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Managing solid waste in small hotels
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Collectively, small hotels constitute a significant solid waste management (SWM) problem. Little research has focused on the SWM practices of small hotels. In the United Kingdom, much of the solid waste generated by small hotels goes to landfill. This study uses a constructionist approach to investigate SWM issues in small hotels in a local authority in Wales and examines the role of the public sector in helping small hotels manage their solid waste effectively. The results revealed that only a minority of small hotels were considering the adoption of sustainable SWM practices, either because hoteliers felt negatively about sustainable SWM alternatives or perceived challenges – an issue which necessitates government intervention. At the time of this study, the public sector provided only very modest services to enhance SWM practices. This study proposes a best practice model for the public sector to encourage small hotels to manage their solid waste effectively, in order to reduce or even eliminate waste for landfill. Local authorities’ support is required to make waste management hierarchy options more accessible to small hotels and should incentivise better waste management through increasing the gap between the costs of landfill and recycling waste.

Keywords: small hotels; landfill; solid waste; waste hierarchy; green purchasing; recycling; Wales; local authority

Introduction

Much of the research on reducing the environmental impacts of the hotel industry has concentrated on larger hotels and major hotel companies. Yet over much of the world, there are large numbers of small hotels. This research was designed to identify the challenges facing small hotels in implementing sustainable solid waste management (SWM) practices and to develop a best practice model for SWM in small hotels. It discusses the barriers to, motivations for and the potential pressures leading to the effective management of hotel waste. The paper opens with a brief introduction to the research followed by an overview of SWM in small hotels. It then presents the research approach used in the paper and the findings of a small hotel’s case study. It develops a best practice model of SWM for small hotels and finally provides a short conclusion for planning better SWM practices in small hotels and considers the support and incentives needed to implement those practices.

A range of quantitative and qualitative measures can be used to define small hotels, including size, number of employees, market share, finance and ownership (Morrison, 2002). Size (i.e. number of rooms) is the most common method used for classifying hotels as being small, medium or large. However, previous studies (e.g. Baker, Bradley, & Huyton, 2000; Buick, Halcro, & Lynch, 1998; Kirk, 1998; Main, Chung, & Ingole!, 1997) showed a
debate in defining the size of small hotels. For the current study, small hotels were defined as those having 30 rooms or less (justified later).

SWM is investigated in the context of small hotels in Wales for both environmental and academic reasons. The International Hotel Environmental Initiative (IHEI, 2002) indicated that solid waste generation is considered one of the most adverse environmental impacts created by small hotels. Collectively, they produce a vast amount of waste, much of which goes to landfill. Many small hotel firms consider their environmental responsibilities as a secondary objective (Goodall, 1995) and take very little action to reduce their environmental impacts (Webster, 2000). Landfill from waste from small hotels contributes to the degradation of the environment through the pollution of groundwater resources due to the creation of a "leachate", and the emission of explosive gases, e.g. methane (Becklake, 1991). It also causes problems to the surrounding communities in the form of odour, flies, litter and noise (Kharbanda & Stallworthy, 1990). However, to date most of the academic work addressing SWM problems has largely focused on household waste recycling (see Oskamp et al., 1991; Price, 1996) and local authority waste management programmes (see Phillips, Clarkson, & Barnes, 2002; Read, Phillips, & Murphy, 1998), while little or no research has targeted SWM in the context of the small hotel sector.

This research was undertaken in Wales: Wales has a significant SWM problem focused on the excessive use of landfill as a primary waste management option and its achievement of very low recycling rates (Environment Agency and CCW, 2003). Therefore, there is a great need among all commercial businesses, including the small hotels which dominate the hospitality industry in Wales (Morrison, 2002), to introduce sustainable SWM practices.

The waste hierarchy identifies a range of more sustainable waste disposal options, e.g. waste minimisation, reuse and recycling, which small hotels could use to guide their SWM practices (Cummings, 1991). In fact, a programme of waste minimisation and recycling can be of a significant advantage to hotel operators for its potential not only to reduce disposal costs but also to assist the hotel in complying with future regulations (Cummings & Cummings, 1991) and to protect the environment from the destructive impacts associated with landfill.

The hospitality industry and solid waste management

Solid waste is a key concern in the hospitality industry. Typically, a hotel guest can produce 1 kg of waste a day that accumulates to thousands of tonnes of waste annually (IHEI, 2002). Many small hotel operators have very little interest in reducing and/or recycling waste, believing that such activities are too expensive and time-consuming (Chan & Lam, 2001). Cohen (2006) reported that the generation of solid waste from all sources across the whole economy is increasing in the United Kingdom by 3% per year – faster than the gross domestic product and faster than most other European countries. For a hotel business, the cost of solid waste is not only the cost of disposal but includes other hidden costs, i.e. staff, resources and energy (Todd & Hawkins, 2007).

The waste management industry in the United Kingdom is currently regulated and guided by the Environmental Protection Act (EPA) 1990, which provides more control over waste carriers and producers (Read, Phillips, & Robinson, 1998). All producers of waste must comply with Section 34 of the Act which is known as "Duty of Care". This requires all commercial and industrial businesses to use an authorised waste carrier and to store, present and dispose of their waste properly (Webster, 2000). The UK government's white paper "Making Waste Work" stressed the roles of the government along with the Environment Agency and local authorities in promoting waste minimisation (Read, Phillips, & Murphy,
In 2002, the Welsh Assembly Government (WAG) developed its first waste strategy, "Wise about Waste", to target SWM in Wales and divert waste away from landfill. The Welsh Waste Strategy 2002 is built upon England and Wales's Waste Strategy 2000 and sets targets for recycling and composting municipal solid waste (DEFRA, 2000). It requires local authorities to achieve at least 40% recycling and/or composting by 2009/2010 (WAG, 2002). Moreover, the tourism strategy for Wales (2000) reported that Visit Wales! should provide more awareness of the benefits of implementing environmentally friendly practices and confine grant schemes to businesses which meet the environmental sustainability criteria (WTB, 2000). These actions should encourage the greening of the hospitality industry.

Cummings (1997) developed a hierarchy model of hospitality SWM. The model introduces five levels for waste minimisation including commit to waste minimisation, purchase with eco-intelligence, use efficiently to generate less waste, reuse waste materials and segregate and recycle waste. However, Cummings's model will not be applicable to hoteliers who have negative attitudes towards the implementation of more sustainable SWM practices as the model does not have any system of motivation and/or pressure to influence hoteliers' behavioural intentions in relation to SWM. It is essential to educate and train staff about waste minimisation practices, along with providing incentives to enhance their commitment to the programme (Cummings, 1997; Trung & Kumar, 2005). Cummings (1997) indicated that customers can play an important role in a hotel's waste recycling programme by not contaminating waste with food. A range of methods can be used to encourage customers to segregate their recyclable materials, i.e. providing another bin in the room or near lifts for recyclable materials. Hayward (1994) indicated that customers' attitudes towards the environmental issues had changed positively. Many hotels reported high customer participation rates in hotel waste recycling programmes, e.g. Disneyland resort in Anaheim and Disney World.

The waste hierarchy introduced by Waste on Line (2006) provides a range of options to handle different waste streams (prevention, minimisation, reuse, recycle, energy recovery and disposal) (see Figure 1). Prevention is the elimination of waste before it is actually created. Minimisation is the reduction of waste during the life cycle of the product. Reuse is a process of putting waste materials back into use so that they do not go into the waste stream. Recovery is the retrieval of a part of the value of the materials through recycling and energy recovery. Disposal, at the bottom of the hierarchy, usually involves landfill and
incineration of waste (Baker & Vandepaar, 2004). However, the waste hierarchy did not address composting, which was an essential SWM option for handling organic waste in a sustainable way (Webster, 2000). The hierarchy has been used in the current study as a guiding principle of the potential options which small hotels can use to manage their solid waste effectively. It has been modified to involve composting. Also, incineration has been omitted from the potential range of options as it causes harmful impacts to the environment and human health, wastes valuable resources and hampers recycling and composting alternatives (Becklake, 1991; Friends of the Earth Cymru, 2003; Gray, 1997; Matthews, 2009).

Abu Taleb (2005) developed a model for larger hotels in Egypt to assist them recycling hotel waste. It involves nine steps: (1) incorporating recycling into hotel policies, (2) performing a waste audit, (3) reusing waste materials, (4) identifying eligible materials for recycling, (5) working with the waste carrier at all stages, (6) developing a waste separation programme throughout the hotel, (7) purchasing recycled products, (8) making staff aware of the hotel's waste recycling programme and (9) involving customers. Nevertheless, Abu Taleb's model targets only recycling and thus pays more attention to dealing with the waste after production rather than preventing it at source or reducing it during the production and processing stages.

Many countries undertake the principle of "pay as you throw" to encourage waste reduction activities (Fullerton & Kinnaman, 1996). Some local authorities in the United States have enacted legislation to enforce commercial recycling but such laws are particularly targeting larger businesses (Apotheker, 1995; Oskamp et al., 1991). Apotheker (1995) identified 13 ways for local government to enhance small businesses' recycling collection; among these are cluster collections from geographically concentrated businesses, imposing a charge for municipal waste collection, developing markets for recycled materials, making waste carriers and producers aware of the benefits of implementing recycling programmes and working in partnership with the private sector to encourage small businesses' recycling collection.

A range of barriers often face small businesses in recycling their waste, including lack of space, inconvenience and time constraints (Bacot, McCoy, & Plagman-Galvin, 2002). Small businesses often generate small quantities of waste which are unattractive to waste carriers. Most recycling companies typically require specific amounts of materials to be available before collection (Maclaren & Yu, 1997). Operators of small tourism firms often lack the information, guidelines, time and motivation to implement environmental practices (Horobin & Long, 1996).

Composting is considered an effective way for disposing of waste with high organic content, i.e. food waste (Department of the Environment, Transport and the Regions, 1999).

It is a process in which the organic waste is broken down biologically under controlled conditions so that the end product can be used for horticulture. The decomposition is carried out by bacteria in the presence of oxygen and the food waste is broken down into water, carbon dioxide and humus which are returned to the soil to improve its structure and to add to the micro-nutrients in the soil (Webster, 2000, p. 167).

Composting is an odour-free process, normally taking between three and six months, depending on how the materials are handled. The period can be reduced by turning over the composting materials regularly (Brunt, Dean, & Patrick, 1985). The composting process can be simply undertaken using a traditional compost heap at home or commercially via using open-air windrows, covered windrows2 and specially designed composting vessels (Marion, 2000; Pellamail, 2001). Traditionally, food waste was fed to animals in the United Kingdom but this option is no longer used since the foot and mouth disease outbreak in the United Kingdom in 2001 (Sarkis & Dijkshoorn, 2005).
Methodology

This study aimed to find ways of helping small hotels (those having 30 rooms or less) dispose of their solid waste in a more appropriate and sustainable manner. Current SWM practices in small Welsh hotels were explored using a qualitative research approach and case study methodology as a research strategy. The qualitative approach allowed the investigator to study SWM issues in small hotels in-depth, focusing on relationships and processes. Macle, Woodsong, MacQueen, Guest, and Namey (2005, p. 1) argued that “the strength of qualitative research is its ability to provide complex textual descriptions of how people experience a given research issue”. A case study of small hotels in Cardiff which is one of the largest Welsh local authorities was developed to explore the challenges facing hoteliers in relation to sustainable SWM practices and to assess the support available to them from the local authority. Data was collected using semi-structured interviews as it is a flexible method and typically utilises questions that are mostly open-ended in nature – giving the opportunity to get information that is meaningful and culturally salient to the informant, unforeseen by the researcher, rich and exploratory in nature. Also, it allows the respondents to speak freely in their own words and at the same time enables the researcher to probe for more detailed information by asking why and low questions (Mack et al., 2005).

A comprehensive list of the hotels in the area was compiled and then a purposive sampling approach was used to choose hoteliers who were directly experienced in the phenomenon being investigated and were able to help with the purpose of the research. The number of rooms was used as the main criterion for selecting a potential sample from small hotel owners/managers. Small hotels were identified as those having 30 rooms or less in order to define the scope of the research and assist as many as possible small hotels to manage their solid waste effectively and also to conform relatively with the definition given by Main et al. (1997) who indicated that small hotels make up 90% of hotels worldwide and are those having less than 50 rooms. Nine interviews were conducted with small hotel owners/managers in a Welsh local authority. In addition, four interviews were held with the local authority’s waste management officers using snowballing techniques. The investigator was introduced and undertook an interview with one of the authority’s officers. The interviewee was then asked to nominate potential respondents that could help the research further. The interview technique enabled the researcher to get in-depth information about the topic being investigated and to explore issues not initially set in the interview schedule. All respondents were contacted using a formal faxed letter followed by a telephone call to arrange a time for the interview. Most of the questions asked were of an open-ended nature covering a range of issues, including the actual methods used for disposing hotel waste; the extent of reducing, reusing and recycling hotel waste; the barriers to undertake sustainable SWM practices; the potential support needed to help small hotels reduce and recycle their waste, and the drivers that would encourage small hotels to consider sustainable waste alternatives. All interviews were recorded to avoid any bias and to increase the reliability of the research. The interviews lasted between 45 and 60 minutes. Data was analysed using the method of constant comparison (Glaser, 1978) which is consistent with a grounded theory approach.

Results and discussion

Waste management practices in small Welsh hotels

The small hotel operators used landfill as the main waste disposal method for daily waste. They simply put waste into black plastic bags and it was then taken away to landfill by the
contracted waste carrier – either the local authority or the private sector. Large or heavy items (e.g. furniture and televisions), which were produced on an intermittent longer-term basis, were disposed off by a range of methods – donation to charity organisations, delivery to household waste recycling centres (HWRC) or selling them. As one hotelier said:

I put it in black bag then it goes to the wheelie bin outside, all mixed waste. We use the recycling point sometimes when we have got some big beds or broken furniture; we put it in a car and drop it over there but it's rare.

Most hoteliers used the local authority for disposal of their waste as the public sector offered the service at a much cheaper rate than the private sector. Interestingly, small hotel operators did not maintain records of waste generation or disposal – they felt that there was no need to consider this issue. Moreover, the majority of operators were unaware of the legal requirements for disposing of hotel waste – some hoteliers unknowingly disposed of their hotel solid waste illegally through the domestic waste system. One hotelier said: “I didn’t know there were any legal requirements; like what”? In addition, very few hoteliers were aware of relevant waste legislation requiring commercial businesses to have and maintain a waste transfer note (WTN) for a minimum of two years to prove that they deal with an authorised waste carrier.

Reducing waste
The majority of small hotel owners/managers felt that waste minimisation was not an accessible waste management option. Hoteliers were not aware of techniques for reducing waste. Not one of the hoteliers had considered green purchasing practices to cut or reduce waste at source. The hotels’ purchasing decisions were built mainly upon the need for the product, the quality of the product and its price, with environmental attributes being low on the hotels’ list of priorities. Maineri, Barnett, Valdero, Unipan, and Oskamp (1997) similarly found that customers are less likely to adopt green purchasing practices. Some hoteliers described the difficulties associated with reducing different waste streams, particularly food waste and packages. As one of the hoteliers commented:

We don’t have the opportunity to reduce packaging, we don’t actually produce it and you can’t buy things without packaging. So we have to dispose of waste that is produced somewhere else. It’s a consequence of purchasing something.

Very few hoteliers reacted positively towards the idea of reducing the volume of their waste. They involved themselves personally in SWM to reduce disposal costs. They implemented different measures to minimise waste including cooking to order, efficient use of resources and employing experienced people as one of the hoteliers said:

Generally, I ask people the day before what they want so I know their needs.

Reusing waste
Reuse was considered a significant way of preventing waste materials from entering the waste stream. Some hotel operators consider reusing durable items, like furniture, by selling them or giving them to charities. However, most hoteliers indicated that reuse was not a viable option in a hotel business for daily waste and was limited to specific materials, e.g. plastic bags and fluid soap. As a small hotel operator explained:
We used to use one piece of soap per guest/night and after that it would be thrown away. Now we use a dispenser which we can refill to dispense the soap. We do little things like that.

Take-back schemes are a significant way of collecting a wide range of waste materials but require the participation of all stakeholders. However, only one hotelier reacted positively towards the idea. She suggested that the system should start with the producers who should accept the packaging of their products back and then both consumers and wholesalers should take part. Consumers should carry the packages back to the wholesalers who would keep them properly for the original producers to collect. On the other hand, many of the small hotel owners/managers were unwilling to take part in take-back schemes identifying obstacles to the implementation of such systems. Among these were increasing costs as they would have to drive to the wholesalers twice, time consumption and no space to store packaging until returning it. This is best explained in one of the hotelier's comments:

You have almost got the fuel and energy being used twice because you go to the wholesalers and buy stuff, bring it here, use it and then take the packages back to them. So that's like an extra amount of time to go back there. I suppose you could take it back when you do some shopping there but where am I going to put all the stuff before I take it back.

Recycling

The small hotel owners/managers showed a range of very different attitudes towards recycling. A few of the hoteliers were recycling some of their hotel's waste stream using either private companies or illegally using domestic recycling banks. The local authority in the study area did not have a recycling system for commercial businesses at the time this study was undertaken. Other hoteliers were very willing to recycle and felt positive about it. They claimed that it would be much easier if the local authority offered the service to commercial businesses. On the other hand, three respondents were not interested in involvement in recycling, describing it as a waste of time. As one hotelier said:

I don't do recycling here because it is easy with one green bin containing the black bags to get them out rather than recycling. We are very small business, if you talking to Hilton then there is massive waste there. For small hotels, again it is not going to change the world.

Hoteliers identified a range of barriers to recycling. All of them agreed that the lack of a "doorstep" collection service was the biggest challenge to recycling. The majority felt that it was difficult to separate waste materials as they had no space to locate different bins. Others felt that the process of segregating waste materials was very time consuming and costly. It takes time for staff to sort out rubbish and they were paying for that time. Likewise, some types of waste materials need to be treated, e.g. by washing, before they can be put out for collection. Furthermore, one respondent was worrying about using more bins to segregate rubbish, as they might give off a bad smell. These findings support previous research by Maclaren and Yu (1997) and Bacot et al. (2002) who reported various barriers facing small businesses in relation to recycling, e.g. cost, space and time.

Operators who were already recycling argued that their staff was interested in recycling. They suggested that staff should be provided with the tools to segregate waste (i.e. bins) and with training on how to reduce and recycle waste. One of the respondents added that handling rubbish was a task that should be added to the job description to be expected from staff when they were employed. Barclay, Buckley, and Landbo (2006) indicated that staff commitment was essential for the success of the hotel's waste minimisation programme.

The results also revealed that only a minority of hoteliers were involving customers in the hotel's recycling programme. They indicated that most customers were very keen
on protecting the environment and were willing to contribute to the streamlining of waste. However, the majority of respondents were negative about the idea, arguing that customers would not be interested in doing that. As one hotelier pointed out: “guests do not come to a hotel to sort out rubbish”, and another said: “it would be impertinent to say to them segregate your waste”. However, Hayward (1994) indicated that customers’ participation in the hotel’s waste recycling programme would be received positively.

The literature has showed that food waste can potentially be recycled and used for feeding animals (Cummings, 1997; Farrell, 2000). However, none of the hoteliers were following this route. The majority indicated that the quantity of food waste produced by small hotels was too small to make farmers interested in collecting it. Only two respondents were enthusiastic to feed the food waste stream to animals believing that it was more sustainable than disposing of it into landfill. However, this was not possible because it was banned by the UK’s animal by-product regulations (Statutory Instrument 2347/2005) which came into force in 2005 to prevent the occurrence of foot and mouth disease (DEFRA, 2009).

Interestingly, it emerged from the interviews that it would be helpful if the local council or other specific organisations (i.e. hotel associations) could build networks between small hotels to explore and discuss the best ways for managing their hotel waste. As one hotelier said: “We haven’t got hotel organisation for small hotels. I think it would possibly work if we all work together”.

The potential role of the local authority
The survey provided support for the view that the local authority should make it easy for businesses and provide the tools and facilities required for recycling, e.g. bins and bags to separate waste materials. Similar views emerged in a survey in Cornwall, UK (Vernon, Essex, & Curry, 2005). Also, there must be collection of recyclables on a regular basis. Two hoteliers commented that the council should provide bins in certain places designed specifically for commercial businesses, similar to those for householders, to dispose of certain types of waste, e.g. glass and plastic bottles. It would also be very helpful if the council could build waste recycling centres (WRC) designed specifically for businesses. The location of such points is a critical issue to hoteliers in order to be able to use them, as one of them commented:

Certainly, it would have to be local. I would be quite happy to send my staff out, if it takes them five minutes walk to take three or four bags to storage bins somewhere closer to the hotel. But it wouldn't be practical four days a week taking bags in my car and driving to some point.

Small hotel owners/managers stressed the importance of the awareness and education services in assisting them appropriately in SWM. None of the hoteliers had received any information from the local council regarding SWM. Several methods could be used by the council to get the message across, including: sending brochures or leaflets summarising why SWM is important and how it should be achieved, providing site visits to advise hoteliers about how they could reduce their hotel waste and organising training sessions or seminars for hoteliers to be trained and educated. Apotheker (1995) pointed out that most businesses were willing to recycle but lacked the necessary information to get started.

It is essential to motivate small hotels to reduce and recycle their waste by using incentives. Geller, Winett, and Everett (1982) previously indicated that providing monetary incentives is the most effective mean of motivating people towards recycling. Read (1997) added that the main failure in the UK’s SWM system can be attributed to the absence of real
incentives via pricing structures to reduce and recycle waste. Some hoteliers suggested that if the council could reduce the charge for collecting recyclables or at least provide some kinds of incentives – prizes, certificates or stickers – it would be sufficient encouragement for most hoteliers. In fact, controlling hotel waste is already an incentive for small hotels because if operators are able to reduce the amount of waste produced, the disposal costs they incur will go down. Most hoteliers stressed the need to review the current methods used for charging businesses and suggested that:

If you charge by the bag or by the weight or by the volume then that will be an incentive to cut down how many bags you put out or how much they weigh.

Potential ways to force the adoption of sustainable SWM practices
It appeared that cost was the most effective motivator in encouraging hoteliers to reduce and recycle waste. One of the respondents suggested that if the local authority increased the charge for collecting landfill waste and reduced the charge for collecting recyclables it would make lots of hotel operators think about it because they would save money. Likewise, social pressure seemed to be an effective tool as those who actually carry out recycling indicated that protecting the environment is one of the main reasons behind them recycling some of the hotel’s waste stream. As one of the hoteliers said:

Definitely, that’s why I am taking an active role in managing it personally. It is not just the cost but certainly the social effect. It has to be managed effectively across the city.

Legislation would be a powerful means of pressuring hoteliers to implement sustainable SWM practices. If there was legislation on the subject of recycling in small hotels, businesses would have to comply or risk being fined. However, government cannot penalise people for not recycling until they provide an effective recycling system for commercial businesses and tell people how to do it in order to make it a viable opportunity. Furthermore, half of the respondents indicated that competition between small hotels could be a significant factor in influencing businesses to manage their waste effectively. For instance, if any hotel were able to reduce its waste others would be very keen to know how they could possibly do that too. In commenting on the value of peer pressure, one respondent said: “if some other people do it we will have to do it as well to look as good as they are”. These findings are consistent with Ruiz (2001) who identified three main factors to encourage businesses undertake sustainable SWM practices: cost, protection of the environment and legislation.

The local authority’s existing SWM operations
Respondents said that the local authority did not play an adequate role in terms of the prevention/minimisation of commercial waste. The only help the council provided regarding these targets was to signpost businesses to other specific central government supported organisations (e.g. Arena Network and Envirowise) to support them regarding environmental management aspects (i.e. waste prevention/minimisation). The local authority’s waste management officers asserted that the council did not have the resources to deal with these targets for businesses. Even the educational team within the local authority was not enough to carry out educational services (site visits, seminars and training) to educate householders, commercial and industrial businesses on how to implement all the options of the waste management hierarchy. At the time the research was undertaken, the council considered
their waste prevention/minimisation targets as secondary objectives, whereas their primary targets were to meet the recycling rates. As one local authority’s officer said:

No, we do not have the resources to do that work (prevention/minimisation) for businesses but we definitely support that. We signpost businesses to other organisations that can help them with that like Envirowise and that kind of organisation.

The council had only started commercial recycling in January 2006. It operated three different schemes for commercial recycling: cardboard, glass and mixed recycling bag collection. The council built a new mechanised materials recycling facility in 2006 capable of processing about 90,000 tonnes of recyclable waste per annum. All of the officers interviewed argued that the mixed recycling bag scheme was the most convenient and efficient system for small hotels to recycle their general waste. This scheme would make recycling easy for businesses because they would not need to separate their waste materials, thus eliminating most of the obstacles associated with the process of segregating waste (e.g. time, space and cost). This is best explained in the following excerpt:

I think offering a mixed recycling collection is incredibly convenient for businesses. They do not need to have different bins for all different materials. They can have the bags and put it all together and as long as they do not contaminate with non-recyclable materials there will be no problem and it will be cost effective to do it and easy to use.

The local authority had not actively explored composting to reach their targets set by WAG (the authority was required to compost 40% of municipal solid waste by 2009/2010). At the time the research was undertaken, the local authority was more interested in recycling commercial waste to keep it manageable. As one local authority officer said: “It is one step at a time for us. Basically, we are developing a business”. Although the council had a programme specifically directed towards promoting composting at home they did not provide any facilities to help businesses (i.e. small hotels) compost organic waste other than providing informal advice if anybody asked. One local authority officer commented:

With food waste, it is very difficult anyway because most of operators do not have the facility within their hotels to effectively compost it and keep it healthy.

A solid waste management model

Based on the results obtained from the case studies along with the reviewed literature, a best practice model of SWM is proposed below to help small hotels manage their solid waste effectively (see Figure 2). The model considers four main steps to reach zero waste.

Step 1: Gain hotel commitment to SWM. The findings revealed that some hoteliers had showed commitment to tackle their environmental responsibility in relation to SWM. They implemented various practices to reduce and recycle their hotel waste. One of the hoteliers said: “I would love to recycle everything. I am very passionate to recycle and not to fill all these landfill sites with all that rubbish that is going to give toxics, gases and things like that”. In addition, external pressures have to be set and implemented properly to make small hotels reconsider their SWM practices; this would be best at influencing those hoteliers who hold negative attitudes towards SWM. The government should consider two main issues to pressurise small hotel operators into undertaking sustainable SWM practices: enacting legislation for recycling, and increasing the gap between the cost of recycling and the cost of landfilling of waste. The commitment to SWM is the most important level in Cummings’s hierarchy (1997). It provides the basis for the long-term success of waste minimisation programmes (IHEI, 1993). Operators should allocate the resources (e.g. time and staff) and set clear procedures for training and incentivising staff to reduce and recycle waste.
Step 1: Hotel commitment to solid waste management

Step 2: Select a waste carrier

Step 3: Undertake a waste audit

Step 4: Implement SWM programme based on the waste hierarchy

Most favoured option

Prevention
Minimisation
Reuse
Recycle
Compost
Landfill

Least favoured option

Figure 2. Best practice model of SWM in small hotels.
Step 2: Select a waste carrier. Hoteliers can contract with either the local authority or a private-sector contractor to get rid of the hotel waste. The decision should be based upon one key consideration, i.e. the environment. However, economic considerations are likely to drive decision-making and thus options should be costed to incentivise hoteliers to reduce environmental impact so that cost becomes a proxy for environmental impact. The model considers the significant role of the waste carrier in the hotel’s SWM programme. A range of facilities and services should be provided by the waste carriers to ensure that all the options in the waste hierarchy can be implemented. Waste carriers should educate small hotels on how to reduce and/or cut waste at source, i.e. through the adoption of green purchasing practices. Moreover, carriers should have recycling and composting systems for commercial businesses and provide the tools needed to enable them recycle and compost their waste, i.e. bins or bags to separate their waste.

Step 3: Undertake a waste audit. Previous research (Kirk, 1996; Tang, 2004) indicated that the auditing process is an essential step to move towards better SWM practices. Although auditing was not a practice carried out by the hotels in our case study, it is known to be effective at identifying types, sources and quantities of waste streams produced by hotel businesses and then determining the best way to handle each waste stream. Hoteliers must maintain records for waste audits and disposal routes to measure the effectiveness of their SWM strategies and their control of disposal costs. Disposal costs are a key performance indicator in this respect.

Step 4: Implement an SWM programme based on the waste hierarchy. The hierarchy introduces five options to handle solid waste until the stage of zero waste is reached. It starts with prevention of waste at source through undertaking green purchasing practices. Second, operators should consider different ways to reduce waste during the processing and production stages, for example adopting new technology and changing production techniques. Third, once the waste has been produced, hoteliers have to make use of it through different means: reusing waste materials in-house and exploiting product take-back schemes, selling durable items and giving large/heavy items to charities. Fourth, hoteliers should segregate and recycle waste materials. Finally, operators should compost organic waste, e.g. food waste. Thus, careful SWM in small hotels could result in zero waste for disposal to landfill.

Conclusion

Small hotels in the United Kingdom and all over the world contribute significantly to the degradation of the environment through the disposal of thousands of tonnes of waste to landfill. Some hotels are considering the implementation of more sustainable waste practices, i.e. recycling and composting. But many small hotel operators lack awareness of their legal obligations in relation to SWM. To evade waste disposal charges, some hotels covertly use the domestic waste stream for disposal of solid waste which is free of charge but intended only for householders, not for businesses. This highlights the need for local authorities to consider systems to control business abuse of the domestic waste stream and to raise awareness of the legal obligations of businesses regarding waste disposal.

The study has developed a best practice model for SWM in small hotels considering the options presented in the waste hierarchy. The waste hierarchy offers a range of options that can be used by hoteliers to effectively manage hotel waste, including prevention, minimisation, reuse, recycling and composting. However, these alternatives to landfilling are little used by small hotels. Operators showed a lack of awareness of the various ways that can be used to reduce waste in a hotel business. Hoteliers...
could pay much more attention to SWM preventing or minimising waste throughout the product life cycle and thereby avoiding or reducing disposal costs, e.g. through the adoption of green purchasing practices. The results have showed also that reuse has very limited application as a waste management strategy in small hotels. The UK government should promote the product-take-back concept for all waste streams, i.e. packaging, electrical and electronic waste and force manufacturers to accept their products back for reusing or recycling.

Most small hotel owners/managers are willing to recycle but they identified a range of barriers facing them: no doorstep collection service, issues relating to separation of waste and the cost of recycling. Thus, the local authority should provide kerbside collection and raise awareness in order to make recycling an accessible option. Networks of small hotels would be of great value to help them separate their waste together and benefit from successful cases. The research has suggested a number of potential pressures and incentives that could be used to enhance small hotel commitment to reduce and recycle waste: economic, legislative and marketing pressures. It is necessary for hoteliers to train and educate staff on how to reduce and recycle waste and also involve customers in the hotel’s waste recycling programme. Clearly, composting represents an appropriate option to handle a hotel’s organic waste. The local authority should support businesses doing in-house composting and provide the tools and education to do it. The findings of this study implies the need for further research to explore the potential role of the local authority and the private waste sectors in supporting small hotels manage their solid waste effectively.

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Notes

1. Visit Wales is the Welsh Assembly Government’s tourism team, within the Department for Heritage. Visit Wales is responsible for the promotion and development of tourism in Wales. It replaced the Wales Tourist Board in 2006.
2. Windrows are created by setting compost out into elongated piles, which are turned periodically to introduce oxygen, and also watered. See www.esauk.org/waste/composting/composting.asp – the site of the environmental services association.

3. ARENA Network is an independent organisation providing practical support on environment, waste and sustainability on a not-for-profit basis. Advice on environmental issues is provided by a network of coordinators based throughout Wales. ARENA Network works in partnership with the main agencies including Welsh Assembly Government, Environment Agency Wales and Local Authorities in delivering programmes that are free to eligible companies (see www.arenanetwork.org). Envirowise is a UK government-funded organisation offering businesses free and independent advice on practical ways to increase profits, minimise waste and reduce environmental impacts (see www.envirowise.gov.uk).

References


Mathews, J. (2009, Spring). Waste incineration will not combat climate change and there are environmental and health concerns. The Green Party Newspaper for Wales, p. 3.


