	2	24
Tameside	71	9	80
Trafford	8	9	17
Wigan	154	7	161
<b>Total</b>	<b>894</b>	<b>408</b>	<b>1302</b>

**EWI: External Wall Insulation**

**Soft: Measures such as: loft, cavity wall, room in roof insulation; boiler installs.**

**TABLE 2: Households receiving more than one measure (a second measure was not counted towards our number of household target):**

	Combined Measures				
	EWI			Soft Measures	
Local Authority	EWI with 1 Soft Measure	EWI with x2 Soft Measure	EWI with x3 Soft Measure	Soft Measures - x2 Installed	Soft Measures - x3 Installed
Bolton	2	0	0	0	0
Bury	0	0	0	0	0
Manchester	2	2	0	2	1
Oldham	0	0	0	0	2
Rochdale	0	0	0	30	4
Salford	1	0	0	0	0
Stockport	22	0	0	0	0
Tameside	4	0	0	0	0
Trafford	1	0	0	0	0
Wigan	57	0	0	0	0
Total	89	2	0	32	7

**EWI: External Wall Insulation**

**Soft: Measures such as: loft, cavity wall, room in roof insulation; boiler installs.**

**Annex 2:**

**Greater Manchester GDC Project:**

**How Greater Manchester’s GDC project compares nationally in May 2016:**

***We are the only body to have completed the project. The national DECC deadline to complete was 31<sup>st</sup> March 2016, we had completed in March 2016.***

(Source DECC: Zillah Boraston, Home Energy, Zillah.Boraston@decc.gsi.gov.uk)

**Green Deal Communities area performance:  
installations to end May 2016**

	<b>Local Authority</b>	<b>% completed against final target</b>
90%+	Greater Manchester Ashfield Dartford Telford Eastleigh South Bucks	100% 99% 93% 93% 92% 90%
70-89%	Broadland Nottingham Woking Nuneaton Leeds Cambridgeshire Plymouth Haringey	88% 86% 86% 83% 80% 75% 73% 72%
50-69%	East Hampshire Suffolk Bath	67% 67% 59%
0-49%	Worcestershire Bristol	38% 26%

**Annex 3: Response sheet for customer query**

**Greater Manchester Green Deal Communities Resident Enquiries**

Thank you for your enquiry. The Greater Manchester Green Deal Communities programme has now completed. If you wish to contact your installer please see the below information.

In all instances, where viable, please refer to your customer reference number, providing your name, address and brief details of the works that you received, e.g. boiler replacement, external wall insulation etc. Thank you.

**Bolton, Bury, Oldham, Salford Residents (including Manchester DIY SOS):**

<b>Keepmoat</b>
Telephone: Helpdesk 0845 389 9563 Office Hours / 0800 2888 200 OOH
Email: <a href="mailto:bcnwcallcentre@keepmoat.com">bcnwcallcentre@keepmoat.com</a>

*Please note Bolton residents from the Slatersfield area please contact Bolton Council directly and not Keepmoat.*

**Rochdale, Stockport and Wigan Residents:**

<b>Wates</b>
Telephone: Customer Care 0800 0141 372
Email Address: <a href="mailto:Customercare.Livingspacewest@wates.co.uk">Customercare.Livingspacewest@wates.co.uk</a>
Webpage/website address: <a href="http://www.wates.co.uk">www.wates.co.uk</a>

**Tameside, Trafford and Manchester Residents (NOT Manchester DIY SOS):**

<b>Willmott Dixon Energy Services Limited</b>
<b>Steve Preston, Operations Manager.</b> Telephone: 01462 476610 or 07811 991574
Email Address: <a href="mailto:Steve.Preston@willmottdixon.co.uk">Steve.Preston@willmottdixon.co.uk</a>



**Greater Manchester  
Green Deal Communities  
Consumer Survey Outline Report**



**Prepared by the  
Applied Buildings and Energy Research Group  
School of Built Environment  
University of Salford**

**Prof. Will Swan**

**May 2016**

## **1.0 Introduction**

Greater Manchester Combined Authority (GMCA) secured £6.1M from DECC to deliver a Green Deal Communities Programme. The scheme was delivered by Greater Manchester's Green Deal and ECO Framework Partners. GMCA were the first in the country to meet DECC's target on the programme, and exceed it within budget. Over 1,240 GM households received energy efficiency measures, over 900 of these properties received external wall insulation through the programme.

As part of the work undertaken it was identified that an understanding of the customer experience would be helpful in the further development of retrofit programmes within GM. As this was not part of the initial scope of works, the study undertaken was designed to be a “light touch” to gain a broad understanding of the customer experience covering the process from initial contact to post-handover.

This report highlights a summary of the main findings from 183 of the properties within the Green Deal Communities Programme, from a total sample of 1240. This report provides the headline analysis, providing a descriptive overview of the data.

The survey was undertaken between January and April 2016 and administered by the University of Salford Applied Buildings and Energy Research Group (ABERG).

## 2.0 Methodology

The questionnaire was developed by the GM Green Deal Communities with the University of Salford as an added value exercise to attempt to understand the occupant experience of the retrofit installations delivered under the programme.

An on-line questionnaire was developed looking at the following key areas through a total of 17 core questions;

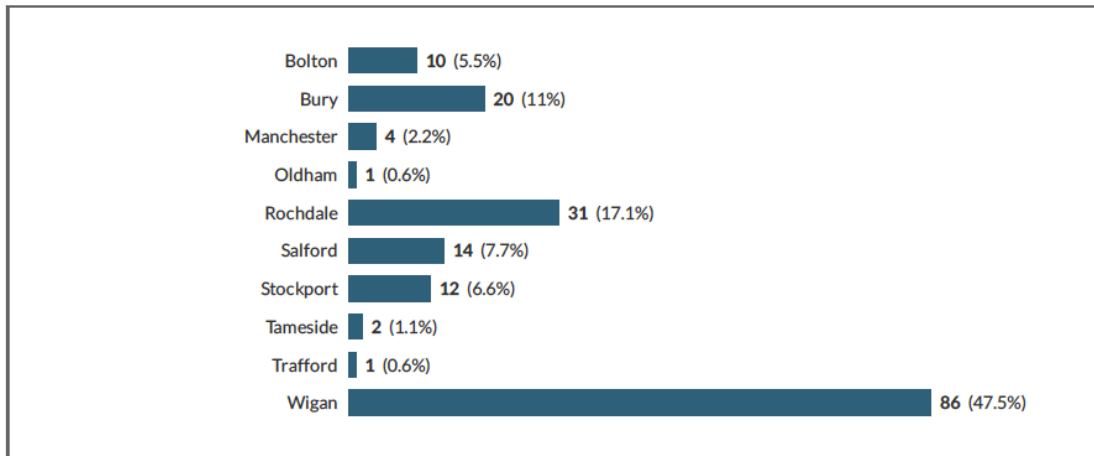
- *Location of the property* – to enable the identification of delivery partner.
- *Marketing channels* that drove the decision making process.
- *Decisions making* of the occupant in terms of reasons to go ahead.
- The *Green Deal Assessment* process and offer to customers.
- The *construction process* in terms of customer experience.
- The occupant view of the *post-construction* period.
- The occupant view of the *delivered retrofit and its benefits*.

The questionnaire was delivered with a mixture of paper and on-line approaches, due to some occupants being identified as having limited access to the Internet. All partners were provided with a link and a paper version, which was then uploaded to the main site. It was determined that individuals should not have to identify their tenure as this may lead to clear identification in some areas, which was considered undesirable – however the options to provide this information was made available.

The data was anonymous, but in some cases individuals volunteered their details for follow up studies. The project followed the University of Salford ethical procedures.

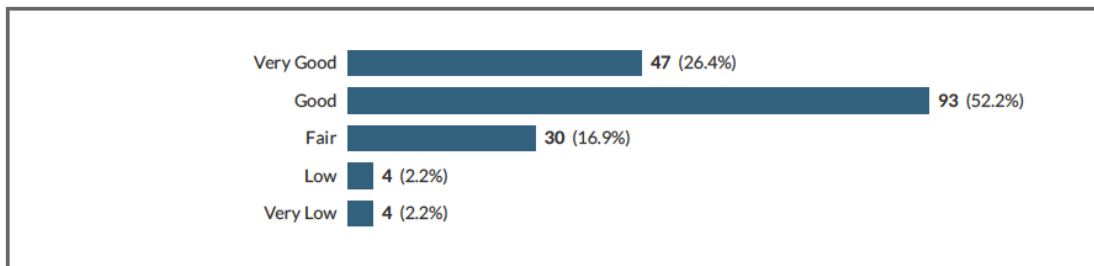
### 2.1 About the Sample

The overall response rate was approximately 14.8%. The local authorities and construction partners, depending on the authority, recruited the sample. It is identified from the responses from the different authorities that only those who had active local authority partners engaged with the process fully. This means that there is a clear skew towards those areas where there is an active local authority role within the delivery of the project (Figure 1). This is particularly prevalent in Wigan (47% of responses) and Rochdale (17% of responses). Where construction partners were the predominant means of data collection, the responses are generally lower.



*Figure 1 – Responses by Local Authority Area*

In addition to understanding the location of the property, we were also interested in the current knowledge that the participants felt they had in terms of energy efficiency and their homes (Figure 2).



*Figure 2 – Responses by level of energy efficiency knowledge*

While this is self reported and can be subject to some positive self reporting, it does tend to indicate that the participants, on the whole, considered themselves to have good or very good knowledge with regards to energy efficiency (77%). This does potentially indicate that early adopters of retrofit will be inclined to have higher levels of understanding of the issues associated with their properties energy consumption.

### 3.0 Findings

The following section addresses the main findings that cover the period from initial engagement, and the decision-making behind their choices, through to the post-occupancy period and considerations of outcomes.

#### 3.1 Marketing and Engagement

In terms of marketing and engagement the first question identified the key channels that were used to find out about the Green Deal Communities Programme (Figure 3). By far the most common method was direct mail (36.6%). This was defined as a letter directly addressed to the occupant. Other mail driven approaches, which were not directly targeted at a named occupant such as printed media were also relatively successful (16%). The other most successful method was through door canvassers (25.1%).

Other methods, such as phone (2.3%), internet and social media (3.4%), press (2.3%), referral agencies (1.7%) and events (1.7%), were deemed to be less successful. However, friends and family as an informal channel did have some impact (11.4%)

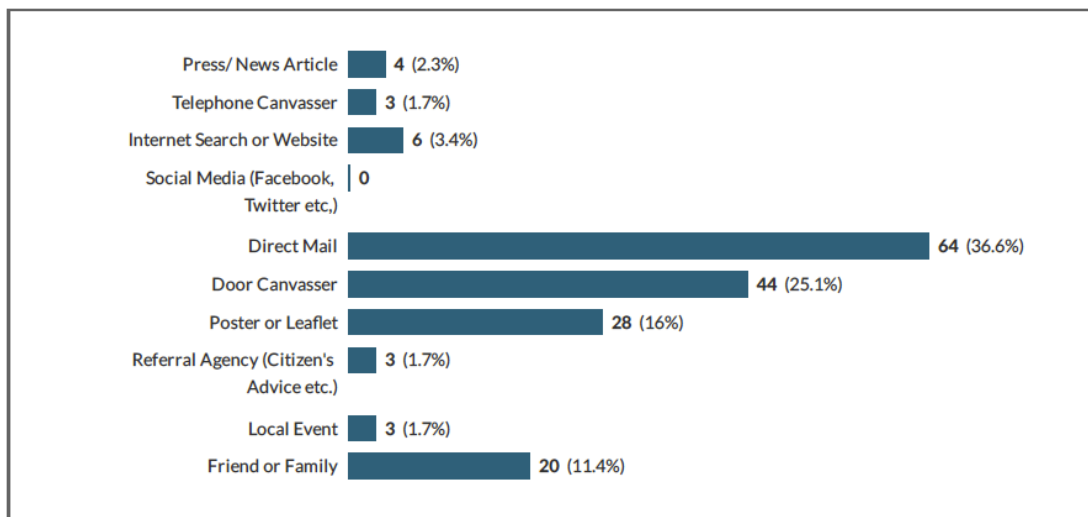
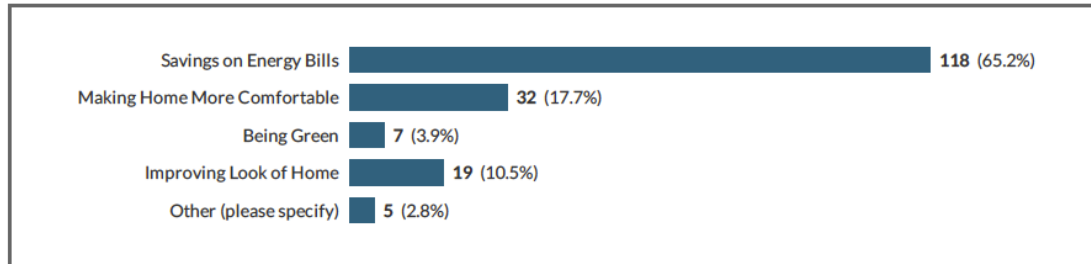


Figure 3 – Main Channels to find out about GDC

This does have some implications for future working on projects of this type. While some of the other channels are cheaper, it does seem that direct named contact and “boots on the ground” are the most effective. The role of friends and family is also interesting as this does show the impact that reputational issues may have.

In making the decision to engage with the programme (Figure 4) it is clear that energy efficiency seems to be the main driving factor (65.2%), with comfort also being of concern (17.7%).

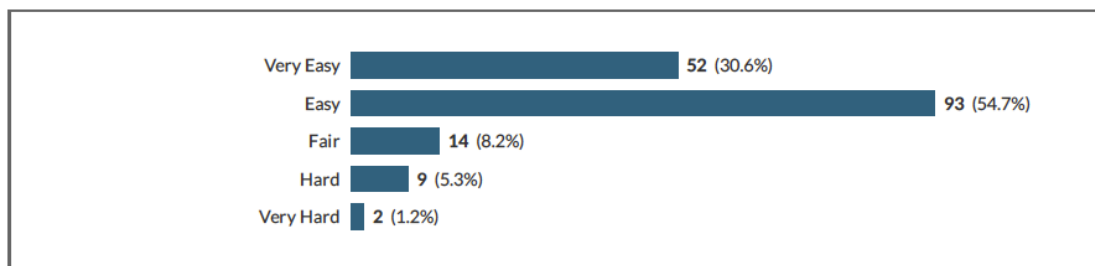


*Figure 4 – Main reasons for choosing to have improvements.*

The comments supporting this question highlighted that some owners, including one landlord wanted to improve the quality of the home, while two social housing residents identified that they were not part of the decision making process.

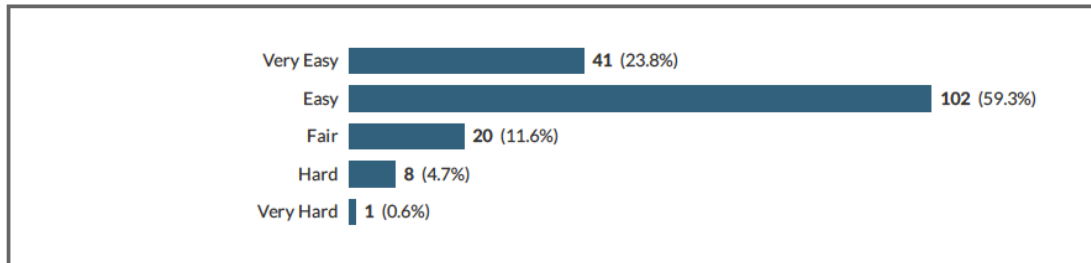
### 3.2 Green Deal Assessment Process

Generally, the respondents felt that getting a Green Deal Assessment for their homes was very easy (31%) or easy (54%), as shown in Figure 5. This is a positive response in terms of the processes that were established to ensure communication with occupants was well managed, with only 7% feeling that there were difficulties. This does still identify that for future programmes, this process still needs close management.



*Figure 5 – Ease of getting a Green Deal Assessment*

Once the assessment was delivered, the respondents were asked how easy they found it to understand (Figure 6). 83% found it easy or very easy, with 5% finding it difficult. This was generally considered positive – this may well align with the fact that many individuals felt confident they understood energy efficiency issues.



*Figure 6 – Ease of understanding the Green Deal Assessment*

This data should be considered in light of external studies to see if there is any difference between previous studies and these current findings, which suggest a positive view of access to the information in the assessment.

In terms of the available options, the respondents were asked if they would have liked improvements that were not available to them under the programme. 30% stated that they would have liked additional improvements. When asked to comment the following themes in the responses were identified.

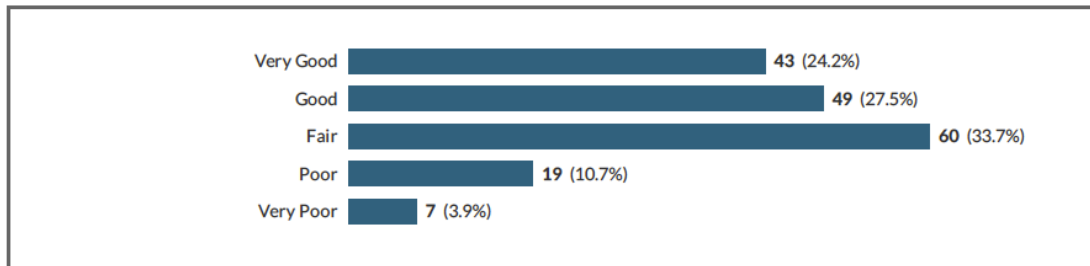
- There was a clear demand for doors and windows to be included in the process.
- Boilers were often requested.
- Additional non-energy related improvements were also often requested – these were often maintenance issues or corrective work.

There is potentially an opportunity for occupants to have other works done while their energy improvement work is undertaken. Maintenance issues are a particularly important area; where flexibility to have additional works done may be beneficial to the occupant and the builder in terms of additional works that might be carried out while on site. This could suggest some more flexibility in future programmes that allow individuals to wrap other unfunded work within programmes.

In terms of clarity of pricing 83% of respondents found the pricing clear, with a further 9% identifying the costing as fairly clear. However, this does indicate that a small minority (8.1%) did not find the costing clear. The reasons for this are not picked up in the survey – the issue may be contractor led, or indicate issues on the part of the householder.

### 3.3 Construction Process

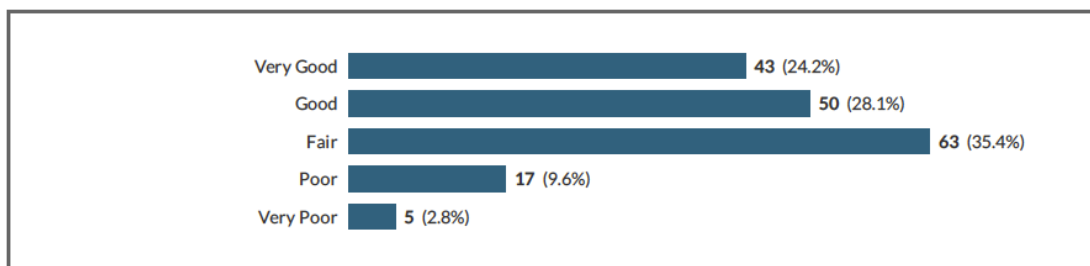
During the construction period the respondents were asked a series of questions related to their engagement with the contractor (Figure 7). The first of these questions concerns communication with the contractor about the project.



*Figure 7 – Quality of communication with contractor about project*

While 52% of people felt that this was good or very good, a significant number felt that it was fair (34%) or poor/very poor (15%) – this is possibly driven by the nature of the contractor and their associated supply chains who had less experience in the domestic setting and were therefore more used to dealing with social housing asset managers. This data would need additional analysis to identify the connection between this issue and tenure.

This pattern is also repeated in the question with regards to concerning information related to the improvements (Figure 8).

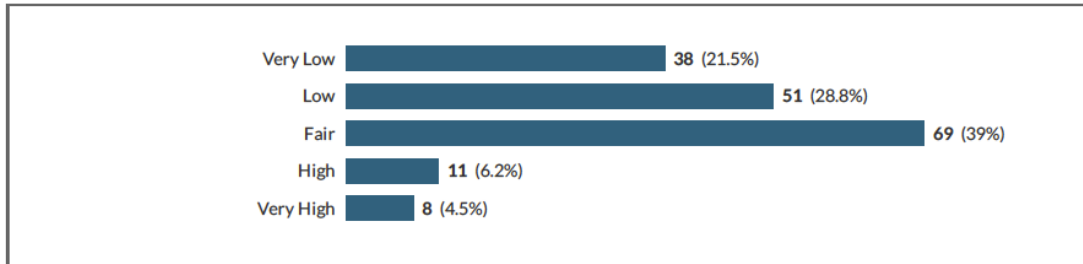


*Figure 8 – Quality of communication about improvements*

Again, this was felt to be an issue with the tenure that many organisations involved in delivery were used to working in as social housing generally has less need for direct communication with clients, a role often taken by the housing provider.



In terms of disruption (figure 9), it was generally viewed as very low (21.5%), low (28.8%) or fair (39%). This is probably reflective of the nature of the work undertaken, with very little work substantively taking place within the home for long period of time. Further analysis would be required to better understand the implications of disruption.



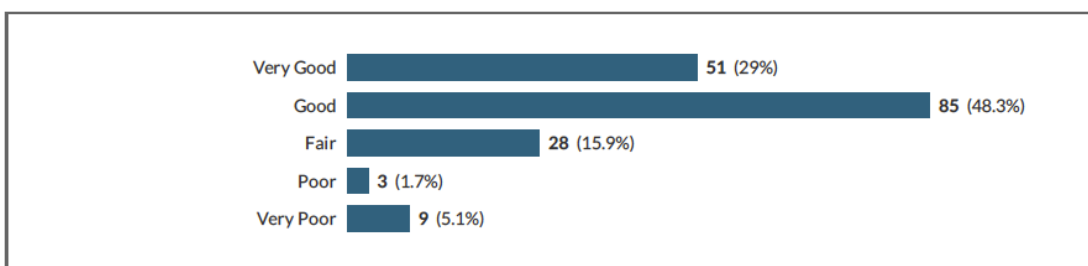
*Figure 9 – Level of perceived disruption*

Overall, there appears to be some issues around communication with the occupant. The picture is not poor overall, but indicates that some improvements in practice could allow the process to be managed more effectively.

### 3.4 Post-Construction and Handover

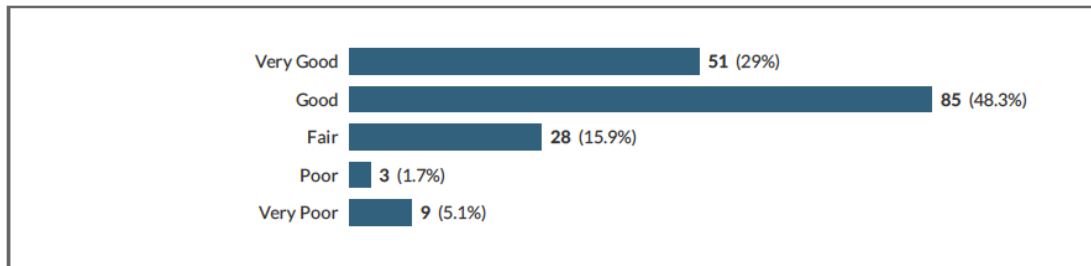
The post-construction and handover period looked to establish the view of the customer in terms of the quality of the work and support during the handover period.

In terms of the quality of work (Figure 10), 77.3% of the respondents rated the work is good or very good, while 6.8% rated the quality of the work as poor or very poor. Without direct observation of the sites it is difficult to establish the reasons for this, however, it does indicate that there are issues in a small number of properties.



*Figure 10 – Quality of final construction*

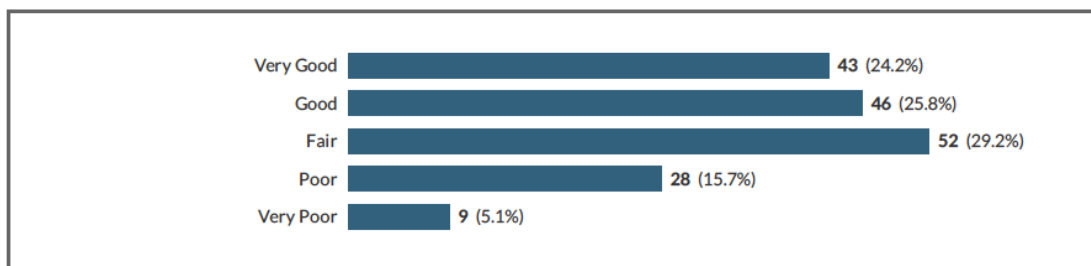
In terms of the provision of handover information, the respondents rated this process as shown in Figure 11. 77.3% of the respondents identified that this was good or very good. There is a minority of respondents (6.8%) who felt it was poor or very poor.



*Figure 11 – Quality of handover information*

While, this does not seem large, it does present an opportunity for better understanding handover and considering this process in more detail.

In response to post-completion support from the contractor, as shown in Figure 12, the responses are more varied. While 50% felt they had good or very good service, there is a significant minority (20%) who had poor or very poor service. As with handover, this does indicate that service standards after completion are an opportunity for development.

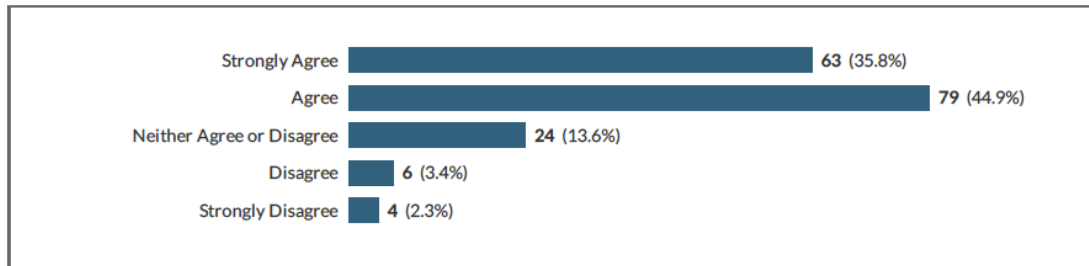


*Figure 12 – Post completion support from contractor*

Overall, while the issues of post-completion support do not tell a particularly bad story, but it is clear there are issues for a number of households that have not been well supported. How retrofit is supported after completion remains an issue worthy of some further consideration.

### 3.5 Customer Outcomes

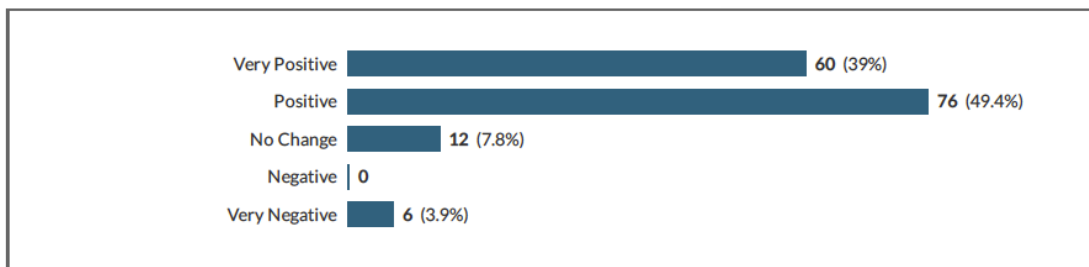
Consumer outcomes are the category of questions that deal with the respondents view of the delivered retrofit. The first question addresses value for money (Figure 13).



*Figure 13 – Value for money*

Overall, the view was that the improvements did generally provide value for money for 80% of the respondents. However, an examination of comments does indicate that the level of subsidy provided did drive many of these responses. Where people did not feel it was value for money, it usually was driven by issues of quality of work or issues of engagement with the contractor.

The next question was concerned with whether the respondents felt the retrofit of the property had a positive or negative impact (Figure 14).



*Figure 14 – Impact on property*

Here 88.4% of respondents felt that the impact was positive or very positive. A small number felt the improvements were negative and these tend to correlate with individuals having issues with regards to the quality of the work.

The comments for this question, where positive, indicated that issues of comfort, quality of finishes and issues of reduced condensation were the main issues. Negative comments centred on quality of the build and unresolved remedial issues at the time of the study.

In terms of the main benefit, as shown in Figure 15, energy efficiency remained the most highly rated improvement (40.3%). What is interesting about the responses is that the look of the property became the second most important issue (28.7%), something that was not indicated in the decision making process.

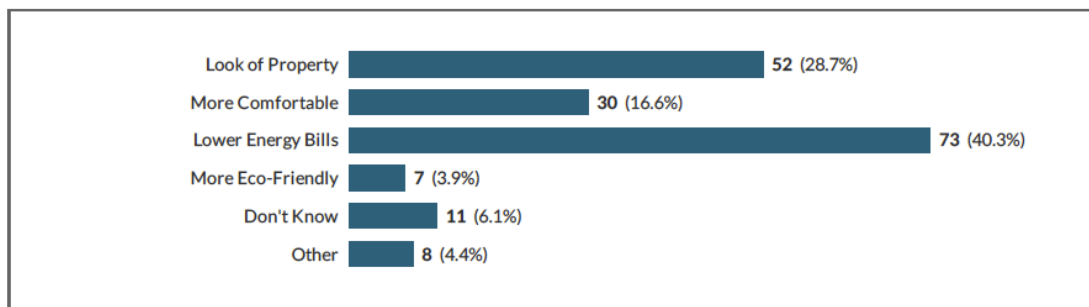


Figure 15 – Main benefit of the retrofit

## 5.0 Conclusions

The overall findings indicate that, while for the vast majority of individuals the retrofit process was a good experience, there are still issues to address.

In terms of communications it is clear that direct and personal contact appears to be the most successful, with newer channels, such as social media making little impact. It is also clear that the sample had a specific interest in energy efficiency, which may have led to a better understanding of the wider process.

In terms of the occupant experience, it is clear that there is some work to do around communications with the client and after care, something that may be highlighted in the forthcoming Every Homes Matters Review. If work is to be undertaken at scale in the city, it does seem that standards of client care and communications, which while good in many cases, could bear review and development.

It should be noted that the sample is skewed towards those boroughs that had active local authority engagement, so it is not entirely clear as to the experience in those areas that had a more contractor led solution. This does bear further more detailed analysis. In addition, follow up work with regards to living with retrofit may be beneficial, as many individuals interviewed were just in the process of handing over or had recently had their properties improved. A longer-term view may better focus on the benefits of living with the changes in their property, as well as highlight issues that may not have materialised for the occupants.

The study was undertaken as a value added exercise and as such, this has limited some of the detailed analysis that may be undertaken. However, the response rate does give a good overview of experiences and outcomes. It is clear that in further work of this nature, a more detailed evaluation would give more detailed guidance on the development of future programmes.

**Annex 5**

**Green Deal Communities Retrofit in Greater Manchester  
Lessons Learned Study**

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# Introduction and Context

## **This Report**

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This document reports on a non-technical study of the Greater Manchester (GM) Green Deal for Communities (GDC) programme that aimed to identify process issues across the key actors involved and to understand how these issues impacted upon delivery, in order to understand the nature of these impacts. Issues of concern included the extent of retrofit delivered and the occupant experience of the retrofit process. This report provides a high-level summary of these issues and puts forward a set of lessons learned from the programme that can inform the future delivery of retrofit in GM.

After outlining the methodology, this report discusses issues arising from a set of interviews. It begins with the national and local contexts and then looks at the governance structures in place for the programme. It moves onto programme delivery, including recruiting householders, particular challenges with the private sector housing market, the shifting funding context, soft measures, demo homes, technical challenges and data issues. It then turns to the householders, considering their motivations and understanding their experiences of the retrofit process. After consideration of some wider strategic issues, it summarises key points in the form of lessons learned from the programme.

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## **Domestic Retrofit**

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With 70% of UK building stock existing in 2010 expected to still be in use in 2050, strict low-carbon standards for new build cannot in themselves meet substantial carbon reduction ambitions for the stock as a whole. Retrofitting the current stock is therefore an essential part of a mitigation strategy. 'Sustainable retrofit' can be understood as the process of upgrading building fabric, systems or controls to improve the energy performance of homes (Brown, Swan and Chahal 2014). It is important to understand this as a socio-technical process that involves not only these physical elements of the home, but also a range of ownerships and tenures. Its implementation is also likely to involve construction companies and local authorities.

In their GDC project, GM sought to engage with the diversity of the private sector housing market (owner-occupied and privately rented housing) with a view to making retrofit an attractive product for them. This built upon previous experience of coordinating retrofit schemes in the conurbation for homeowners and private rented stock.

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## **Green Deal Communities**

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In 2013 DECC invited local authorities to apply to the Green Deal Communities fund. This fund aimed to 'maximise the delivery of Green Deal Plans across whole communities/streets including to hard to reach sectors' (DECC 2013). Local authorities were encouraged to put forward 'ambitious and innovative' (DECC 2013) proposals to deliver Green Deal Plans to a large number of properties in target streets and areas. The plans would be dependent on the

applicants securing additional ECO funding to complement the Green Deal and on the creativity of the local authorities in offering local incentives. The GM authorities submitted a successful combined bid to this scheme to continue their retrofit work and to work with three commercial partners across all ten local authorities.

The GM programme was delivered by the ten local authorities with three commercial partners – Keepmoat, Wates and Willmott Dixon – and their subcontractors. It was coordinated by the GM Domestic Retrofit Programme Board, on which sit local authority and GM Combined Authority representatives along with individuals from research and practice in advisory capacities. The scheme consisted of an extensive programme of predominantly external wall insulation (EWI) retrofit in houses along with ‘soft measures’ in others – defined by a list of other permissible measures (see Appendix X).

The scheme also involved a set of demo homes and mini show homes, which were intended to provide prospective customers with exemplars of what was possible on their homes. GM’s target (set by DECC) was to have 1,205 household signups by 30 September 2015. By this date, 1,242 GM residents/households had signed up for Green Deal Community installations and 537 of these installations had been completed. As of the end of February 2016 the programme has seen over 1,070 installations, of which 800 have been EWI and the remainder soft measures.

In the national context, GM’s programme can therefore be seen as successful as GM is one of only three conurbations that have achieved their signup targets and only seven that have achieved over 90% of their targets. As of December 2015 it was the only area to have achieved 82% of its installations. Nationally, 27 authorities were awarded Green Deal Community funds, with 19 going forward with the programme and the remainder returning the funding to DECC.

## Methodology

The research comprises a qualitative study that seeks to understand issues arising through the GDC process by means of interviews with key actors. The interviews have been transcribed and analysis carried out using a grounded approach with qualitative analysis software. This is an established technique within applied settings for identifying emerging themes and areas of disagreement and provides a thorough approach for the development of themes and concepts whilst maintaining a transparent audit trail.

The data collection comprised 18 semi-structured qualitative interviews:

- four of these were with local authority staff;
- one was with a staff member of the GM Environment Team;
- two were with GM Domestic Retrofit Programme Board members;
- three represented the commercial partners;
- two represented companies subcontracting to the commercial partners;
- one was with an external consultant acting as a technical advisor to the programme, particularly in the early stages, having been contracted by the University of Salford;



- two were with members of staff at DECC – it is worth noting that they had not worked in DECC for the whole of the programme;
- three were with private householders who had had EWI installed on their homes, but had not participated in the demo homes element of the programme, two of whom had paid towards the works on their homes, and one had received the improvements for free.

It should be noted that the three interviewed householders reflect a very limited sample of the approximately 1,000 householders who received improvements. Rather than presenting a representative study, therefore, their views provide indications of the types of issues that are likely to have arisen across the participant base. The three householders were selected from those with whom staff had been in touch in a telephone survey to make final checks that the works were complete. They were selected to give a range of viewpoints: one broadly happy with the work, one with some concerns, and a third with stronger concerns. Two of the residents had paid towards the works on their homes, and one had received the improvements for free. The three residents fell under the responsibility of two of the three commercial partners.

Two of the four local authorities interviewed had some of their own funds to supplement the GDC money. An additional local authority, which had comparatively limited funding and staff resources to commit to the programme, was contacted for an interview but was unable to participate.

It was beyond the scope of the study to interview representatives of all of the ten GM boroughs. A selection of four was chosen to give a spread of allocated commercial partners and experiences in consultation with the GM Domestic Retrofit Programme Board.

In addition to the interviews, the research has drawn upon available documents – principally GM Domestic Retrofit Programme Board reports – and attendance at three board meetings.

## Findings

### Programme Context

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#### ***The Greater Manchester Context***

To some extent, GDC can be seen as a continuation of ongoing work in GM, both as a combined authority and as individual local authorities. Programmes such as ‘Get Me Toasty’, which made home insulation available, and ‘Green Deal Go Early’, which worked with owner-occupiers and social housing to carry out multi-measure retrofit, provide a precedent and mean that there is expertise and experience at GM and borough level. Local authorities had ongoing schemes, which, as discussed further below, had increasing relevance as GDC progressed. GM also has a climate strategy that includes recognition of the inefficiency of current building stock and the importance of ‘Taking the economic opportunity to be a leader in this fast-growing field of “green retrofitting construction”’ (GMCA 2011, p 29). One interviewee summarised this situation, arguing that GDC was ‘*partly to assist us towards our carbon reduction targets and to assist with the combating of fuel poverty*’.

In a minority of cases local authorities had their own funding programmes and were able to make connections with GDC. This interviewee, for example, explained the relationship for their local authority: *'We already had a project in place, so we tagged it onto what we were already doing. The GDC offer became a part of the Warm Homes scheme'*.

### **The National Context**

Notwithstanding this continuity with existing GM activity, GDC reflected particular strategic aims at a national level. DECC's original primary intention related to the Green Deal Finance (GDF) programme and its wish to further test and boost take-up in the owner-occupier market. The emphasis was on a community- or area-based approach, which in this context implies a coordinated approach with groups of households and involving local authorities. One interviewee described this as *'testing how we can utilise a community-based approach to figure out how Green Deal Finance could potentially work in the private housing market'* and another mentioned the importance of *'normalising retrofit as a consumer product'*. Bearing in mind that national construction businesses such as the three commercial partners in GDC are not 'household names' amongst home owners, it was considered prudent to work through trusted organisations such as local authorities and community organisations.

Interviewees alluded to a fluid national context, highlighting the challenges this presented to the project: *'DECC were fairly insistent on doing it one way, then they moved the goalposts and changed it'*. One example of this that was given was that targets and timescales changed at several points throughout the programme.

This was seen to reflect changing personnel and changing policy priorities at DECC and also a degree of learning and reflection. The original emphasis on GDF, for example, was challenged and ultimately reduced, and the legality of stipulating one method of finance was questioned. A positive side of this was that it enabled the GM authorities to be more flexible with their approach, because the local authorities had expressed concern that GDF was not an appropriate option for households with more limited income and capital: it meant that *'when DECC were allowing us to be a bit more flexible with the funding we were able to target the fuel-poor customers with the Green Deal Communities funding'*. There was some recognition that this flexibility reflected learning at the national level: *'I think they learnt from [local authorities] and some others must have requested similar things, so then they did ask us how we were working with the fuel-poor and they modelled their revised criteria around that'*. It was, however, noted that the delays in arriving at this decision were frustrating in an already tight programme and local authorities reported that they would have preferred to have this direction from DECC from the start.

Other elements that reportedly changed were the minimum number of soft measures allowed per house and the emphasis on a whole-house approach. Interviewees reported that an initial focus from DECC on multiple measures per house to achieve deep retrofit seemed to transition into pressure for the number of households signing up, i.e. the number of houses receiving at least one measure rather than the extent of retrofit for each participant. It was implied that the reality of the budgets and targets necessitated this approach: *'with the money that we had, if we did whole house we would not hit that target'*. Alongside these

changes within the GDC programme there were changes in funding regimes, particularly ECO and GDF, which will be discussed in section 0.

These considerations, and the changing context, are important not only in understanding the challenges faced in delivering the programme but also in assessing the overall level of success of the GM programme. Fundamentally, as several of the interviewees observed, there was very low interest in the actual GDF offer and only a small number of households signed up to this. As discussed below, when GDF was effectively cancelled by national Government in July 2015 this created problems for those who were in the process of receiving this. However, GM's GDC programme met its targets for householder signups more effectively than any other of the participating UK local authorities. As a partner argued: *'in terms of a programme to get solid-wall housing in Manchester insulated, it was an extremely successful programme'*.

The national context, therefore, both in terms of the specific aspects of the Green Deal programme and changing Government retrofit policies and funding regimes created challenges for those delivering GDC in GM and meant that progress was relatively slow at the start of the programme whilst the parameters of the scheme were being clarified. The emphasis of the programme changed in the early stages from deeper retrofit, i.e. a multi-measures approach, to a focus on a target for signups and installations, which centred around EWI.

## **Programme Governance**

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### ***Governance and Local Authorities***

As a GM-wide programme, GDC required careful coordination and it is clear that the spatial scale and multi-agency governance and delivery structure presented challenges. The GDC programme was led by the GM Domestic Retrofit Programme Board, with the ten local authorities and the three commercial partners. Although the programme brought funding with it, local authority interviewees expressed concern about the uneven nature of the 'offer' to residents across GM, as authorities had different amounts of staff and financial resources to support the programme. One of the commercial partners observed this interaction, commenting positively on the potential for information exchange:

*We had ten local authorities, all at different levels in terms of knowledge, in terms of different staffing and in terms of past experience, and having AGMA there helped to level it out, so the ones that didn't know what to do could learn from the experienced ones and the ones that had already done it in a big way could learn from people who had done it in a different way.*

A board member recounted that, as with every GM project, there were some difficulties in working across the ten authorities: *'there is always a tension between the GM team and the local authorities, our role is to try and support and engage with ten local authorities and you can't please all of the people all the time'*.

Despite the cooperation and GM-level coordination, it was not possible to develop a unified offer across the whole conurbation as the authorities had different levels of staff and financial

resources to contribute. Some additional funding was made available to local authorities, but an interviewee recounted that little of this was taken advantage of.

Those authorities that were better equipped to quickly identify potential signups were able to get more of the resources. An interviewee reflected on this: *'but there's no doubt that those local authorities that had additional officer time to help identify suitable candidates for work got the majority, not doubt about it. And therefore, conversely, those local authorities that didn't have that resource had less, and that's because they had less time and effort to put in to working with the contractor to identify suitable households'*. One local authority interviewee, for example, had found that their allocated commercial partner was being slower than expected in locating suitable properties and recruiting householders, yet they did not have the capacity to step in and help out with this 'on the ground', whereas they were aware of other local authorities being able to do that. At least three local authorities were able to offer the work at no or minimal cost to the householder by using local authority capital funds made available to assist fuel-poor residents and areas with a large proportion of households in fuel poverty.

One local authority interviewee mentioned that the expectation to attend GM-level meetings for the programme was time-consuming and made them feel less connected to the project than they otherwise might have. There is no evidence to suggest that this was a concern shared by other local authorities, but it is a consideration for conurbation-scale programmes such as GDC.

### **Commercial Partners**

Before plans for GDC were finalised, a framework for retrofit in GM was created with a view to simplifying the process for local authorities to carry out household improvements and to maximise the potential to apply Green Deal and ECO funding across the boroughs. Following consultation with the ten local authorities and the three commercial partners, each commercial partner was allocated a set of boroughs to work with.

In delivering GDC, the commercial partners chose to subcontract substantial parts of the work, including resident recruitment and installations. Interviewees were divided on the ultimate suitability of the type of commercial partner contracted for the programme. Any concerns must of course be understood within the context of GM meeting its targets for signups and doing so more successfully than other areas. Although their lack of experience of the private housing sector may prompt criticism, one interviewee reflected that: *'in fairness to them they've actually done quite well, given they've got no experience in this market and working in this way and it's not profitable'*.

Views on the choice to use national-scale commercial partners for the programme varied, and can be grouped into two camps. On the one hand, the extent of subcontracting added to costs, eroded transactional transparency and arguably exposed the lack of experience of the partners in the private housing sector. In this sense, it was argued by one interviewee, an opportunity was missed for the GM authorities to work directly with local contractors with more experience of working with householders and therefore build local capacity and supply chains. On the other hand, a programme of this nature required a degree of stability and risk minimisation, which could be provided by these national concerns: *'In the last year we've*

*seen many companies that perhaps people would have argued we should have gone to directly go belly-up. From a risk point of view it was probably the right decision'. A commercial partner added that they are likely better placed to forward-fund such work with such a large project.*

The views of local authority interviewees on their respective partners ranged from frustration at experiences of delays and lack of communication, and a feeling that they were simply paying the partner a management fee but dealing with subcontractors, to a more positive sense of a reasonably constructive working relationship. To an extent these are typical of the challenges faced in delivering a multi-actor programme across multiple boroughs, but they do indicate that there were times when the governance arrangement and the ways in which the framework was set up made these challenges particularly acute.

One, for example, described a process of having to put pressure on their allocated partner as work was not progressing. Another felt disconnected and this made this process particularly difficult – *'you're too far removed from that subcontractor role and you don't really know exactly what's gone wrong'* – and also noted the potential for conflicting priorities – *'a partner is going to add on costs and management fees, and they want to meet their own ECO types. Two really conflicting priorities, I think. It's never worked'*.

There were two specific challenges that added to the task of the partners. The first of these was changes in the availability of ECO funding as the programme started compared with when the partners were bidding into the framework: *'when these companies put their bids in, ECO was good. There was money there to be made; there was money to help residents. Then, suddenly, overnight, it just went. So these partners found themselves in a relationship where there is not a very great national incentive'*. It is worth noting that the availability of additional ECO funding was a written expectation in the GDC funding application process (DECC 2013). As discussed in section 0, this directly impacted upon householders but also *'damaged confidence'* in a more general sense.

The second issue was the emphasis in engaging with the private housing sector, whereas the partners' experiences of retrofit were primarily in the social housing sector. This more familiar territory would have had a range of benefits including economies of scale in working with consistent housing types, which had been subject to consistent programmes of work over time, and working with a limited number of social landlords rather than a multitude of individual householders with their own preferences and personal financial investments in their home. The implications of this for delivery are discussed in section 0.

This partner was open about the nature of this challenge: *'... as an organisation we don't traditionally deliver solely in private housing. So when you're working with a social housing provider you know the number of properties. You get given the addresses and all of the details, where[as] this became a B to C [business to consumer] role. So we were engaging with individual private householders, cold calling, door-knocking...'*

There is some disagreement about the extent to which this was clear at the start of the programme. This may be a result of the partners entering the process as the framework was being developed rather than when GDC itself started, as this partner interviewee implies: *'... my understanding was that when we were initially engaged it was primarily to deliver*

*social housing but also to deliver in private households, but with the Green Deal Communities funding it became a purely private household scheme’.*

It is also the case, as one interviewee stated, that the managers who tendered for involvement in the programme were not the same people who were tasked with its implementation. They suggested that during their experience of liaising with the commercial partners they found evidence of a lack of systematic briefing and training among the businesses and, in turn, their subcontractors. Local authority interviewees recalled feeling that the partners had not fully grasped this, mentioning that the private housing had been perceived as an add-on and implying that this had contributed to delays at the start of the project.

## **Programme Delivery**

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### ***Recruiting Householders***

Identifying and recruiting householders to take part in the scheme proved extremely challenging. Whilst some interviewees attributed this to the commercial partners’ lack of experience and preparation, it is fair to say that this was also a relatively difficult area for the local authorities. Where local authorities had previous experience of this market they had found it extremely challenging and in some cases expertise had been lost as staff members had moved on. The interviews gave the impression of a fairly ad hoc and experimental approach to householder recruitment and several of the interviewees directly allude to this. A board member reflected on this: *‘The understanding of the process I think was not good either from GM’s side or from the contractors’ side and they were trying all sorts of different things because actually neither one had really experienced dealing with the owner-occupier market in this way before’.*

The GM Energy Advice Service, a phone line for enquiries on home improvements and energy efficiency, was seen as an important recruiting tool initially, although it was disbanded early on in the programme. However, the interviewees described more targeted measures such as door-knocking and leafleting approaches to recruitment. One partner expressed concern that a conurbation-wide advice line was not necessarily the most suitable approach: *‘The problem is that you’ve got people ringing in from all over [Greater] Manchester wanting different insulation measures doing to the properties. The volume of calls that we would get became unmanageable. Also it doesn’t allow effective delivery because it’s very random. You don’t get clusters of properties’.* Additionally, some individual local authorities were able to draw on their own databases of householders who had expressed interest in energy efficiency improvements.

Interviewees identified two factors that made the recruitment process particularly challenging. Firstly, householders had become accustomed to receiving insulation measures for free, whereas GDC often involved a contribution from them. This pitted energy efficiency improvements directly against other home improvements. Local authorities and partners alike expressed scepticism about residents’ propensity to engage: *“You’ve got to pay for this”; they’re looking and thinking, well, do I want a new kitchen or a new bathroom or do I want my cavity insulated’; ‘They’re not going to start putting their own money, which they haven’t got anyway, into energy efficiency measures’.*



Secondly, and related, was the past record of jobs reportedly carried out to low standards by companies operating on the basis of previous government funding: *'So shoddy jobs, a lot of jobs not done, a lot of instances where they've been happy to just take the survey fee and run away. All sorts of stuff's gone on, so knocking on the door is just another set of people knocking on my door with the same old tripe.'*

In mitigating these, the relationship with the local authorities was important, with local government appearing to be a known quantity in a way that the commercial partners were not. Partners who were speaking directly to residents were able to benefit from the credibility of the local authority involvement: *'I think it does work that you've got the trusted body as the council knocking on the door... I think people are so wary now with people knocking... I think we've lost a lot of public faith in energy efficiency measures with people knocking on the door'. 'The fact that I could reference the local authority and the local authority would have resources there within 24 hours or would be able to call within 24 hours, that made my job much more straightforward'.*

Conversely, when previous retrofit work had been well carried out and had been positively received, this had a positive effect. Some areas had had EWI schemes before on social housing properties and owner-occupier neighbours were able to see: *'we had neighbours living next door who could talk to a next door neighbour and find out... the benefits of having EWI; how much warmer the home was, how much cheaper it was to run'*. Once installations were started and residents saw the improvements to their neighbours' homes, this helped to build momentum in signups and increased the interest in communities. This local authority interviewee recounted a call from an elected member that evidenced the extent of interest in the community – *'I've been out walking round my area; I've got a list of the solid wall block for you' – and residents phoning 'You've done that block, when are you doing mine?'*

Local authority connections with householders were useful in building momentum, as this local authority interviewee describes: *'Oh, I'm glad you've signed up now, we're still struggling a bit with Mrs Jones.' 'Mrs Jones? I know Edna, I'll go and see her.' 'Can't get the guy at number 16, he won't talk to us, he won't come to the door, it's his wife all the time.'* *'Oh, I know Abdul, hang on,' then the mobile phone comes out. 'Abdul, what you doing? Come down here now,' and so building up those contacts and getting it rolling like that.*

A further issue, particularly earlier on in the programme, was the number of potentially competing funding streams and organisations trying to promote them. The Home Improvement Fund, for example, was *'very confusing for people'* and it *'used to turn up and then disappear'*, doing this several times during GDC. This local authority interviewee described how the GDC partner was targeting the same estates, because it was clear which estates would benefit from the work: *'They were knocking on the same doors and residents were just getting so confused, because they were getting sometimes canvassed off three or four companies...'*

Additionally, the interviews suggest what could be described as a 'false start' for resident recruitment in some areas and it was felt that this reflected the changing context created by DECC and the operational possibility of the programme becoming clear, in particular in terms of what the partners would be able to deliver with the allocated budget and time available.

With the initial focus on GDF, for example, one local authority interviewee explained that they initially looked towards areas of more affluent householders in an area with a lot of stone-walled properties with hard-to-treat cavities for which local authority grants had not previously been available – *‘GDC was initially meant for people who were... able to contribute to the measures’*. Their view was that it became clear that *‘half the partners weren’t able to tackle individual requests and such individual house types’* and that *‘the programme wasn’t able to deal with that for various technical and management reasons’*.

In a second case, the local authority had put time and effort into locating suitable homes in the initial stages, but their allocated commercial partner had been unreceptive. The local authority had organised recruitment events but stated in the interview that the contractor had not followed them up. Following difficulties in getting traction with the partner and further delays in seeing the appointment of a subcontractor, they felt there was no longer time to be able to follow up with these individual households. The authority was able to make the scheme work in another area, which implied that the delays limited their ability to be strategic in their choice of housing: *‘[it] wasn’t first choice as far as I was concerned but it was a case of if we’re going to try and deliver something it was an obvious hit’*.

### **Private Sector Housing**

As mentioned in section 0, a particularly challenging element of the programme was working with the private sector. Public sector-coordinated installations of EWI in GM have been primarily in the social housing sector, and this work with owner-occupiers therefore presented challenges across the different organisations involved. For the commercial partners, this created a relationship fundamentally different from the more familiar social housing, a business-to-consumer rather than a business-to-business relationship with multiple household contact points rather than a more limited number of social housing providers, and with preferences dictated by individual tastes and budgets rather than a registered provider’s business strategy. As this local authority interviewee said: *‘...the general public are difficult to deal with. Swapping and changing their mind, not understanding what they’re getting, whereas when you’re dealing with a social landlord you’re actually dealing with a social landlord, not individuals...’*.

The economies of scale in working with social housing stem from the likely proximity of the properties, the consistency of the measures being applied and therefore the materials and skills needed, and the condition of the homes. Local authority and partner interviewees remarked on the inconsistency of the quality of homes in the private sector: where walls were in poor condition, for example, it was not appropriate to add EWI without treating them in some way; where boilers were old or non-standard, it could be difficult to procure the correct flue attachment. In social housing, it is much more likely that stock has been invested in over time and consistently maintained and refurbished, therefore making the task of retrofit more straightforward in comparison.

In addition to these technical issues, partners gave examples of householders causing delays in the process. In one property, a conservatory needed to be removed before EWI could be added. Although the householder was organising this themselves, this was taking longer than expected and causing delays, and therefore adding costs, for the commercial partners. In several cases, delays were being caused by householder indecision, whether on



the colour of the EWI, the type of door, or whether to go ahead with the work or not, all of which created delays and added to costs.

Whilst it would be expected that work would be of high quality in both social and private housing, it is also likely that the private sector will have particular, and higher, expectations of the work, and be used to managing the renovation and maintenance of their homes and want to protect their investment.

One of the ways in which partners were able to maximise the economies of scale and therefore have some of the benefits of a social housing approach was by aiming for a street-by-street approach: treating sets of houses close to each other, potentially a whole street, rather than ‘pepper potting’ the selection of houses across a larger area. Advantages of this approach included cost savings with scaffolding, delivery and storage and extended to wider socioeconomic impacts such as the more complete improved look of a street and the implications for desirability, house prices and the tendency for people to look after their properties. It was recognised by one local authority interviewee to amount to a more *‘notable change in the area’*. Additionally, it aided recruitment: *‘If you’ve got a lot on one street and you put one scaffold up, it’s amazing how people start to follow what you’ve done’*.

There are, however, a number of challenges in following this approach. One is the range of tenure types and abilities to pay, with a single street potentially including social housing, owner-occupiers and privately rented properties. As discussed above, they are also likely to be in varying conditions of repair. There is also a financial risk to the contractor, because if a substantial number of houses do not sign up then the economies of scale will not be enjoyed: *‘we took a calculated risk based upon our experiences elsewhere’*.

### ***Impacts of the Funding Context***

Interviewees commented on the context of national funding, highlighting the potentially competing sources available to local authorities and householders and the fluctuating nature of the funding offer. For a minority of cases of resident recruitment, this had a direct impact.

In one area, a small number of householders were part way through the application process for GDF, with their retrofit plans having been decided on the basis of the finance being available and interrupted when the Government ceased GDF in July 2015. In most of these cases it was possible to continue with the work by using a local authority care-and-repair loan, but for some this was problematic and subject to delays because this loan had stricter criteria than GDF.

Interviewees shared some frustration with ECO and its unpredictable nature. In addition to the usual fluctuations, changes in the national picture meant that ECO funding was more plentiful when the bid was written and partnerships were formed and that it fell when the project started to gain momentum. A partner explained that further changes had a direct effect on what they could offer residents and that they could have to return to them after the work had been costed and explain that the cost to them has now increased.

Local authorities found that this impacted deliverability – *‘The ECO rates went down significantly, among other things, and it just made the project [more difficult]’* – and some

were able to find other funds to make up shortfalls, helped by increasing flexibility from DECC.

Issues with the unpredictability of ECO funding were experienced throughout the project. Late in 2015, one of the partners experienced further reductions in the levels of ECO funding offered by EDF and ‘returned’ their allocation to GM to be picked up by a different partner that was able to access sufficient funding. One interviewee commented that ECO was always difficult and contributed to a culture in which data was not readily shared: *‘No one every felt the need to make it less opaque. There was something weird going on where there was some benefit to secrecy on who got how much ECO, which seemed to me to be totally counterproductive and makes life at a strategic level very difficult.’*

Whilst in GDC the key actors were able to take a flexible approach and find ways to top up funding, this shifting funding context had implications for their ability to plan strategically, especially if aiming for a multi-measure or whole-house approach: *‘I think it is a major issue is: what have you got? You’ve got ECO, Green Deal, HIF, FIT, RHI, various brands of ECO, Green Deal Communities and actually there’s no joining up and coordination. If we do think about whole house, how do we deal with that?’*

### **Demo Homes**

The idea behind the demo homes concept was to provide real examples of retrofitted homes that showed prospective customers what a home would be like following the application of multiple measures. In reality, fewer demo homes were completed than planned – seven across GM – and they came later in the programme than planned, meaning they weren’t able to act as exemplars for prospective customers within the timescale of GDC. None of the householders who put themselves forward for demo homes were interviewed as part of this research; however, the local authorities, commercial partners and other interviewees were able to comment on the process and in some cases relay the concerns of the participating householders.

Despite the completion of seven demo homes, there was some dissatisfaction with the process, reflecting the delays in completing the homes and the customer journey. It was recognised that the householders volunteering their homes as demo homes were *‘really passionate about it so they’re willing to wait and willing to be guinea pigs’* but that *‘the customer journey has been poor’*.

The interviewees suggested that there was a combination of reasons for delays in completing the demo homes. One challenge was finding volunteers to open up their home, as a commercial partner reflected: *‘you wanted to have the right person looking at it and looking after it that can show people round; you want that person to be enthusiastic about the measures and keep a tidy house’*.

Part of this process was agreeing the spec of demo homes with the householders. This was complex, with home owners clearly having their own preferences for what they wanted for their home, rather than simply accepting a demo home concept being imposed on them. A local authority interviewee recalled an iterative process of firming up plans and specifications: *‘residents wanting things that weren’t technically possible, or the funding not*

*being able to cover what they wanted, or the partners not being able to deliver what was wanted...'. A board member reflected that clearer minimum standards might have helped: 'sometimes the show homes, particularly with the more expensive show homes rather than the smaller show homes, the specification was so high and it was so variable that it became difficult to secure a deal. So I think the failure there was more about setting minimum standards and then saying to the householder, "And if you want more than that then that's fine, but that's part of a separate negotiation".'*

Another factor appeared to be some disagreement over the purpose and scope of the demo homes, and this needs to be understood within the context of a lack of clarity over this part of the programme: *'I think it was inadequately clear from the start about the expectations of the show homes.'* The initial guidance from DECC pointed towards demo homes that were **ambitious, yet attainable**: *'In theory, you think "demo home, wow; let's have the best we can have it". But that is not what DECC wanted. DECC wanted a home that everybody could have. An attainable home'*. In GM, the specification for the demo homes was decided by the GM Domestic Retrofit Programme Board, the University of Salford and Red, with the latter two organisations providing a technical advisory role. It was decided that GM would aim for a set of ambitious demo homes that could demonstrate deep retrofit, evidencing substantial reductions in carbon emissions of around 80% and featuring multiple retrofit measures. It was felt that more basic demo homes, with lesser carbon reduction potential, would have less value on an ongoing basis in GM's retrofit activities, because the area already had an existing evidence base of retrofitted homes.

At one end of the spectrum of views was the importance of emphasising achieving large carbon reductions via a whole-house approach, an approach that demonstrated the technical potential of retrofit to contribute towards climate mitigation. One interviewee, an independent consultant who acted as a technical consultant for the project, for example, felt strongly that the programme should have pushed for a deeper retrofit approach, with 80% carbon reductions, to set an example of what would be technically achievable. Others, however, expressed concerns about the suitability of this approach, given the actual GDC offer, which was largely EWI, and what householders could afford under the programme. The tension, then, was between the level of retrofit that is technically possible and what is affordable and politically possible. Whilst it is questionable, however, to what extent technical possibility can be viewed independently of its political and financial context, it might also be argued that programmes such as this can extend the horizons of that context by creating political acceptability.

A commercial partner questioned the appropriateness of the more ambitious approach that GM started out with: *'My personal view, and I think it's shared by other people, is that the specification to match what we were actually going to do in the communities, they were put together as an exemplar project, let's be honest, which doesn't reflect what you can actually do in the communities with the amount of money that's available'*. A local authority interviewee questioned its appropriateness for their area: *'Show homes were never really going to work for us in their original form, and they were originally... You had to open your house twice a year to show people round for, I think it was a two-year period, and there are issues about the amount of work that had to be done to a show home, and the contribution toward that, etc. It just didn't fit [in this borough]...'*

One interviewee had been involved in the early stages of the project in an advisory capacity and had attempted to act as a broker between the customers and the commercial partners. This role, they reported, was made difficult by a lack of transparency from the partners in terms of the costs of the works. The interviewee's intention was to show how the capital outlay could be paid back with savings over time, but this was not possible without a reliable estimate of the actual costs: *'if you don't get the costs you can't then make sure that the repayments balance against the savings'*. Their view was that this made it more difficult to convince and enable householders to invest in deep retrofit with high levels of carbon reduction, e.g. 80%. They also felt that householders were given insufficient information about the works to make an informed decision on proceeding, especially as they were owner-occupiers with a personal stake in their home.

This interviewee expressed concern that early specifications for demo homes provided by the commercial partners were, in their opinion, overpriced and argued that this not only made the offer increasingly unattractive financially to householders but also made it very difficult to make energy savings stack up against capital outlay. Whilst some interviewees suggested that these high prices reflected the partners' reluctance to work on the demo homes, it must also be understood that high-specification bespoke works were not the partners' usual business model and were therefore likely to incur higher costs.

Interviewees spoke of difficulties in getting progress on the demo homes from the partners, and some hinted that they perceived a degree of reluctance among the partners for this part of the programme: *'I think it's never been fully clear, from the start, who was leading on the demo homes and who was doing what... I think partly it's to do with the partners not wanting to do them'*.

This lack of progress was despite pressure being put on the partners: *'We couldn't have put more pressure on the contractors to get the show homes up and going. I was in meeting with them almost month after month where we were saying "What's happening with the show homes? And where are you with these?" And it just seemed to take an inordinate amount of time'*. Interviewees commented on an apparent lack of power over the partners, on demo homes in particular, one feeling that *'we were kind of working on the good graces of the contractors'* and that *'the contractors are running a business and actually they couldn't see the business purpose for doing it'*. It was also observed that as the project progressed the focus was increasingly on the targets for EWI signups and installations, as that was what DECC was 'judging' the programmes against, and this further detracted from the demo homes.

Given this context, it might have been prudent to separate the supply chain for the demo homes from the main focus on wide-scale EWI delivery, as this interviewee suggests: *'I think some of the issue was that actually it would've been nice to use a different supply chain because I think actually the supply chain we had for the main programme was really about mass scale'*.

The result was that, although some demo homes were completed, there were fewer than originally intended and, coming at the end of the programme, they were unable to act as exemplars that could help boost signups during the timescale of the programme: *'They're not the showpiece of our project, at all. They were meant to kick-start the programme, yet*

*they're towards the end of the programme'*. The idea that the demo homes could be ready quickly at the start of a relatively short programme was clearly very ambitious.

One interviewee emphasised this, placing the demo homes within a longer timescale, although it was not clear whether other interviewees shared this view: *'Several people thought that the show homes would assist with the first year's programme. It was screamingly obvious that they wouldn't because it takes too long to procure a whole-house retrofit, get it actually on site, get it built and get some data back from it'*. It is possible, therefore, to see the demo homes as part of the longer-term development of retrofit in GM, rather than as elements purely of GDC.

### **Soft Measures**

In the GDC programme, soft measures referred to non-EWI installations defined by the list in Appendix X. In mid 2015, it was noted that soft measure signups had been slow, with 36 across the ten boroughs against a target of 330, divided approximately equally between the partners. This issue was discussed at the board meeting and it was felt that it was likely that soft measures were not as profitable as solid wall installation and so partners had not prioritised them, as well as the fact that the partners' prices for soft measures were likely to be uncompetitive, as they were working through subcontractors. Concern was also expressed that there had already been many offers for energy efficiency improvements such as loft insulation across GM in the preceding years.

### **Technical Issues**

It is beyond the scope of this study to evaluate the technical performance of the retrofitted buildings; however, there are some issues arising from the interviews that it is useful to document. This board member explained that modelling would suggest improvements, but that there was a need for monitoring to be sure of the quality of the work: *'I don't think you can assume anything until you measure it. You can have a look at the models, but if you took a sample of those properties and monitor them and see that they're more energy-efficient, but it's more complicated than that because if they've not done them right and they're putting in defects into owner-occupier homes there's a lot of other issues that need to be thought about'*.

As discussed above, there were technical challenges arising from the diverse nature of the private sector housing stock. These reflected the lack of consistency in the quality of the properties, with homeowners likely to have maintained their homes to different standards and made different choices about technologies such as boilers and insulation.

One interviewee raised concerns about a further systemic issue, reflecting the limitations of an approach focused on single-measure installations. This made it difficult to ensure synergies with future retrofit work between measures by dealing with the junctions: *'it's not so much that you can't go back and do it later, because in some cases you can, it's the fact that when you only do single elements at a time you don't address the junctions'*. An example being that when boilers are not replaced at the same time as EWI is installed patches are left on the walls where their flues are extended. They saw this as having the potential to *'embed problems'* and there was a lack of details from the contractor about how they would deal with the junctions. The interviewee argued that we therefore need to plan as



if it's a whole-house approach, even if the individual measures are in effect installed separately, as this allows for consideration of junctions. They had observed issues such as overhanging eaves insulation stopping at the point where no one had to touch the guttering rather than dealing with the cold bridge, not insulating the window reveals and therefore leaving the option to upgrade the windows, and not being able to come back to cold bridging because the EWI would have to be disrupted.

An interviewee also raised concerns about the use of expanded polystyrene (EPS) insulation and the implications for potential damp problems in the medium term. These were also reportedly raised in a technical workshop as part of the project. A partner responded to this issue, noting that the materials were adequate for the job and that the choice of product was limited by the available costs: *'the materials that have been chosen and specified have all been more than adequate for the job. They've all been designed, detailed and specified in accordance with working with the correct substrates....'*

### **Data Sharing and Protection**

There were some delays in getting moving with the project that were attributable to data protection and establishing an agreement around data protection. This was particularly acute when information about potential households was sourced by one organisation, e.g. the energy advice service or one of the partners, and needed to be shared with another of the organisations for operational and tracking reasons. Interviewees gave the impression that they thought local authorities were risk-adverse with data, but also that they accepted that this was for good reasons: *'And the bureaucracy that surrounds information technology within local authorities, largely for good reason, did take us a while to overcome'*.

Where local authorities wanted to keep track of what was happening in their areas, this created difficulties: *'some of the authorities have got real issues with this, AGMA not being able to tell us what's happening in our areas. It's understandable and I think it's something that's been trying to resolve for a while, in terms of data sharing, but they never seem to crack it...'*

One local authority interviewee had had difficulty in ascertaining whether they were getting value for money when the information on costings and delivery was so opaque: *'I wasn't allowed to see the whole detail of that tender submission, and I didn't know what the other two partners had submitted. Massive problem for me in terms of determining whether the authority's getting value for money or not'*. For authorities that maintained a database of retrofit in their area, data opacity was particularly problematic: *'over the years there's been so many different schemes, they updated that so they know what has and hasn't been done. Then AGMA weren't allowed to tell them addresses of what's been done for their area...'*

When dealing with the commercial partners, one of the challenges was getting them to report in consistent formats and to maintain their records with the board so that a full overview of progress could be kept. This was reportedly something that impacted upon the duration of the project. The competitive nature of the partners may have meant that they were more guarded when it came to sharing data: *'Those partners are largely competitive, as you'd expect for commercial reasons. And therefore their willingness to certainly share*

*sensitive information, and in some instances I would argue probably cooperate, you know, there was a tension there'.*

## **Householder Motivations and Experiences**

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### ***Householder Motivations***

Three participating householders were interviewed as part of this study. They had all had EWI installed and one had opted to pay additional money for some supplementary measures. Their motivations ranged from improving comfort at home and cutting costs on energy bills to improving the look of their home – *'I was fed up with it, the way it looked outside'* – and bringing their home in line with social housing properties in the street that had already had similar work carried out. One was considering selling their property and saw the aesthetic and energy-related improvements to be an advantage in the market: *'It's supposed to be a lot easier to sell them because it's got more efficiency rating, because all the houses now that you buy and sell have to have an efficiency rating, don't they?'* A further perceived advantage was lower maintenance requirements, particularly not having to paint the outside of the house.

All three had found out about the opportunity through written communication from their local authority, either directly or through neighbours. One had previously expressed an interest and the authority appeared to be following up on this request: *'we'd asked for it a couple of years ago and they said they weren't doing the grants'*.

Two of the interviewees paid £3,500 and £1,000, respectively, towards the works and one paid nothing. Each of the interviewed householders said that the low capital cost to them was part of the attraction of the opportunity, and implied or stated that they would not have gone ahead with the work if it had been more costly:

*'It would have been a job we could not have done. There's no way we'd have wanted to start paying out £8,000 now at our age. £1,000 is different. If you had to pay the full amount out, that's taking a chunk out of what you need for other things.'*

From an admittedly very small sample, the interviews indicate that the work was not seen as a financial investment, in the sense of calculating a payback period for the energy savings to balance the initial outlay, but rather something that made sense and cost a relatively nominal amount of money, in the context of the costs of household improvements – capital that the householder had ready to invest in their house. This has implications for the relevance of a GDF finance approach, because this relies on the householder funding the capital costs via energy savings over time.

### ***Resident Experiences of Retrofit***

One resident reported that they were satisfied with the work, at least with the value of the amount they had put in, rather than being concerned about the actual amount paid by the GDC: *'I can't say whether they've done £8,000 worth of work... All I can say is, yes, that £3,500 that I've had done, which I'm only bothered about, right it's good'*.

Another expressed concerns about the attitude of the contractor towards them, given that the work was at zero cost to the householder. The interviewee paraphrased the reaction of

the contractor when they raised issue with the quality of the work: *'Well you're having it done for nothing... The job's not costing you anything'*. They responded to this angrily: *'We're not renting this house, this is not a private association, I'm paying a mortgage on this house... if you don't do a proper job I'm going to have to pay to have that job done properly'*. The interviewee reflected on this situation, recounting that other houses in the street were maintained by the council or a housing provider and having thought that the contractor had assumed their house was the same.

One of the residents was very pleased with the work and felt that it had not been *'too disruptive'* (h1), also reflecting that their neighbours seemed pleased with theirs. However, the other two raised issues with the length of time the works took, which was much longer than they had initially been told. In both cases scaffolding had been up longer than expected, reportedly about three and a half months in one case, and one householder expressed dissatisfaction with the security aspect – *'They can climb up the scaffolding. There was ladders up to it. That's easy, then, for them to burgle your house'* – and the lack of natural light coming into the house during this period. They commented on the overall organisation of the work, which seemed poor: not being able to plan for when workers were coming and having difficulty in communicating with the contractors.

Two of the interviewees were very positive about the quality of the work and the workmanship, with one emphasising that the actual workers were very competent and polite and that their issue was more with the managerial level. However, a third had actively raised issues together with their neighbours: *'We were not 100 per cent happy with what's gone on about the job, so people have been shouting and screaming about it, you see'*). To an extent, this related to the organisation of the job: *'I think nearly everybody I've spoken to who's had the job done has got some complaint or other about the whole process. It got to the point where one person could be working one day, then a completely different person could be working the next. They were just putting people on; they were just putting bodies on the job, so it just wasn't working right. It was badly organised'*. The householder raised several issues with the quality of the work, including the repositioning of hanging baskets relative to the location of the battens and not removing rendering before adding the EWI. They reported that they had had to repeatedly complain about the quality of work in order to have it corrected to their satisfaction.

The householders agreed that it was too early to be able to recognise any savings in their utility bills, especially as it had been a relatively mild winter. They did, however, feel that the indications were that it had been worth it in terms of both aesthetics and thermal comfort:

*It wasn't a freezing house before... but it does feel warmer, especially on the upstairs part of it.*

*It's not been a good experience, I've got to admit that, but it's worth it once it's done because it does look really good, the house, and obviously I have felt the difference in the heating, not having to have the heating as high.*

*I went downstairs and I could feel the difference because it's actually throwing a lot of the heat back in, that's with the heat staying in the bedrooms. In that respect, I think it's working but I can't be sure because of the actual year it is, because we've been having a very mild winter so far.*



An important part of retrofit is the information provided to residents, both beforehand and afterwards. The three interviewed residents felt that the nature of the work had been clearly explained to them; however, two did indicate that they were dissatisfied with the timescales and felt that these had been underestimated. However, they did not recall being given any advice on follow-up.

Such advice could, for example, deal with any maintenance issues, including where and how to affix items to the EWI. However, the interviewed commercial partners and contractors did claim to have handover packs that they had developed, in some cases, with the local authorities, which took into account issues like *'What happens in five years' time if you want to put up a hanging basket? How are you going to make sure that you don't damage the external wall insulation and invalidate the warranty?'* Another contractor mentioned a resident liaison process in which a full handover pack was delivered. This partner interviewee applied these principles to soft measures, e.g. boilers: *'If it's a boiler, obviously we would talk them through, go through the user guide and they have the option to ring us afterwards and say, "Look, I still can't get my head around this timer or round my thermostat. Can you talk to me again?" Obviously, we do that.'*

## Strategic Issues

One interviewee expressed frustration that the programme had moved away from the model of householders investing in retrofit and covering the capital cost via savings on energy bills over time: with the original intention from DECC being that householders would make a contribution to retrofit, this was not the case in all boroughs. The interviewee claimed that this is a *'central, cultural problem'*, that it is assumed that *'pay-as-you-save'* is no longer possible and *'they just assume that it's got to be 100 per cent funded, or that there'll be a contribution that is so small that you don't need to quantify the repayments against it.'* Their argument was that the required scale of change to meet carbon reduction targets means that we need to build momentum amongst householders and not rely on public money: *'there's no way you can spend the kinds of money we need to be spending on peoples' homes without expecting some [costs to be offset against] payback'*.

They saw this as a missed opportunity, arguing that to get household retrofit moving it is necessary to segment the market and work with the Rogers dissemination curve, i.e. that a small number of innovators and early adopters will believe in the approach and be prepared to take financial risks so that, over time, with the market boosted and economies of scale setting in, an early majority and late majority will take it up and make it commonplace. Given the small resident contributions, their argument was that: *'we ended up in a situation where someone's got to put £2,000 in, but there's no doubt they'll easily save it, rather than properly quantifying it.'* The interviewee felt that this had been a missed opportunity for GDC.

However, a board member reflected that the lack of emphasis on the GDF approach may have been largely down to experience in terms of the difficulty in getting take-up: *'And we found that the take-up within the public was generally low. They joined the project when Green Deal finance fell apart. We had to find alternative methods to fund the same sorts of initiatives'*.

Certainly, local authority interviewees highlighted the importance of the low capital cost to householders in enabling them to reach out to residents at risk of fuel poverty. This, another board member argued, was a useful contribution in itself: *'In some ways, I think we've probably assisted the more vulnerable because, some of these residents, because it's hard to treat properties, they'll have been left behind for so many years, because, obviously, initially, it was loft and cavity. So I think, in some ways, we've really gone a step ahead. We've progressed'*.

Although the GDC programme, then, can be seen to have had the potential to help reduce the risk of fuel poverty, this did not necessarily lead to the wider goals of developing retrofit as a consumer project. If this is the goal, then it is highly unlikely that those low-income households at risk of fuel poverty are likely to be able to afford to be early adopters in the Rogers dissemination curve. On reflection, local authorities were keen to integrate the programme with their existing fuel poverty schemes and had used their fuel poverty-related funding to make this possible, and this may have been a factor in the project's increasing focus on fuel poverty over time.

Two interviewees raised the issue of the current customs, practices and expectations within the industry. Despite there being information about the risks of EPS, one interviewee claimed, it is still accepted practice that this would be installed. With this and other measures, they wanted to see GDC challenge and raise the technical standards and recognised that briefings like the technical workshop and training events were designed to do this – *'Actually what we were trying to do was raise the level of debate around retrofit' –* as was the technical support on offer. An interviewee wanted to see more commitment from the partners to raising technical standards and more pressure from the coordinators on them to do this: *'I was naive enough to assume that as there was a quarter of a million pound technical support budget in the Green Deal Communities programme, where we had shown people details for how to sort this out, that there would be some sincerity from the contractors to sort it out. But they're all hiding round the fact that because that's how industry's always done it, they can carry on doing it that way and it won't be a problem'*. A local authority interviewee shared these concerns, hinting that this had been discussed with their equivalents in other GM authorities: *'There's industry standards, isn't there, to EWI work and obviously the partners meet those standards, but I think it's quite widely agreed now across AGMA that those standards aren't high enough. There's a lot of things that can go wrong still with the installation'*.

## Key Lessons

This study has focused on the processes behind the GDC programme in GM through a set of interviews with key stakeholders. It is beyond the scope of the study to gain a detailed understanding of the technical performance of the retrofit measures or to robustly evaluate resident satisfaction.

The programme has seen the installation of EWI in a large number of households in GM with relatively little outlay from residents. It has met its targets for signups and installations and GM is the only UK participating area to have achieved this. It has also produced nine demo homes and seven mini show homes and seen the installation of 408 soft measures across the area. It has also, arguably, built capacity in both the public sector and the

commercial partners to engage with owner-occupiers on retrofit, which could help inform a further programme of retrofit in the future.

Notwithstanding these successes, it appears that changes in the national context shifted the programme from some of its original goals and that this had implications for the extent to which it was able to move retrofit forward as a policy area. As the focus shifted from whole-house retrofit towards a programme of single measures, it could be argued that the opportunity was not taken to significantly advance understanding and experience of carrying out multiple retrofit measures in owner-occupied households and to developing this as a consumer product.

The loss of GDF and the changing emphasis of the programme away from paying for retrofit via anticipated energy cost savings towards a largely subsidised programme could be considered a missed opportunity to develop, test and normalise a savings-based model of financing for retrofit. Whilst the original DECC bidding documents specified that the retrofit measures should be at least partly funded by homeowners, this study suggests that local authorities being able to 'close the payment gap' was a major factor in driving signups.

This national context is important in understanding GM's experience. Whilst this study has identified issues locally, there is little to suggest that these issues are particular to GM. Any large-scale retrofit programme is likely to experience challenges with governance and data and to have to bring together a range of views, aspirations and levels of preparedness across different local authorities. In fact, GM's prior experience of retrofit is likely to have placed it in a strong position to overcome these challenges. The other challenges faced in this programme indicate issues with the national context rather than GM. These include the shifting national funding context, changes in DECC's priorities, expected standards in the UK retrofit industry, and the relative inexperience of the commercial partners in the owner-occupied sector.

Nevertheless, the programme has contributed to the understanding of the potential for retrofit in conurbations in general and the owner-occupied market in particular. The following points summarise key lessons that can inform future work on retrofit in this context.

### **Creating a market for retrofit**

- The programme has demonstrated the possibility of marketing and implementing a programme of EWI in the private housing sector (owner-occupiers and private landlords), and successfully met its targets for signups. It suggests that the financial offer to residents was sufficient, in that it was attractive to enough householders to meet the targets. From this study it is difficult to ascertain if it was necessary: i.e. whether householders would have gone ahead with the retrofit if there had been zero or little Government financial assistance and a large debt for the individual. However, the interviewees do imply that the ability of local authorities to provide funding to 'close the gap' via their own funding was an important factor in driving take-up, particularly amongst those households believed to be in fuel poverty.
- In recruiting homeowners and others to the programme, the trusted nature of the local authorities played an important role, particularly given the lack of currency of the commercial partners in this sector.

- Interviewed householders expressed a range of motivations for taking advantage of the scheme and these included improving home comfort, saving money on bills, improving the look of the house, increasing the market value and saleability of the property, and reducing the amount of maintenance needed on the outside of the house. This suggests that in selling the idea of retrofit local authorities need not focus solely on energy savings.

### **Programme governance**

- The relatively large spatial scale and multi-actor context of GDC in GM created challenges. One local authority felt distant from the core decision-making in the programme and also felt that its residents did not associate closely with schemes that were branded as GM. However, there is no evidence to suggest that this experience was representative and some local authorities were able to mitigate this by linking their GDC activities with existing local programmes.
- Data sharing was particularly challenging, resulting in delays in getting started with the programme and in cases of local authorities not being able to keep track of which houses were being treated in their areas.
- Although not a universal concern, interviewees did note difficulties in working with the commercial partners, particularly in terms of consistent reporting and generating momentum with the demo homes and soft measures.
- Some local authority interviewees experienced difficulties in sourcing information about progress in their area, including what works were being carried out where.
- This suggests a need for a stronger project governance regime that allows for greater transparency between coordinators, local authorities and commercial partners and makes the commercial operators more accountable to the government bodies.

### **Delivery**

- The private housing sector presented particular challenges to the commercial partners, who were more accustomed to operating in a social housing environment, and there is evidence that this caused delays in the delivery of the programme. In particular, this market involved working with multiple points of contact and signoff, in comparison with work on multiple homes managed by a single social housing provider. Social housing is more likely to have been consistently maintained and repaired, whereas owner-occupied housing will display a range of conditions and standards that can present particular challenges for the retrofit task. The private sector will have their own preferences relating to their house and these may change over time. Contractors may be dependent on householders to make good aspects of the house before they can progress work.
- Where a street-by-street approach was achieved this evidenced some benefits. To the commercial partners these included economies of scale relating to scaffolding, deliveries, storage and staffing. To local authorities this represented an approach that maximised the positive impact on the street, thereby having an impact on house values, quality of life, and tendencies to look after properties over and above the sum of its parts. This approach also aided recruitment, as neighbours saw the works being carried out in their street and the benefits spread by word of mouth.
- Issues such as poor scheduling, delays and disruption affected householder views of the retrofit process and influenced the likelihood of them recommending such an approach to a friend or neighbour.

- Householders disliked the assumption that because the work was free to them this somehow reduced the need for high-quality work. Even in purely financial terms there is still a cost to them as it may affect the condition and market value of their home.

### **Funding regimes**

- The shifting national context, particularly in terms of the evolving programme targets and funding regime, can be understood to have created difficulties and delays. Conversely, some of the changes, such as the move away from a focus on GDF and greater flexibility concerning soft measures, seemed to respond to difficulties faced by participating areas and provided some flexibility that helped the GM programme progress.
- The changing funding context, particularly the withdrawal of GDF and changes and instability in ECO, was particularly problematic. In a relatively small number of cases, these changes resulted in householders being unable to continue with their retrofit. On a GM scale, changes in ECO meant the commercial partners were operating on narrower budgets than they expected to be at the time the retrofit framework was developed.

### **Demo homes**

- The demo homes were subject to particular difficulties, which included recruiting residents and securing agreement on the scope of the work and extended to challenges in estimating the potential savings from the work. To some extent, the experience reveals the limitations of the commercial partners in delivering standalone whole-house retrofit in this way. The difficulties may also reflected some disagreement amongst the key actors as to the purpose and value of the demo homes and this may have resulted in limited 'buy-in' to the concept.

### **Technical standards**

- Although this is not a technical study, concerns were expressed by the interviewees that there is a discrepancy between current practice and expected standards in the industry and best practice in retrofit, to the extent that national standards for EWI may be inadequate and training opportunities for local installers are needed. This, together with a lack of attention to the junction points with potential future measures on the homes, was conceptualised as risking 'embedding underperformance'.

### **Strategy**

- Although part of the aim of GDC was towards normalising retrofit in the private sector and creating a market for it, the programme became focused on addressing fuel poverty amongst owner-occupiers and privately renting households, with some local authorities integrating it into their programmes aimed at low-income households, arguably detracting from some of the original DECC objectives for GDC. Whilst this is clearly an important contribution, it highlights the different strategic 'entry points' for work on retrofit and fuel poverty. If reducing carbon emissions is the primary goal, it may be that efforts should be targeted on wealthier households, who are arguably better equipped, financially, to be early adopters, who can help to boost the market in retrofit and ultimately make it more mainstream and affordable for a wider market.

Conversely, using public funding to lift households out of fuel poverty is important from the point of view of health and wellbeing but may have a lesser effect on the market for retrofit. Both carbon reduction and fuel poverty are important aims that demand policy attention, and both require substantial improvements in the building stock, but this experience does suggest that the short-term alleviation of fuel poverty and the medium-term development of a market for owner-occupier retrofit are less synergistic than is often assumed.

## References

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