

# Retrofitting social housing

Scaling up the opportunity in partnership



# The case for investment

- UK target to reduce greenhouse gas emissions by at least 80% by 2050
  - Domestic buildings account for 27% of total carbon emissions
  - 80% of today's building stock projected to still be in use by 2050
- **Cost of retrofitting England's housing stock estimated at around £500bn**
- Social housing sector accounts for some 18% of total housing stock
  - 1.4 million social homes classified as hard-to-treat, requiring more complex and expensive measure to improve their energy efficiency
  - 600,000 English social households are in fuel poverty
- **Cost of retrofitting social housing stock estimated at around £80-100bn (equals £2.3bn pa to 2050)**

# What are the barriers?

## Significant funding shortfall

- Retrofitting social housing to meet 2050 targets requires about **£2.3bn pa**
- ECO provides a maximum of **£1.3bn pa** (however, social housing is not eligible for the £350 million of the ‘affordable warmth’ component)
- Green Deal finance not well suited for social housing

## Split incentive in social rented sector (with rents set by government)

- Low-income households are likely to require subsidies to make energy efficient renovation work financially viable
- Under-heating means energy efficient work will not lead to the same energy bill savings as for standard households
- Most of the cost-effective work is likely to have already been carried out in social housing properties



# What is the proposal?

## A social housing retrofit loan fund ('evergreen fund') :

- Social housing providers would borrow money to undertake **retrofit of existing homes**
- Potential for **sustainable new build projects** (subject to EIB lending criteria)
- **Long repayment schedules in line with investment on competitive lending terms** (e.g. up to 30 years; 3.5-4.5% interest rate; floating or fixed option)
- **Potential for grant funding** provided alongside loan (ECO, RHI, EU funds,...)

# The basic principles

- **Developed jointly by the European Investment Bank (EIB) and the National Housing Federation (NHF)**, building on best practice established in London (THFC-managed Greener Social Housing UDF) and South East (Radian: Retrofit South East)
- **Professional social housing finance intermediary to manage loan portfolio**
- **Spending “ring-fenced” to local area** (requires critical mass to reduce management overheads) – LEPs to “opt-in”
- **Could be combined with local employment, training and apprenticeship initiatives** (e.g. revenue spend integrated into new construction/retrofit capital investment)



# Local economic impact

## Triple bottom line:

- Improved energy efficiency (environmental benefit)
- Reduced fuel poverty (social benefit)
- Household expenditure diverted away from fuel bills (economic benefit)



# Where does the money come from?

## **A mixed lending portfolio**, consisting of:

- European Structural & Investment Funds (EU SIF): £5.2 bn over 7 years
  - 20% of ERDF on energy efficiency; 20% of ESF on social inclusion
- European Investment Bank (EIB) loan finance: to match EU SIF and leverage
- Other institutional investment which could include housing providers' own reserves or local/national investment
- *Exploring option for investment into the fund being considered as “allowable solution” under the Zero Carbon Homes programme*

## **Grant elements**, potentially provided alongside loan:

- ESF could be used to support *local employment, training and apprenticeships*
- ECO, RIH, other national grant schemes

# Which activities could be financed?

## **Energy efficiency:**

- Cavity wall insulation, loft insulation, ...
- Double-glazed windows, air tightness, ...
- Waste water heat recovery, ...
- ...

## **Renewables:**

- Ground source/air source heat pumps
- Photovoltaics (PV)
- Solarthermal
- ...

## **Training:**

- Up-skilling local people to become energy assessors + building trades
- Behavioural change training for tenants (how to use energy efficient homes)

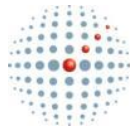
# Retrofitting social housing

Case studies from the social housing sector



# Radian: Retrofit South East

- First housing association to make use of 4% ERDF structural funding for retrofit of social housing in 2009.
- £421,000 grant secured for programme of research to build low carbon retrofit capacity.
- ERDF project outputs related to retrofit business assistance provided to 85 SME's.



camco



Global  
Environmental  
Social  
Business



Where people flourish



# Retrofit South East: Borough Grove

## Low Carbon Refurbishment

### Prior to refurbishment

- Thirteen 3-bed semi detached properties in Petersfield
- In need of substantial upgrade
- Average energy efficiency rating “E”

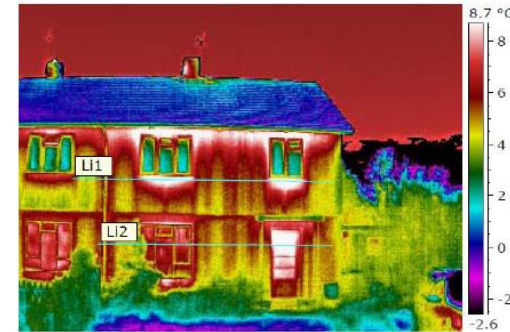


Figure 4: Pre-Refurbishment: Front (East) Elevation at No 14 Borough Grove, showing significant heat loss. Warmer areas under windows are the result of water ingress past the lower casements and show in white. The vertical bands show the underlying concrete structural detail. © Horton Levi

### Advanced retrofit approach

- Enhanced specification of the required upgrade to include a comprehensive package of low energy and sustainability measures
- 77% reduction in carbon emissions in seven properties – upgraded to energy efficiency rating “C”
- 86% reduction in carbon emissions in six properties (additional savings achieved through extra solar PV (2.1kWp) + solar water heating (3m<sup>2</sup>) – upgraded to energy efficiency rating “B”



# How C88 was achieved, Show home full SAP modelling



Scenario	SAP 2005 Rating	EPC / SAP Band	Annual Regulated CO2 Emissions kgCO2/yr	Approx cost of measure £	Percentage Reduction in Regulated CO2 Emissions %
<b>Baseline as extg (Gas)</b>	<b>49</b>	<b>E</b>	<b>5,868</b>	-	-
+ 100mm Phenolic foam EW Insulation	69	C	3,461	10,500	41%
+ Double loft insulation to 300mm thick	70	C	3,284	250	44%
+ 50mm vertical floor raft edge insulation	71	C	3,219	1,750	45%
+ A-energy rated windows and doors	73	C	2,792	6,000	52%
+ Improved air tightness & heat recovery ventilation	74	C	2,650	3,000	55%
+ New 'A' rated boiler & cylinder plus controls	80	C	1,965	4,500	67%
+ 100% low -e lighting	81	B	1,923	250	67%
+ 2.1 kWp solar PV	91	B	972	9,250	83%
+ Solar thermal 3msq	92	A	816	5,000	86%
+ 20mm aerogel ground floor insulation	93	A	692	5,500	88%
<b>Sum of all measures</b>	<b>93</b>	<b>A</b>	<b>692</b>	<b>£46,000</b>	<b>88%</b>

# FUTUREFIT PROJECT

---

FUTURE  
FIT

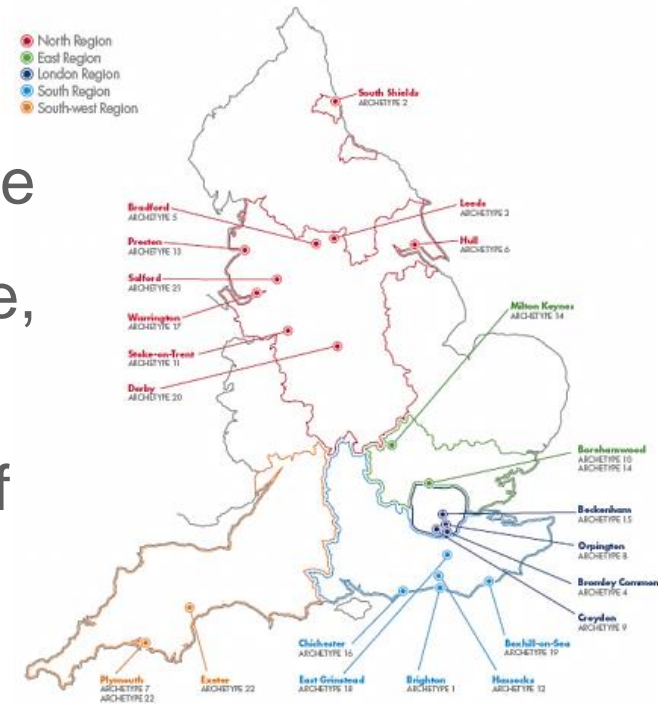


Affinity Sutton

# The approach



- 150 homes, 22 archetypes
- Works: practical approach, budgetary targets (three levels: low £6,500; medium £10,000; and high £25,000)
- Advice: FutureFit Living
- Monitoring: gas, electricity, temperature
- Analysis: baseline, SAP\*, actual usage, resident surveys
- Normalised for: weather, location, tariff
- As close to reality as we could get



\* Standard Assessment Procedure



# Funding gap



FIGURE 8: MODELLED FUNDING GAP (FUTUREFIT PHASE 1 REPORT)

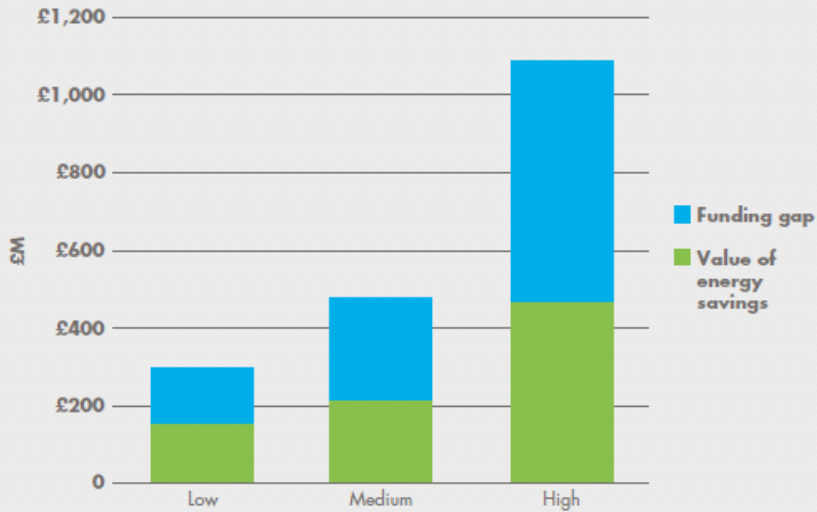
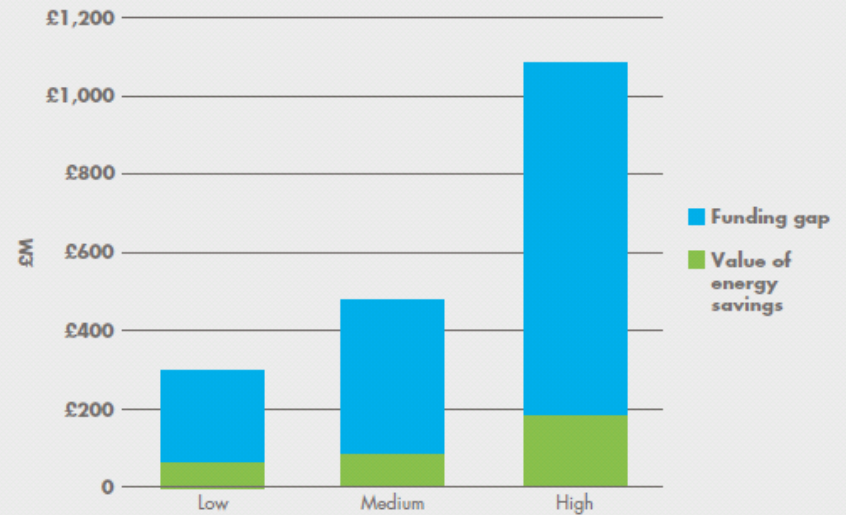


FIGURE 9: REVISED FUNDING GAP BASED ON MONITORING RESULTS



# A great opportunity for collaboration

## **The case for investment – a triple bottom line**

- Economy: Significant construction sector and supply chain opportunities, including apprenticeships and training; reduced energy bills free up household expenditure to be spent in the local economy
- Environment: Carbon savings and improved quality of life (health benefit)
- Social inclusion: Reducing the number of currently over 600,000 English households living in fuel poverty

## **A joint opportunity for LEPs and the social housing sector**

- EU grant funding matched by EIB loan finance to deliver retrofit at scale
- Local project portfolios aligned to specific area-based priorities
- Excellent track record of housing associations and experience from previous retrofit schemes will ensure prompt and high quality delivery in partnership with LEPs and EIB

# Retrofitting social housing

Scaling up the opportunity in partnership

Contact:

Arno Schmickler

[arno.schmickler@housing.org.uk](mailto:arno.schmickler@housing.org.uk)

Tel 0207 067 1034

