South West London Environment Network

Community Based Energy Saving In Surbiton and Tolworth Funded by Royal Borough of Kingston

Project report from South West London Environment Network

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1. Summary and Recommendations

1.1 Summary of whole project

We were funded by Royal Borough of Kingston (RBK) to visit 25 homes in specific areas of Surbiton and Tolworth, South West London, to conduct an energy check, issue free energy saving equipment, issue a customised report of recommendations and encourage occupants to become part of a community with an interest in energy saving.

Our original grant application was for £3,000 with visits to 40 homes. As the grant awarded was only £1,800, we had to reduce our costs and activities proportionally and RBK agreed we should only visit 25 homes. In fact we visited 27 homes.

We estimate that the total energy savings per year achieved for the 27 homes are £936 and 4,000 kg carbon dioxide (CO2), or £35 per home. This is based on metrics produced by the former Department of Energy and Climate Change (DECC). We are not aware of the existence of any more recent metrics.

We found local community groups to promote our services. The involvement of these groups is one of the keys to South West London Environment Network's (SWLEN) success with community based energy saving projects because people are much more likely to take an interest in saving energy if encouraged by someone they know and trust.

We trained and took on 7 volunteer energy advisors during the project to supplement our existing team.

1.2 Recommendations

- Make repairs to broken windows and kitchen fans on both estates: addresses and details can be provided by SWLEN.
- Install solid wall insulation on outside walls of flats next to stairwells at School Lane.
- Repair storage heaters at Alpha Road and help residents to understand the correct method of operation.
- Check and remedy the levels of attic insulation at both locations
- RBK staff will doubtless be aware of the qualifying criteria for ECO funding. SWLEN can assist RBK to identify those residents who qualify for Affordable Warmth/ECO funding both by looking through our existing database and by undertaking further home visits.
- SWLEN can also identify those residents who qualify for the Warm Home Discount and give advice to residents in fuel debt.
- The Ham and Petersham LCZ project involving SWLEN several years ago highlighted the importance of developing local residents as "energy champions" who can help promote SWLEN's services and energy saving. This is aided by concentrating energy saving work in small, discrete locations. This outcome requires several years' work in the same location such as these visited here, if funding can be found.

2. RBK Priorities

This project addressed all of the elements for which the grant was intended, which are the following priorities in the Kingston Plan, the Kingston Strategic Partnership and relevant RBK Service Area.

Objective 1 of the Kingston Plan is:
Tackle climate change, reduce our Ecological Footprint and 'reduce, reuse and recycle'.

- Climate change and reducing ecological footprint are addressed here as direct outcomes of the project in terms of reducing energy-related carbon emissions.

One priority of the Kingston Strategic Partnership is:

Building community capacity – developing the role of the voluntary sector, community engagement, better information and advice, building aspirations and community cohesion.

- We use mainly volunteers to provide our services, we work directly in the community, provide energy saving advice and encourage community engagement.

We link strongly to the RBK Service Areas of:

- Adult Services and Public Health and of Place.

3. Engagement with local communities

We chose the following as partners:

Alpha Road Residents Association, Surbiton

This association represents residents from an estate comprising 600 flats containing a majority of social housing. We contacted the key officers of the Association and liaised with them in order to offer our service to residents of the estate.

School Lane Residents Association, Tolworth

This association represents residents from an estate comprising 160 flats containing mainly social housing. Again, we contacted the Chair of the Association and liaised with her in order to offer our service to residents of the estate.

Kingston Council Climate Change Team and Housing Department

The Climate Change team has similar objectives to SWLEN's energy projects. We were supported by the Climate Change Officer, Shadia Rahman.

We also contacted the RBK Housing Department to ascertain whether the Alpha Road blocks had been fully insulated (cavity wall insulation).

Energy champions

During our home visits, we attempted to recruit residents who would be prepared to help us promote our services and involve the local community. We have previously worked successfully

with “energy champions” to acquire more appointments from their friends and neighbours. While in this project it was harder to find people who would explicitly champion our service, many residents whom we visited did say they would recommend the service to their neighbours.

4. Promotion of SWLEN’s energy saving visits

4.1 Alpha Road Residents Association, Surbiton

The association supported us and we attended 1 meeting of the association’s committee which helped them to understand our service and us to understand the layout and organisation of the estate.

With agreement from the association, we posted leaflets to around 150 flats and followed up the next day by door-knocking. The advisors worked as a pair covering each floor together. This approach proved very successful despite reservations from the association. Out of 150 homes where we attempted a call, 60% were out but 40% of those who did answer agreed to sign up for a visit, a total of 25. When our appointment slots became full we took phone numbers, but it proved hard to make contact later. With greater resources we could have undertaken many more visits.

4.2 School Lane Residents Association, Tolworth

The association supported us and we attended 1 residents meeting and signed up 8 residents for a home visit.

4.3 Referrals

We received only a few requests for appointments as a result of existing residents telling friends, neighbours or relatives. On the other hand, when we door-knocked, many residents appeared to be aware of the service and at least one helped her neighbour to fit one of the measures we supplied.

4.4 Posters

Around 50 posters were put up around entrances to blocks at Alpha Road and School Lane. This only produced 2 or 3 enquiries but they certainly helped to raise awareness of the project.

4.5 Newsletters

An article was published in the newsletter for the Alpha Road Estate.

5. Particulars of a home energy visit

- Before the visit, the client is given a brief idea of what to expect.
- Two energy advisors attend, often an experienced advisor guiding someone less experienced.
- The visit is structured yet informal, the advisors using a checklist of items to be covered.
- The advisors visit each room and the attic where possible, and read meters and install equipment as needed. Where possible, a thermal camera is used to identify or confirm heat loss.

- Details of the property, occupiers, findings and equipment are entered into a secure database.
- The advisors calculate annual energy usage, compare it with the average for the property type, age, occupancy etc. and identify and try to explain any unexpected usage
- The advisors decide on the most important recommendations and praise for the report.
- One advisor returns with the report, any further energy saving equipment to be installed and to answer any queries.
- The advisors may need to investigate and give advice on benefits, grants or specific work to be carried out.
- Householders are sent a feedback questionnaire.

6. Achievements in energy saving

6.1 Visits

Number of energy assessments completed for homes: 27 (target 25)

6.2 Savings in energy usage

We used data from Department of Energy and Climate Change (DECC) which gives the average annual savings for most of the equipment we issue and the recommended behaviour changes, as money costs and as kg CO2. We also recorded for each client the equipment issued and the recommendations made. This enabled a fairly accurate calculation of savings per client. We assumed for behaviour changes a fairly conservative probability of around 30% that the client would carry out the behavioural recommendations.

From the above calculations, the total energy savings per year for 27 clients were £936 and 4000 kg of carbon dioxide (CO2).

6.3 Summary of equipment issued and recommendations made

"n/a" is shown where no data on savings is available for a behaviour change.

Equipment issued	£ energy saving / unit / year	kg CO2 saving / unit / year	Total units installed	Total £ saving (£ saving x units)	Total kg CO2 saving (kg CO2 saving x units)
Low energy light	4	14	31	124	434
Radiator foil fitted – no. of radiators	8	35	40	320	1400
Owl energy monitor	23	82	13	299	1066
Front door brush	1	3	7	7	21
Pipe lagging	3	13	8	24	104
Draft excluder tape	3	13	2	6	26
Tank jacket	15	60	3	45	180

Behaviour recommendations	£ energy saving / unit / year	kg CO2 saving / unit / year	Number of households	Total £ saving (£ saving x units x % probability)	Total kg CO2 saving (kg CO2 saving x units x probability)
Change electricity tariff / supplier	n/a	n/a	8		
Change gas tariff / supplier	n/a	n/a	4		
Ask energy supplier for annual statements	n/a	n/a	10		
Turn off lights in empty rooms	8	28	2	5	16
Improve attic insulation	20	87	1	6	25
Insulate attic hatch	n/a	n/a	3		
Turn down thermostat	56	245	6	10	440
Turn down water temperature	n/a	n/a	2		
Reduce time when heating on	n/a	n/a	2		
Fit TRVs	n/a	n/a	0		
Bleed the radiators	n/a	n/a	0		
Turn off heating in unoccupied rooms	n/a	n/a	0		
Prevent furniture from blocking radiators	n/a	n/a	3		
Fit lined curtains at front door	n/a	n/a	2		
Use a clothes line or rack	20	65	3	24	60
Wash clothes at a lower temp	6	21	1	6	21
Run dishwasher at a lower temperature	n/a	n/a	0		
Reduce number of appliances on standby	30	106	6	60	200
Install a water butt	n/a	n/a	0		

Total all households		**936**	**4,000**

7. Project costs

7.1 Equipment

- Homes were given an Owl energy monitor where needed and some low energy lights and we fitted reflective foil behind radiators on outside walls.

- We were able to fit some other equipment at no cost to the project, e.g. pipe lagging, letter box brushes, draught excluder tape, power down plugs, front door brushes, water tank jackets, “Hippo” in cistern to reduce volume of water in a flush.

- We advised where larger improvements were needed but where we could not supply equipment, e.g. additional attic insulation, wall insulation or lined curtains by the front door.

- To enable anyone to handle enquiries and make appointments, we used a mobile phone as the single point of contact and the number was used on all stationery. We also used a unique SWLEN email address, at no cost.

7.2 Expenditure

Equipment was purchased on an ongoing basis as the amounts required became clear. In many cases, we used existing stock and replaced it after it had been issued, up to the value of the budget. All figures are rounded to whole £s.

- Low energy lights: £52
- Owl energy monitors: £259
- Reflective radiator foil: £172
- Staff costs: £807
- Travel : £32
- Printing, stationery and other expenses: £30
- Miscellaneous : £408
- Contribution to bookkeeping, insurance etc.: £100

Total spent: £1,860
Grant from RBK: £1,860

8. Findings

8.1 Estimated financial and CO2 savings

These were lower than the estimated values, which were based on previous projects. We quoted cost savings of £70 per home per year in the grant application whereas many homes were 1 or 2 bedroom flats and the savings per home averaged £35. This reduction was due to us installing fewer than expected of the more cost effective energy saving measures, such as Owl monitors and radiator foil, which contribute most of the savings.

This is 63% of what was achieved in the previous year's project where the same number of homes was visited. There are several reasons, such as fewer homes with radiators on outside walls needing reflective foil (40 radiators this year and 61 last year) and the energy advisors only supplying an electricity monitor where they thought it would be used and there were sufficient appliances for it to be useful (13 this year and 16 last year).

8.2 Issues found during visits

- 10 (37%) of residents did not have energy bills or statements: this meant that it was impossible for the energy advisor to calculate their annual energy usage and compare it with the average for the type, age, and size of property.
- 6 (22%) had their boiler thermostat set too high, resulting in higher energy costs than necessary.
- Many flat dwelling residents had problems with draughts from double glazing where e.g. a seal was broken or a window did not close properly, or from kitchen fans not working. They seemed reluctant to ask for repairs to be carried out.
- At School Lane, the thermal performance of the outside wall of flats next to stairwells was poor. We recommend that solid wall insulation be installed on at least those walls.
- Many residents do not understand the purpose and operation of a thermostat and turn it up in cold weather. The recommended household internal temperature is 21^{o}C.
- Many residents were unfamiliar with the controls on their gas boiler. Most do not use a timer but turn the thermostat up when coming home and down when going out or to bed. This is not the most efficient or comfortable way to heat a home. According to standard advice from National Energy Action (NEA), a home's heating should be timed

to switch on about half an hour before the resident(s) get up and to switch off half an hour before bedtime – this gives an appropriate warm-up and cool-down time.

- 6 residents out of 20 at Alpha Road had storage heaters combined with an energy tariff giving cheap electricity from midnight to 7 am, e.g. “Economy 7”. It was unclear whether the residents understood how to use the storage heater controls and many storage heaters needed repair. We recommend a follow-up visit to determine which heaters need repair and to give residents information to ensure they use the heater controls most effectively. For instance, residents are very probably unaware that on older storage heaters the output control must be turned off overnight while the storage heater charges up with heat.
- We door-knocked during the daytime: this meant that we did not meet a cross-section of residents.
- Most residents do not analyse their energy consumption or know how to identify anomalies. However, average usage across the 27 homes showed they used only slightly higher gas than the average for a home in London of the same size, type and age and slightly less electricity than average. As most residents visited are probably more often at home during the daytime, this would result in higher gas usage.
- We visited few top floor flats and were unable to confirm whether the appropriate level of attic insulation had been installed. We recommend a follow-up by us or by RBK to confirm whether the level of attic insulation is adequate.