Retrofit approach to Environmental Sustainability

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Drivers for Change

Environmental

Economic

Social Responsibility

Market Sector – Product differentiation

Customer Expectation

Environmental

- Legislation – constant change
- Compliance is better than Prosecution

Economic

- Rental sustainability
- The less a property can consume the more protection from variations in fuel /water costs.
- Marginal costs on investment
- Return on Capital Investment

Social Responsibility

- The Rented Sector
- Reduction on reliance in production
- Environmental Impact
- Reduce consumption or be damned
- The feel good factor
- Supporting economic good
- Emerging technologies- speed of development

Market Sector

- Growing competition
- What makes you different
- Market Leader or Follower
- Future proofing your product
- Affordability

Customer Expectation

- We will always choose between two similar products based on cost.
- Customers want to have more disposable income
- Avoid the impact and damage under-heating or use of alternative heating can cause to your asset.
- Avoid complaints

The Hierarchy of Investment

- Maintenance
- Education
- Insulation and draughtproofing
- Control of Heating lighting and ventilation
- Efficiency of generation and transmission of heat
- Efficient Appliances / fittings
- Alternative sources of energy / light
- Energy storage

Maintain

- Fix the structure
- Understand the asset profile of investment need
- Maintain or replace

Educate

- Take the Tenant with you
- Eliminate the opportunity for misuse
- Reinforce the learning
- Convert the sinner

Insulation and Draughtproofing

Thermally Sound Home

- Insulation – Loft, Cavity & Solid Wall, Loft Hatch, pipe and cylinder lagging
- Double & Triple Glazing on all windows and doors
- Doors made from insulated composite or UPVC

Control Heating Lighting Ventilation

Heating Systems

- A-rated Gas Boilers
- Air Source Heat Pumps
- Biomass Boilers

Lighting

- LED
- Smart Systems
- Sun Tubes
- Outdoor lighting – PV battery storage

Alternative sources of Heating and Lighting

Energy Production

- Solar PV
- Solar Thermal

Energy Storage

- Battery Storage Units
- Buffer or Accumulator hot water storage tanks
- PV to hot water units

CBH – “Super Efficient Homes”

The starting point

Construction- build date

Location – Rural – off gas

Previous Investment – what was available

Lack of coherent or competing investment needs over many years

Case Study

- The houses are off gas, using oil or solid fuel. By prioritising these properties for PV they must first meet thermal quality standards: double glazed windows, insulated doors and loft & cavity wall insulation. CBH then focused its Air Source Heat Pump programme upon the same properties thus producing a well-insulated home which produces, at least in part, the electricity needed to heat the home. Moixa's 2 KW energy storage units, Maslow, were recently introduced into these same homes, which included changing out the old inefficient lights for LED and installing USB ports in the home for DC charging. CBH are currently undertaking a pilot scheme to employ PV to Hot Water systems in an attempt to further cut the energy needs of our properties. The resident of one of these properties produced an electricity bill for us showing that for a quarter, not counting the standing charge, was under £10!