

**REPORT TO: PORTCHESTER CREMATORIUM JOINT COMMITTEE –
12 DECEMBER 2011**

REPORT BY: THE ENGINEER AND SURVEYOR

ENERGY GENERATION

Purpose of this Report

1. At the meeting of the Joint Committee held in June 2010 the question of generating energy at the Crematorium was raised. The purpose of this report is to consider my preliminary observations on the practicality of generating “alternative energy” and to consider how the various options to achieve this can best be investigated.

Introduction

2. All crematoria, due to the nature of the way in which they operate, are relatively large consumers of energy. At Portchester various measures have been taken to improve energy efficiency and this is an ongoing process. In recent years the market for producing energy away from main power installations has grown and this report seeks to look at this development and consider its relevance to the Crematorium.

Options for energy generation

3. This report will consider five options:
 - Wind generated electricity
 - Solar generated electricity
 - Solar generated hot water
 - Air-source heat pumps for heating
 - Ground-source heat pumps for heating
4. Each of these options would need to take account of several factors including:
 - The likely impact on users and neighbours of the Crematorium.
 - Aesthetic considerations, including the need to obtain relevant statutory permissions.
 - A whole life cost benefit analysis of any proposal
 - The possible effect of changes in energy prices and any relevant credits
 - Possible structural implications of installations on the existing buildings
 - Possible legal implications

Wind generated electricity

5. Wind generated electricity can be achieved both on a large and a small scale and most people will be aware of the large scale generators both on land and offshore. Smaller, more “domestic scale” generation is probably not so well established and its development may have been hampered by an over zealous selling of small scale generators for sites that are in practice unsuitable for this purpose.
6. Any installation at Portchester would clearly need to suit the sensitive nature of the site and would of necessity need to be of a small scale. Such installations would normally be mounted on a building and an obvious location could be on the high chimney stack. Such a location may be practical but appropriate consideration would need to be given to possible interaction with the flue gas emissions and to long term maintenance considerations.

Solar generated electricity

7. The use of photovoltaic cells to generate electricity is becoming more common and is probably the most appropriate option at Portchester. Whilst it is possible to have ground based installations I consider building mounted installations to be much preferable. The Crematorium has two south facing sloping rooves: one for each chapel. Of these two the south chapel would appear to be an obvious choice since it is the largest and is not shaded by other parts of the building complex, both existing and planned. This roof is a prominent feature of the Crematorium and due consideration would need to be given in particular to the aesthetics of any installation.

Solar generated hot water

8. The criteria that apply for photovoltaics would also apply to the generation of hot water. Such a system would be for the primary use of the Crematorium. The fundamental disadvantage of this system is that the scale of generation is not compatible with the demands. In winter the system would generate the least amount at a time when demand would be at its highest. In addition most heating systems are “dry” not “wet” and alternative recycling of energy from heat exchangers has already been agreed.

Heat pumps

9. There are two types: air source and ground source. Both work in a similar way to a refrigerator. Heat is extracted from a local source (either the air or the ground) and converted into a higher temperature (similar to heat being extracted from inside a refrigerator and hot air being dissipated on the outside).

The way forward

10. If the Joint Committee wishes to investigate further the possible generation of energy I suggest that this could best be achieved by using the services of a specialist consultant. My preliminary view is that their brief should be limited to

the use of photovoltaics. At this stage no discussions have taken place with any consultant other than with Parker Torrington. PT would be responsible for drawing up a suitable brief and overseeing the specialist consultant's work. Given that no preliminary discussions have been held with specialist consultants I am not in a position to provide an accurate figure as to likely costs but I would estimate that a budgetary provision in the order of £10,000 would be appropriate.

Timing

11. Members will be aware that major works are now underway at the Crematorium. Given the nature and scale of these works due consideration needs to be given to the best time for any feasibility study and, if appropriate, subsequent works. The abatement works are the largest and most complex works that the Joint Committee has undertaken and, with that in mind, I therefore suggest that further consideration of possible energy generation be deferred until this project has reached an appropriate stage. I also suggest that budgetary provision be made in 2012/13 for the engagement of a specialist consultant to investigate this matter further.

Recommendations

- (1) That, if the Joint Committee wishes to investigate this matter further, a figure of £10,000 (excluding VAT) be approved for the 2012/13 budget to enable the engagement of a specialist consultant.**
- (2) That the engagement of a specialist consultant be deferred until the mercury abatement works are at an appropriate stage, in order not to detract from this project.**

Terry Garvey
Engineer and Surveyor

*Background List of Documents –
Section 100D of the Local Government Act 1972 - None*

TG/me
24 November 2011