Aberdeen Square, CB2 8BZ

Ian and Janet: Ian says,

We became increasingly restless to act to reduce our use of finite natural resources and offset the escalating cost of energy. Our previous home was an Edwardian detached property with an Energy Performance Certificate rating of F. When our children moved out of home it seemed like a good time to make a change and move to a more energy efficient house.

We wished to stay within the City Centre and had observed the evolution of the Accordia development. We had the benefit of being able to see other houses of the same type that had already been built. Although they were very comfortable, we were looking for an opportunity to take steps to future-proof our home, and become more isolated from energy shocks.

We've now been living in our home for 2 years, and we have found that we have significantly reduced our energy consumption, and made significant savings as well.

While we enjoy our home, we also like the atmosphere of the emerging community. Since most residents don’t have their own gardens the large outdoor areas with nearby allotments are shared public space and are an important amenity.

There is also a flourishing community association that has put on wonderful events including a cycle powered cinema evening, monthly green gyms and has recently converted a WWII pillbox into a bat hibernaculum as part of improving biodiversity, which you can see here; http://goo.gl/qWeC0.

**Overview**

<table>
<thead>
<tr>
<th>Age, Type:</th>
<th>2010, End terrace townhouse</th>
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</thead>
<tbody>
<tr>
<td>Wall type, Floor area:</td>
<td>Block and brick, 263 sq m</td>
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<tr>
<td>Project timescale:</td>
<td>18 mths</td>
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</tbody>
</table>

**Energy usage**

*Before (2 adults, 3 children):*
- 50kWh per sq m pa electricity
- 160kWh per sq m pa gas
- 250 cubic metres pa water

*After (2 adults):*
- 40kWh per sq m pa electricity
- 4kWh per sq m pa gas
- 90 cubic metres pa water

<table>
<thead>
<tr>
<th>Key features</th>
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<tbody>
<tr>
<td>+ living space on first floor to maximise light</td>
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<tr>
<td>+ extended window lengths</td>
<td></td>
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<tr>
<td>+ highly airtight</td>
<td></td>
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<tr>
<td>+ ventilation: trickle vents and stacked floor plan</td>
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<tr>
<td>+ passive solar gains on main work areas</td>
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</tr>
<tr>
<td>+ solar PV</td>
<td></td>
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<tr>
<td>+ air source heat pump</td>
<td></td>
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<tr>
<td>+ gas stove as supplementary heat source</td>
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<tr>
<td>+ air infused shower heads, dual flush toilets, water butt</td>
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<tr>
<td>+ high performance appliances</td>
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</tbody>
</table>
System Performance

**Solar PV:** 3200 Kwh/annum. 2300Kwh used, 900Kwh exported

Estimated COP for Heat Pump: 3

**Pressure test:** 4M³ (Where 10M³ is reasonable practice, 7M³ is good practice, and 3M³ is best practice)

**U Values:**
- Windows – 1.59
- External walls – 0.35
- Ground floor – 0.22
- Flat roof – 0.16

**Savings**

Our new home was given an EPC rating of B when built, which assumes an average use of 21500 kWh/year energy, emitting 4700 kT/year of C02. Our actual results have been much better. In the year ending December 2012 we used just 11,500 of which 2300Kwh was produced by our solar PV, reducing our C02 emissions to 2000KT.

In addition to this we exported 900Kwh of electricity, which brought our net energy running ‘costs’ to an income of £340 and a saving of over £2000/annum.

Future Plans

Improve the measuring capability of the heat pump

Update the lighting to LEDs

Examine the electric car

Confirmation of RHI for domestic heat pumps

Products and Costs

**Daikin Air sourced Heat Pump**
www.elliotts.co.uk

**Sharp MonoCrystaline PV panels & Kaco Inverter**
www.evoenergy.co.uk

**Esse Flueless Gas Fire**
www.esse.com

**Ideal Combi Windows & Doors**
www.idealcombi.com