

TURNING LUXURY GREEN

**AN ENVIRONMENTAL RESOURCE FOR
THE HOTEL INDUSTRY**

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INTRODUCTION

Along with the increasing environmental awareness of consumers and businesses, there has been a growing trend towards green hotels. As consumers are better able to access information due to today's advanced communication networks, they are also better able to make more informed purchasing decisions. One trend that has become apparent is the increasing number of market opportunities to participate in activities more favorable to the environment. Hotels can capitalize on these trends by adopting new strategies geared towards environmental responsibility while maintaining their luxury status.

Through various research activities, we addressed specific issues associated with creating and operating a luxury green hotel. The information presented in this report is a compilation of our work over the course of two semesters. During this time period, we utilized focus groups, computer simulations, and basic research techniques to provide a clearer insight into the needs and practicality of sustaining a luxury green hotel.

Green hotels are establishments that consciously adopt strategies to reduce waste generation and resource consumption. Much of our research focused on how such strategies can be used in luxury hotels. We found that such strategies need not compromise the expectations of the guests and can actually be used to enhance the quality of their stay.

This report is ultimately designed as a resource for the hospitality industry and environmental constituents to assist in the planning, construction, and management of hotels that want to be considered both luxurious and environmentally responsible. The report is the result of multidisciplinary research and investigation by a team of students and faculty at Lafayette College.

TECH CLINIC: WHO WE ARE

The Technology Clinic is a small group of selected students that work with faculty mentors in order to solve real-world problems. Professors Dan Bauer and Dwayne Breger facilitate this year's Tech Clinic. Dan Bauer is the program's director as well as a Professor of Anthropology. He has participated in over 20 Tech Clinics ranging from sleep apnea diagnosis to small town revival. Dwayne Breger is an Assistant Professor in the Bachelors of Arts in Engineering Program where he teaches courses in engineering and society, sustainable development, renewable energy, and systems analysis.

This year there are seven students from a range of backgrounds and majors. Jessica Badger is a senior Economics and Business major from Scituate, Massachusetts, with a minor in Women's Studies. Carrie Baker is a senior from Basking Ridge, New Jersey, majoring in English with a Government and Law minor. Carolyn Candrea is a junior Economics and Business major and a French minor. She was born and raised in New Jersey and hopes to return there upon graduation and work in marketing. Irshad Haji is a senior Electrical and Computer Engineer born in Kenya. He is a Resident Advisor in Ramer Hall and the public relations officer for the ISA (International Students Association). Michael Lowe, a native of Easton, Pennsylvania, is a Mathematics major and Spanish minor in his junior year. Emily Murphy is a junior Philosophy major from Center Valley, Pennsylvania. She is on the Forensics Team and is involved in the Lafayette Communications Union. Seth Thomas is a senior studying engineering. He is from Lodi in upstate New York where his family produces wine.

Our mission as a Technology Clinic is to work together as a team in order to explore and have a positive effect on a particular area of the real world. For this particular assignment, the Tech Clinic's mission is to create a resource for the maintenance, operation, and marketing of environmentally friendly hotels. Specifically, we will be focusing on the area where the "green" aspect of the hotel meets the "luxury" so as to ensure a pleasurable and yet environmentally friendly visit.

WHY GO GREEN?

In the increasingly homogeneous hotel industry, hotels must make an effort to stand out from the crowd and attract the attention of travelers. The “green” hotel business is a growing niche because not only do these establishments differentiate themselves from the average side-of-the-road hotel, but they also fulfill a need in the market for less environmentally damaging hotels. Additionally, the environmentally sensitive techniques utilized by green hotels save money and increase revenues. Green hotels make sense not only for the environment but also in business terms.

As the population has become more aware of the damage inflicted on the environment by daily human activities, it has become increasingly evident that the hotel industry does more than its share in harming and wasting environmental resources. As a result, more and more travelers are looking for hotels that make an effort to protect the environment. Becoming a green hotel can be the foundation for a great marketing strategy, and the first step in marketing is providing consumers with what they want or need. A growing consumer base exists for green hotels, and marketing this characteristic of a hotel can help distinguish the establishment in the sea of standard, faceless hotels. Indeed, in a survey of Condé Nast Traveler readers, 60.9% of respondents indicated they would choose an eco-friendly hotel over a standard hotel if they were deciding between two otherwise similar establishments (Condé Nast Traveler, 1991). Travelers want to vacation without dealing with guilt about how their stay at a hotel has damaged the environment. If the hotel is a desirable place to stay, it will attract the usual range of customers plus those who will specifically seek out the hotel for its environmentally sensitive practices.

Not only does becoming a green hotel allow the establishment to compete in a different niche, but it can also cut down on long-term costs and increase revenue. Waste reduction is an obvious step in greening a hotel. It is increasingly expensive to dispose of waste; therefore, the large volume of waste created by hotels can take a significant bite out of profits. A fact sheet produced by the N.C. Division of Pollution Prevention and Environmental Assistance reports that, “a typical occupied guest room generates between

one to two pounds of waste on a non-checkout day [and] that amount doubles on checkout days.” However, the DPPEA also reports that about 80% of this waste can be recycled. Not only can a large portion of hotel waste be recycled, but measures can also be taken to reduce the amount of waste that is created. Some examples are outlined in later sections of the report. By reducing and recycling waste, disposal costs can be cut significantly without much effort and profit margins can increase.

Water usage in hotels is a major environmental issue, but one that can be addressed fairly easily. Water efficient fixtures can be installed at negligible cost considering that they can save 25 to 30 percent on water and sewage bills. Many hotels now have towel and linen reuse programs in place, and guests have come to appreciate this effort to conserve water and energy and reduce waste. A Holiday Inn survey indicated that 81 percent of the business and leisure travelers who responded “were more inclined to stay at a place where linen and towel programs were in place” (qtd. in E magazine). Again, conserving the environment can also pay off economically. A report prepared by Solana Recyclers, Inc. and sponsored by the EPA states, “The Green Hotels Association conservatively estimates that for every night a guest chooses not to have sheets and towels washed, a \$1.50 cost savings accrues. This includes savings in energy, staff time, water, and chemicals” (1991). Similarly, energy efficiency can save money. Energy efficient lighting, heating, and cooling methods will conserve resources and cut down on energy bills.

By reducing water and energy usage as well as waste, hotels can preserve the environment and cut costs. Some initial installation or switchover costs may be involved, but almost all of the environment saving techniques will pay off in the long run and increase profit margins. Such conservation methods, combined with a strong marketing strategy aimed at highlighting the environmentally sensitive operation methods, will ensure a profitable endeavor in the hotel industry.

HOTEL VISITS

In order to gain a better understanding of the way that other luxury hotels deal with the balance between luxury and environmental awareness, we visited two green luxury hotels: the Sheraton Rittenhouse Square Hotel in Philadelphia, and the Benjamin in New York City.

The Benjamin is the only hotel in this country to earn ECOTEL's five globe rating (see page 31). However, if it were not for this rating, guests would have no reason to think that the Benjamin was any more environmentally aware than any other luxury hotel. Everything seemed to be geared toward pampering the guest, and nothing seemed particularly environmentally friendly. The hotel focused on providing guests with an excellent night's sleep. It supplied custom-made Serta mattresses and a choice of eleven different types of pillow. Even the people at the front desk seemed to be mostly unaware of any environmentally friendly aspects of the hotel, though one woman volunteered, "We recycle a lot." The Benjamin appeared to be a very nice hotel for people seeking a luxury experience, but environmentalists might desire a little more proof of its green outlook and an effort to educate guests about environmental issues and solutions.

The Sheraton Rittenhouse Square Hotel is in Center City Philadelphia. The expectations of this visit were to find out how the hotel meets green requirements, what kind of feedback had been received from the guests, and to see a guest room. Unfortunately, our team member visited the hotel during a Red Cross Benefit and was unable to obtain the desired information due to the high level of activity in the lobby. The gentleman at the front desk with whom our team member spoke was very busy and did not have much information regarding the greenness of the hotel. Although our expectations were not met, the hotel provided information in the form of pamphlets that explained the green aspects of the hotel. In addition, the hotel proudly displayed a framed certificate of their recognition as the first "Environmentally Smart" hotel.

FOCUS GROUPS

Introduction

We chose focus groups because they offer the opportunity to gain a range of opinions and experiences on a personal and social level. Through discussion, participants are willing to give suggestions and make comments that could not be obtained through a questionnaire or survey. As focus group conductors, we found this method of obtaining information useful and eye opening in regards to the expectations of the hotel guest.

Our main goal was to gather information about hotel guests' experiences and expectations of hotels. Specifically, we wanted to focus on ways to combine the “environmental” or “green” aspects of a hotel and those of a luxury hotel.

Our first focus group consisted of seven participants from the Admissions Office at Lafayette College. There were five women and two men, all of whom travel on a regular basis for their jobs. Some were members of families with children and one traveled internationally. The group was well rounded and the members provided insightful information about their own hotel experiences.

The second focus group consisted of four people ranging from a single male to a married woman with three older children. In total there were three men and one woman. They work for Lafayette College Alumni Affairs and travel regularly for business, often staying at higher-end hotels to engage college alumni and other donors.

We began the discussion with some general questions and carefully guided the discussion through a list of prepared topics that we wanted to address.

Towels

The towel discussion centered on how to ask the guests to hold onto their towels for more than one usage without making it sound like a burden or taking away from the luxury feel of the hotel. We learned that all of our participants were willing to use their towel for more than one day. They suggested a simple sign on the back of the bathroom door as a way of indicating the hotel's towel policy – something similar to:

A towel on the floor means please exchange

A towel on the rack means I will use it again.

Although many hotels may offer this service, there were still some problems with following through with this policy. According to our participants, for example, the hotel bathroom may not provide a rack for the towels to be hung up after use. Another problem brought to our attention was that some found the hotel employees did not respect the guests' requests to reuse their towels; when freshening up the room, the hotel staff took all the towels regardless of any preferences and had all of them cleaned and replaced with a fresh batch.

Shampoo and Conditioner

We brought a sample shampoo and conditioner bottle as a visual aide for both focus groups. They were both made of a milky plastic and printed with information about a particular hotel on the outside. They each held 8 fl. oz. rather than the typical trial size. The shampoo and conditioner are sold in the hotel gift store, which acts to deter guests from taking the bottles from their own showers. The hotel that the bottles came from reused them by refilling the bottle prior to the guest's arrival. None of our participants liked this idea. They would much prefer a trial size bottle because the fact that someone else could get into their shampoo bottle made them feel uneasy.

After taking in all of the comments and insights we feel that the best solution is to have a shampoo and conditioner dispenser on the wall of the bathtub. The dispenser would be fixed to the wall and made of a nice chrome or stone finish. This dispenser should give

the impression that no one could get into it, and the way in which it was refilled should remain a mystery. Also, our participants commented that if they somehow knew the brand of the shampoo and conditioner, they would be encouraged to use it, especially if they knew that the brand was of a higher quality.

Out of the nine focus group members, only one individual insisted on the sealed trial size bottles as his number one preference. All the members opted either for the wall dispenser or just to provide his or her own toiletries. The two groups, although of different backgrounds, both expressed the same concerns.

Hotel Mission Statement

After listening to the participants in our focus groups and discussing this within our Tech Clinic, we all reached several conclusions on how hotel guests can follow the hotel's green policy without posting signs all over the room. We concluded that a simple framed mission statement with different ways the guests can participate, explained visibly in the room, is the best way to go.

All participants agreed that a framed mission statement is the easiest and most reliable way to notify the guest without overdoing it. Below, we provide a sample:

Our Mission:

To provide a clean, comfortable and relaxing stay for our guests while taking responsibility for our role in respecting the environment.

You can help us by:

- Reusing your towels
- Turning off the lights and television upon leaving the room
- Recycling any aluminum or glass items
- Turning off the water when brushing your teeth and shaving
- Turning down the air conditioning or heater when out of your room for an extended time

We feel that with the proper presentation of a mission statement, guests will be more than willing to accommodate without feeling burdened by the simple requests. It was also recommended to us that a symbol or logo of some sort be present wherever an “environmental” product is used. For example, the symbol might appear on the cups from the room or the soap wrappers next to the sink as a way of indicating where the hotel has made an effort to use environmentally friendly products.

Recycling

Recycling is a generally accepted way of helping the environment. However, hotels rarely provide a place for the guests to recycle. After discussing this with the participants of our focus group, the consensus was that the easiest way to get guests to recycle is to provide a recycling bin somewhere in the room for recyclables. Again, this small act will only be successful if the hotel staff also respects the recycling policies.

It was also brought to our attention that if a hotel is to be environmentally sound, it should not use any Styrofoam products. In addition, excess plastic wrapping on cups was thought to be wasteful and unnecessary.

Check-in and Lobby

The expectations of the staff behind the front desk were fairly minimal. More than anything, the travelers we spoke to wanted a smile in addition to general knowledge of the area and the ability to answer any simple questions concerning the hotel.

The lobby should look clean, fresh, and inviting. It should be a place that invites people to sit and chat. The ambiance should be that of greenness with plants and fresh flowers. Most importantly, however, all focus group participants expressed the need of a friendly and helpful staff member behind the front desk to assist them in checking in, and perhaps giving them directions to a restaurant in the area.

Locating an Environmentally Friendly Hotel

Sometimes it is difficult to locate an environmentally friendly hotel for two reasons: there are no environmentally friendly hotels in the area where a guest may be looking to stay, or a hotel may not always advertise its environmental policies. Our participants said that price and location are more often than not what they look for in a hotel. However, should price and location be roughly equal, our participants unanimously expressed interest in staying at a green hotel over one that is not green.

Water

The idea of bottled water provided by the hotel was very popular among everyone in the focus groups. How the guests should be charged for the bottled water (or if a charge is even an issue) did not seem to matter nearly as much as the idea of having the bottled water available. Furthermore, the focus group participants also expressed a desire to know about the filtration process (should there be one) of the tap water. After taking in the different opinions, we concluded that bottled water is close to essential and if the water is filtered, the guest should know either through a sign above the sink in the bathroom or somewhere on the mission statement.

Hotel Qualities

Our participants each expressed the one quality that they always look for in the hotel.

The top four things that our focus group participants look for in a hotel are:

1. Security
2. Cleanliness
3. Location
4. Lobby Atmosphere

GREEN FEEL

A major component of the design of a Green Luxury Hotel is combining the green and luxury feel of the hotel experience. After visits to “green hotels,” and numerous conversations in our weekly meetings, we decided it is essential to find innovative opportunities where both the green and luxury objectives are met, and otherwise find a place of balance between these two qualities. In many cases there are synergies in these two areas. It is important not to ask too much of the customer because that could take away from the luxury of the hotel. However, maintaining green standards is essential to the basic function of any green establishment.

Clearly, it is important to promote the luxury feel of the hotel because if the hotel does not feel luxurious, then the hotel is not luxurious. It is also vital to promote the green feel of the hotel for a variety of reasons. First of all, a green feel to the hotel will satisfy guests who chose the hotel because of its environmentally friendly reputation. Second, it seems that one of the ways to encourage guests at the hotel to embrace environmental behavior during their stay is to give the hotel a "green feel." Just as people who would respect each others' property while it is well maintained are more likely to commit vandalism when the property is poorly maintained, people who would litter without much thought in a city might think twice before littering in a pristine national park. While the hotel is not likely to reach either of these extremes, by giving it a green feel we might expect to reduce the unnecessarily wasteful behavior of the guests. Finally, if guests who stay at the hotel are introduced to ways of living both luxuriously and greenly, hopefully they will bring these ideas home with them after their stay and employ some of these environmentally friendly ideas in their homes and workplaces.

Fortunately, many things that will promote a luxury feel in a hotel can simultaneously promote a green feel. For example, aquariums full of exotic fish and pots of beautiful plants and flowers are both luxurious and add to a green ambience. These could be placed in the lobby and other public areas. Perhaps upon check-in guests could be asked if they would like to have an exotic fish or flower placed in their room for the duration of their visit. These could be cared for by the housekeeping staff or an external business

and be at once green and luxurious.

Having original artwork is luxurious, and if the artwork is nature oriented it can also feel very green. Displaying local artists' original work and offering it for sale would provide a community connection promoting economic goals of sustainable development.

The floors of the hotel could have environmental themes. For example, if there are only three floors of guest rooms, perhaps the floors could have an earth-water-sky theme. If there are more floors, then perhaps the themes could be based on climatic zones, or animals, or other environmental themes. These themes could be reflected in the art displayed on each floor, and even the color of the carpet and walls. A "water" or "fish" floor could have a large aquarium by the elevator to engage guests while waiting for the elevator. An "earth" or "reptile" or "amphibian" floor could have a terrarium, and a "bird" or "sky" floor could have a birdcage.

One of the trademarks of a luxury hotel is the complimentary accessories that guests receive. The more and higher quality accessories that people get, the more luxurious a hotel seems. Fortunately, these accessories can be environmentally friendly as well. Perhaps instead of mints, little seed packets could be placed on pillows. A basket of "free" fresh fruit or dried rainforest fruit and nuts could be placed in rooms. The little "free" shampoo bottles could either be made of some environmentally friendly material, so they don't clog landfills, or perhaps the bottles could be designed to be so nice that guests are encouraged either to leave them in the bathrooms, or take them and reuse them rather than throw them away. If these nice bottles are sold in the hotel's gift shop, it might reduce the number of bottles taken by guests.

There are ways to reduce waste in the food services of the hotel while at the same time increasing the luxury feel of the hotel. Rather than using paper napkins and disposable plates and flatware, room service could use cloth napkins and real dishes and flatware. If people have leftovers in the restaurant downstairs, instead of having them placed in a foam container, the hotel could place a platter cover over the uneaten portion of the food

and offer to deliver the food up to the guest's room. The hotel could even offer to reheat the food before delivering it at some prearranged time.

Using natural lighting during the day feels greener than using florescent lights. One idea is that a little Zen garden could be placed in each room, and each time the housekeeping staff came through they could make a new track in the sand. The hotel could offer outdoor activities that highlight the area's local natural attractions.

There are also things that would promote a luxury feel that would not harm the green feel of the hotel. Dark wood furniture is luxurious, as are soft sheets and towels. It is possible to get such things from places that use recycled or otherwise environmentally friendly products. Excellent service and attention to detail are also essential to a luxury hotel, neither of which would harm the green aspects of the hotel.

In short, it is easy to promote the green feel in the hotel while also promoting the luxury feel. This would have the effect of making people feel pampered while simultaneously encouraging and softly educating them to be more environmentally conscious and less wasteful during their stay and afterwards.

HOTEL MANAGEMENT

Background

The success of any business in the service industry is based largely upon the ability and efforts of its employees. Without a good staff, a business cannot gain the respect of its clients to establish a credible background. As is the case in most businesses, the quality of work performed by employees is based in large part upon the managing ability of those in positions of authority. To get a better idea of the problems and concerns involved in hotel management, we researched pertinent hotel publications. The information gathered was primarily from Cornell University's School of Hotel Management, a leader in discovering innovative managing techniques in the service industry. Since the ability of a service industry, such as the hotel business, is so dependent upon the success of its employees there has been a substantial amount of research performed by Cornell's professors to find which managing techniques work the best.

In today's competitive environment, high-performing organizations have learned how to deploy human resources practices to further enhance their success. The most successful businesses create a bundle of employee practices that are customer focused, aligned with each other, and reinforce the organization's future ambitions. Innovative hotel companies develop their human resources practices to help build and sustain successful employee relationships. Since a "green" hotel has the added responsibility of being luxurious, it is essential that its employees are well educated in both customer relations and the hotel's environmental policies. Therefore, proper employee training and management are essential for any green luxury hotel to maintain a competitive edge in today's high-tech service industry.

Cost of Turnover

Virtually all jobs have been altered by technology and downsizing, and hotel employees have more to learn and do than they did two decades ago. As is the case in most industries, employees that have been with a company for a number of years and know all

the procedures are much more valuable than those that are newly hired. However, the cost of hiring new people and waiting for them to become proficient in their job is one that is significantly greater than most managers would think. One of the publications that we found to have relevant information to any hotel's success was by two Cornell professors, Timothy Hinkin and Bruce Tracey. According to Hinkin and Tracey, in a world where lodging facilities are largely separated by mere price, there are two primary ways to compete and differentiate the end products. The first is by competing on price and minimizing costs. This strategy's long-term prospects are not good, however. The second is to compete by providing exceptional service, making it necessary to appreciate the importance of the line employees who actually do the work. They will not provide exceptional service, though, if they are poorly managed and undercompensated.

Hinkin and Tracey state that turnover rates are usually based upon dissatisfaction with the current job rather than attraction to other job opportunities. Poor pay is often cited as a reason for leaving, but poor quality of supervision and poor working conditions are the reasons that are more frequently given. Many employees are poorly supervised and are often given little responsibility or authority in the work that they perform. In addition, many jobs are mundane and repetitive, making working conditions unpleasant. Also, compensation is frequently too low for work that involves intensive guest interaction, one of the most crucial steps of providing good service. According to Hinkin and Tracey's study, many managers do not understand that productivity increases when one maintains a stable workforce by providing employees with meaningful work and a pleasant workplace. Work groups that experience less turnover are more productive than those that have higher turnover. This cost of lost productivity has a direct effect on co-workers and guests.

In addition, most hotel managers do not understand the additional costs that accompany high levels of turnover. The expenses are substantial even in entry-level positions for relatively simple jobs. For instance, the overall average cost of turnover for a front desk associate for an average hotel is nearly one-third of the position's annual salary (Hinkin and Tracey, 20). Turnover, perhaps more than any other factor, contributes to a reduction

in service quality and an increase of additional problems for front line supervisors, who are constantly involved in predicaments when their departments are staffed with inexperienced employees. This disruption means that the experienced employees are doing some of the work of the new employees, often neglecting their own responsibilities to the guest while doing so. Therefore, to improve these conditions, it is essential that hotels improve managerial practices and be more creative in the way work is designed and designated.

Innovative Management Practices

Employee training and skill building have become increasingly critical areas of management for firms working to enhance service quality, reduce labor costs, and increase productivity. Cathy Enz and Judy Siguaw are two noted critics who have studied hotel practices for a number of years. After reviewing two of their publications, we discovered a number of relevant objectives that should be considered for any hotel's future. According to Enz and Siguaw, successful employee-development programs allow new employees to entertain the thought of rising in rank by making them eligible for a general manager position if they show necessary talent and ambition. In addition, training the employee for other tasks, not necessarily related, can give the worker a better understanding of the overall operation of the hotel. This is referred to as cross-training, which means that if a guest has a problem, the person they ask is more likely to provide a solution or at least point them in the right direction. Employee sharing of expertise and training helps to increase the overall skill level of employee teams and also helps to distribute responsibility for the total operation more evenly.

Hotels must be willing to empower all employees with responsibility and authorization that goes beyond their normal job requirements. This is especially true of a green luxury hotel, which needs its employees to make the guests' experience luxurious. If a guest presents a hotel employee with a question or problem, it is the responsibility of that employee to do all he or she can to provide a solution. This means that managers must be willing to delegate control to their staff members who show ample competency. This will require the hotel to incur increased short-term expenses, but overall profitability

should also increase in the long run. In order for this “never say no” policy to work, however, there must be good communication between upper level management and the lower-level employees. Therefore, having regular employee meetings in which the objective is to discuss current problems and solutions is essential. Regular feedback from the workers not only provides first-hand knowledge for the managers to make more effective policy decisions, but it also promotes a healthier, friendlier working environment. Also important to good communication is guest feedback, which can give the best indication of whether or not employees are meeting their expectations.

Two Methods of Employee Empowerment

Two innovative practices we deemed especially pertinent for possible implementation in a green luxury hotel were the following:

- 1) Housekeeping Teams: After creating a training program for supervisors and team leaders, the team leaders would create two trial teams of housekeepers composed of the most enthusiastic employees. These employees would form, self-directed housekeeping teams, with three people per team, assigned to all room duties in a given block of rooms. Within this block they would choose their own work areas, evaluate room quality, and conduct room inspections. According to Enz and Siguaw’s study, this program led to better employee retention and increased moral of room attendants, faster room cleaning, and fewer intrusions on the privacy of guests.
- 2) Captain Quality: Each of the hotel’s employees takes a turn as Captain Quality, an assignment that begins with selecting an employee to be a guest of the hotel (including dinner for two). The employee then spends a week observing every department and submits a list of six points of needed improvement in the hotel. The points are posted and directed to the attention of the responsible department heads. The process then resumes the next week with a new Captain Quality. In addition to this, employees would take training programs that focus on employees’ responsibility to take initiative to solve problems and create a more pleasant guest experience (Enz and Siguaw, 27).

Employee Recognition and Green Policy Implementation

In addition to good managing, employees also need some incentives to perform beyond expectations, especially in a green luxury hotel. While their training provides employees with the knowledge necessary to perform their jobs, that knowledge must be demonstrated to guests when the situation arises. In addition, formal recognition of good work by management and fellow workers is important. Programs such as employee-of-the-month/year and special rewards or gifts for excellent performance can provide such recognition. Enz and Siguaw point out that while employees' base pay usually reflects local competitive labor markets, variable pay has emerged as a way to reward employees whose performance has led to the hotel's success. An example of this is the Houstonian Hotel, which pays a standard rate to all employees but offers quarterly bonuses to all employees based on the hotel's success.

After review, the most important aspects of implementing innovative managing policies is to start soon and go slowly. A large emphasis should be placed on getting employees involved early in the process (including during the selection or hiring process) and rolling the program out gradually to gain employee support. Starting early and going slowly also allows more time to provide proper training and sufficient empowerment to allow employees to excel in their jobs. As a new policy is implemented, it is sure to have some minor problems that will need to be worked out. Managers should remember that their projects are not likely to be simple or easy. Good human resource practice is long-term and requires ongoing adjustments and determination. Hotels that focus on cost reductions as a measure of job performance send the signal to employees that encourages scrimping on guest services, not on satisfying guests' needs. A commitment to service may incur increased expenses, but profitability should also increase. Therefore, employee evaluation standards should focus on overall profitability and not solely on costs.

MARKETING

A good marketing campaign offers the right product at the right price to the right market at the right time. In our case, the product is a luxurious and environmentally friendly hotel. The market consists of conscientious hotel users that would ordinarily target luxury hotels. The time is as ripe as any, with the current focus on global warming and the environment; such hotels fill a gap for a requirement in the advancing hotel industry. In the rest of this section, we discuss ideas and strategies that have substantial potential in promoting such a hotel.

A hotel should make sure that the clientele it targets is as diverse as possible so that, even upon opening, it will meet each guest's needs and wants. This is very important because a crowd during the opening and first few weeks is a great jump-start and will subsequently increase the hotel's potential customers. This will also create a great avenue of advertising through word of mouth, newspapers, and magazine reviews. A way for such a hotel to increase its customers during its first few months would be to offer them rebates for filling in surveys that rate the hotels' services and make suggestions for improvement. This would benefit both the hotel as well as the customers. The hotels get more business and the customer gets a discount on services that the hotel provides.

The Internet is an increasingly effective way to promote a business, and booking hotels online is becoming more and more common. Having the hotel listed on travel websites and providing a way for travelers to make reservations online is very important. Studies have shown an increase in hotel guests for many hotels due to online reservations. Along the same lines, the hotel should provide a means for online reservations on their own website and, if possible, include a virtual tour of the hotel that highlights the luxury accommodations, dining facilities and the hotel's environmental awareness.

Travel agents and travel agencies play an important role in helping travelers decide where to stay during their trips or vacations. Hosting an annual reception for local travel agents and tour guides can be a very effective means of marketing. Once travel agents and tour

guides know enough about the positives of such a hotel, they can let their customers know about them.

AAA produces a hotel guide and rating system to which many AAA members often look when searching for a hotel in unfamiliar territory. Making sure that the hotel is listed and advertised in travel guides and magazines is another means of promoting the hotel and creating awareness of its existence.

Many prominent businesses have a travel or human resource department. Inviting such businesses to a reception to increase their awareness of the hotel and providing incentives for them might help the hotel create a base of customers that it could rely on all year round. Also, creating a business package with incentives for such businesses to use the hotel's conference and catering facilities could prove successful.

The same concept could be used to help promote ballroom and catering facilities. Another promotional idea is to hold an open house for event and wedding planners to view the hotel and answer any questions that they might have. We suggest serving wine and hors d'oeuvres and letting planners see the facilities that the hotel has to offer. This provides them with incentive to direct couples to use the hotel's facilities.

Billboards are an effective way of letting residents and travelers know of the hotel's presence. Of course, care would have to be taken in making sure that such billboards promote the luxury feel that the hotel provides, and consideration would need to be taken regarding the environmental stigma of billboard advertising.

In an attempt to promote the hotel locally, the hotel could offer weekend packages for couples or families. One possible example is a package that includes two nights at the hotel, a dinner, and tickets to a show at a theatre. This package could be specially priced to attract locals who might be looking to get away from the kids for the weekend or just looking for something new. Along the same lines, special discounts for senior citizens would be very effective.

A luxury hotel that is environmentally friendly can take advantage of the educational value of its facilities to schools in the area. The hotel can host educational field trips and can promote its various 'green' endeavors. This would educate students on how much environmental awareness makes a difference in one's setting. Flow charts that illustrate how much the hotel saves on electricity or how much waste reduction and recycling they do and how it benefits the local community are examples of how such a hotel could run this program. Students with such awareness are more likely to encourage their parents to frequent green hotels and promote the environment. This serves as a great source of marketing for both green hotels in general and the particular hotel.

The final marketing idea that we would like to suggest is providing a means for hotel guests to purchase amenities that are environmentally friendly, especially those certified with a Green Seal (see page 33). With each amenity they sell, the hotel could also provide information on how such an amenity protects the environment we live in. Apart from the financial advantage of these sales, they would also serve as subtle reminders to the guests of their visit, and also increase their awareness about the environment.

ENERGY EFFICIENCY AND RECYCLING

Hotels are a large producer of solid waste per person. Therefore, implementing a recycling program is a necessity if a hotel wants to be environmentally friendly. Each hotel's recycling program should be designed to incorporate recycling into daily procedures of operation for all employees. Employees should be encouraged to develop recycling procedures for their specific jobs and to participate in the organization and operation of the recycling program in their hotel.

Hotel guests have been virtually unanimous in their praise of hotel recycling projects. In addition to this public relations value, recycling programs also provide hotels with considerable savings in the cost of waste disposal. Savings range from \$300 per month in small hotels to as much as \$3,000 per month in larger hotels. The amount of waste recycled varies at hotels, depending on the type of hotel, kinds of activities, and the degree of commitment by management and employees. In addition to the impact at the landfills, there are energy savings in product manufacturing, transportation, and packaging.

Each hotel recycling program must be specifically designed to accommodate the hotel's procedures of operation, hotel activities, and structural design. There are numerous guidebooks available to assist hotel managers in organizing a hotel recycling program and making more environmentally oriented purchases. These guidebooks give purchasing recommendations for hotel offices, housekeeping, food and beverage, and laundry departments by providing basic information on choosing products that produce less waste and toxicity and save energy. Two guidebooks that focus on recycling and source reduction programs are *Recycling in Hotels and Motels, a Guide for Recycling Managers*, and *EcoPurchasing Hotels and Motels, a Guide for Hotel and Motel Purchasing Managers*.

Tips for Beginning a Recycling Program

- Conduct a waste audit to identify and quantify recyclable materials currently being thrown out
- Select a materials disposal method before designing the recycling program
- Involve the hotel's employees in all stages of the recycling program
- Design a materials flow plan to identify container size and placement
- Select recycling equipment and methods of transporting materials

Tips for Beginning an Ecopurchasing Program

- Reduce waste by purchasing in bulk
- Reduce toxicity by using products with less hazardous ingredients
- Avoid wasteful products that add to the environmental or economic costs of waste disposal
- Repair and reuse products instead of buying new ones
- Select products made from recycled materials
- Purchase energy efficient equipment that causes less environmental harm
- Purchase products that carry Green Seal certification

Since hotels consume large quantities of water, implementing a system that reduces or recycles wasted water can greatly improve a hotel's efficiency. Such a system that has been implemented in numerous homes, commercial buildings, and hotels is the graywater system.

What Is Graywater?

Graywater is of lesser quality than potable water, but of higher quality than blackwater, which is water flushed from toilets. Also, water from the kitchen sink, garbage disposal, and dishwasher usually is considered blackwater because of high concentrations of organic waste. Graywater derives from other residential water uses. Water from the bath, shower, washing machine, and bathroom sink are the main sources of graywater. Graywater is most suitably used for subsurface irrigation of inedible landscape plants. It

could supply most, if not all, of the irrigation needs of a domestic dwelling landscaped with vegetation in a semiarid region. Along with the application to outside irrigation, graywater can be used in some situations for toilet flushing. An example of this would be a system that reuses the water from a hotel's laundry facilities for the flushing of its toilets.

America is facing a critical water supply shortage because of population and economic growth, persistent drought conditions, and a lack of adequate planning for future water needs. This is evident in current efforts in many states, as well as semi-arid and arid areas, to adopt stricter standards for water conservation. Many states and counties currently are reexamining their policies and codes regarding on-site wastewater treatment and recycling due to a variety of factors: persistent drought and water shortages, lack of adequate wastewater treatment and disposal facilities, and growing emphasis on demand-side management strategies. Finding additional water supplies and expanding existing wastewater treatment plant capacity is expensive, sometimes impractical and, at best, involves long range planning.

Fortunately, solutions are available which can reduce water consumption in an environmentally acceptable manner. A number of devices can help water users reduce consumption and demand without any appreciable impact on lifestyles. Such devices include low-flow toilets, low-flow showerheads, and faucet flow restrictors. Generally speaking, these have been well received and have become steadily more popular as the cost of municipal water has risen.

Further reductions can be achieved through the use of on-site wastewater treatment and recycling systems that permit reuse of graywater or combined wastewater for landscape irrigation and toilet and urinal flushing. As an example, in the typical household, approximately 34 percent of the water consumed is used in flushing of toilets. The remaining 66 percent of the water for the most part is available for on-site recovery and reuse. On-site wastewater treatment and recycling systems can be used in all types of residential and commercial buildings and in most types of institutional and industrial

buildings as well. Initial costs for combined wastewater treatment and recycling systems in larger commercial and industrial facilities typically are approximately \$1.00 per gross square foot. This includes the cost of equipment and installation of components. It also includes the cost of standby sewer connection required by some systems for emergency service and periodic residual solids disposal. Additional costs include building space for equipment and return water plumbing. Operating costs are related principally to energy and demand. Energy is consumed in on-site graywater and combined wastewater treatment and recycling systems by electric motors that operate pumps and aerations equipment, and by disinfection equipment (e.g., ultraviolet lamps).

Advantages of Graywater Use

Graywater and onsite wastewater treatment and recycling systems could result in water savings ranging from 50% to as much as 90% per installation.

Not only does using graywater for irrigation conserve potable water, but graywater actually may be better for plants, its use resulting in more vigorous vegetation. Graywater may contain detergents with nitrogen or phosphorous which are plant nutrients. It may also contain, however, sodium and chloride, which can be harmful to some sensitive species

With water costs rising, water, even graywater, will be considered a resource of great value. This shift in perception might persuade homeowners and policy makers to view graywater as a valuable domestic water resource. Unused graywater might be seen as money wasted, its use a financial advantage.

Graywater also offers potential financial advantages to regional sewage treatment facilities. Their capital and operational expenditures may decrease because graywater use diminishes sewer flows, thereby lessening the need to expand such facilities.

Controlling Costs and Increasing Profits Through Energy Management Programs

No matter what the energy expenses, an energy management program can identify costs and potential savings by involving employees in a constructive plan of action. Involving employees in energy management allows them to suggest ideas based on their own job expertise, and to understand that their efforts can make a difference. A well-organized energy management program can improve the hotel environment and guest comfort while reducing wear and tear on equipment. Specialists who have worked with hotel energy projects say energy reductions of 10% to 25% are possible, depending on:

- The age and size of the hotel or motel
- The maintenance and operating procedures in use
- The type of equipment already installed
- Previous efforts to conserve energy
- The attitudes of both management and employees toward a workable plan for energy conservation

In spite of low energy prices, hotel and motel energy costs can and should be controlled. This can be done by implementing the following tips, which are designed to help hotel and motel operators establish and maintain an energy management system without infringing on the comfort, convenience, and safety of guests:

1. Turn off heating and cooling systems in unoccupied guest rooms.
2. Regularly check and clean filters and air-conditioning coils.
3. Instruct housekeeping to use natural light when cleaning guest rooms and to turn off cooling units and close drapes when leaving rooms.
4. Replace incandescent lamps with compact fluorescent lamps.
5. Inspect and clean condenser coils on ice makers and vending machines.
6. Operate pool heater only during times of pool usage.
7. During periods of low occupancy, it may be possible to close down entire wings or floors of hotel or motel, and set thermostats very high in the summer and very low in the winter.

8. When assigning rooms, make sure that guests are assigned to adjoining rooms so that the heating or cooling of occupied rooms acts as a buffer or insulator. A chart identifying guest room sections served by the same central energy system can be displayed at the front desk to aid personnel in assigning rooms more efficiently.

Developing a Plan for Energy Management

A successful energy efficiency plan must have the support of hotel management to achieve significant results. Without strong management commitment, few plans will succeed. Select a goal such as a 10% reduction in annual energy costs during the next 12 months. The goal should be based on solid information about energy consumption, using the following steps:

- 1. Review:** Review the past 12 or 24 months of energy costs to develop baseline information on occupancy patterns, seasonal changes, and hours of equipment operation. The local utility company can help, usually free of charge.
- 2. Walk-through:** Perform an evaluation of the property looking for ways to make operation and maintenance more efficient. Gathering information on thermostat settings, lighting levels, air conditioning energy use, humidity levels, and peak hours of power use will guide later decisions.
- 3. Team build:** Involve department heads, supervisors, and key employees. Hold a meeting to share your information, set up an energy management committee, and delegate responsibilities
- 4. Set objectives:** List possible projects with estimates and goals for costs and savings. Use the information on the projects list to prioritize things to do. This will allow you to set achievable goals.

5. Implement: Begin more energy efficient operational and maintenance procedures by training employees. Post energy-saving reminders with practical advice in housekeeping areas where employees pick up supplies and in engineering equipment areas. Have supervisors talk with employees about the importance of shutting off energy using equipment after cleaning rooms.

6. Track progress: Keep track of your savings to see if what you planned is working. Look at each piece of equipment or area of energy use to determine why energy conservation measures are successful or how they need improvement.

7. Evaluate: Periodically review the energy management program's progress to set new goals or modify your plan. Management should review goals and plans at least once a year.

CERTIFICATION OPTIONS AND ASSOCIATIONS

In order for a hotel to be recognized as being environmentally friendly, it is important to examine the various green certification options available.

The Tech Clinic came across three major certification options: ECOTEL, LEED, and Green Seal, as well as the “Green” Hotels Association. ECOTEL and the “Green” Hotels Association are both options geared towards the hotel industry. LEED is a certification program that promotes the green construction and maintenance of any building, regardless of its purpose. The Green Seal program provides environmental certification not only for hotels, but also for products that are determined to be more environmentally friendly than their counterparts.

These certification options and associations are outlined below.



ECOTEL Certification

ECOTEL Certification is an awards program created in 1993 specifically for the hotel industry by HVS International. The program recognizes hotels and resorts that specialize in the field of environmental responsibility, and due to its stringent standards, considers itself the premier environmental certification in the hotel industry. Since 1994, more than 1000 hotels from two-dozen countries have applied for ECOTEL certification, but only 50 hotels have earned the award. The Hotel Benjamin in New York is the first hotel in the United States to receive the highest certification, five ECOTEL globes.

In the ECOTEL program, hotels attempt to earn up to five globes, one for each major aspect of environmental operation: environmental commitment, employee education, energy management, solid waste management, and water conservation. The environmental commitment globe and at least one other globe are required for ECOTEL certification. While the environmental commitment globe is somewhat general to allow

leeway for individual buildings, the other globes have quite specific requirements. There is a stringent process of applications and inspections, and a point total is used to determine if the building qualifies for each globe. If the hotel qualifies for ECOTEL certification, HVS International undertakes a marketing/public relations campaign for the hotel. If the hotel fails the certification, HVS will create a plan of action to help the hotel improve, and they will perform a second inspection within six months, free of charge. The certified hotels must be re-inspected every two years to continue certification status.

ECOTEL also provides consulting services through HVS International to help a hotel establish an environmental management team and operations. HVS works with almost 1000 hotels each year, so they have extensive experience in their field. They make recommendations on how to create synergy between the management and workers, and they check in from time to time to see how the implemented policies are working and using feedback surveys to see what strategies should be used to increase productivity. A valuable aspect of HVS services is employee training; members of HVS will work to train the managers in green policies and procedures. The managers are also trained in how to educate the other employees about environmental management. For more information, see the ECOTEL website at www.hvsecoservices.com/ECOTEL.htm

LEED Certification



The LEED (Leadership in Energy and Environmental Design) certification program was one of the first programs to acknowledge buildings designed to be environmentally friendly. LEED was developed in the late 1990's by the U.S. Green Building Council for various groups and agencies, including the U.S. Department of Energy. The certification requirements were developed by representatives from many organizations and cover a wide variety of design specifications, including the site of the construction, water management, and indoor air quality. A checklist is used to determine the number of points that a building earns. A minimum number of points is required to receive LEED certification, and the building can receive a rating of silver, gold, or platinum based on the number of points received.

Recently, LEED has begun to expand their certification options. Some programs are still in the development and trial phases. The new LEED system consists of five different certification plans: LEED for New Buildings (the original LEED certification), LEED for Core and Shell, LEED for Commercial Interiors, LEED for Existing Buildings, and LEED for Residential Buildings. LEED for Residential Buildings is obviously not an option for hotels, and LEED for Core and Shell is also usually not valid for hotel projects since hotels are quite concerned with the interior design of the new hotel as well as the exterior structure. The other three are all possibilities for new hotels, depending on whether the hotel is a new building, an existing building, or is undergoing renovations. The LEED for New Buildings Certification Program is already in use, and the other two programs should be ready by 2003. As with the original LEED Certification Program, a point system is used to assign a rating for the hotel.

As the demand for environmentally friendly hotels increases, green certification will become a powerful marketing tool. LEED is an established program, and LEED certification may become a benchmark for green hotels. LEED Certification is not very expensive, and the marketing and publicity benefits will help attract customers who are seeking quality sustainable hotels. For more information, see the U.S. Green Building Council website at www.usgbc.org.



Green Seal

Green Seal is a national, non-profit environmental standard-setting and certification organization in Washington, D.C. Since 1995, Green Seal has partnered with the lodging industry, the nation's second largest employer, to promote environmentally responsible products and practices within lodging properties. Green Seal's campaign to inform the nearly 54,000 U.S. hotels and motels focuses on how environmental efforts both improve the bottom line and benefit the environment. As of late, Green Seal organizers have partnered with Pennsylvania DEP and the Department of General Services (DGS) to

develop an initial certification effort in Pennsylvania for all hotels, motels, inns and bed-and-breakfasts facilities.

The Green Seal is awarded to products that have less impact on the environment and work as well as other similar products. To earn the Green Seal, a product must meet the Green Seal environmental standard for the category as demonstrated by rigorous evaluation and testing. Green Seal standards are set so that they identify the most environmentally preferable products currently available. Once certified, the Green Seal may be used on packaging, in promotion material, in catalogs, and in advertising. In addition, products are subject to annual monitoring to ensure that the product offered for sale continues to meet the Green Seal standard. The Seal provides a marketing advantage, for it identifies a product as environmentally preferable, provides third-party corroboration of environmental claims, and distinguishes a product from competitors that cannot support their environmental assertions.

Recently, Green Seal initiated a certification program to help travelers, meeting planners, and government and corporate travel buyers identify environmentally responsible lodging properties. Under the certification program, Green Seal is working with the Commonwealth of Pennsylvania to certify hotels in seven major travel areas of the state for use by government employees and the traveling public. As of March 27, 2002, fifty Pennsylvania hotels have shown interest in protecting the environment through this voluntary certification program. While no other state has begun this process, Green Seal has received contacts from other states, including California, that are interested in what Pennsylvania is doing.

The environmental standard for lodging properties contains 36 criteria in six major facility categories, including waste minimization, reuse and recycling; energy efficiency, conservation and management; management of fresh water resources; wastewater management; hazardous substances; and environmentally and socially sensitive purchasing policies. Hotels wishing to participate in the program must complete a questionnaire on their environmental initiatives. This checklist will be used to identify

which hotels will move into the certification process. The selected hotels will then be visited by Green Seal staff to ensure conformance with Green Seal's green hotel standard. After all the visits are complete, Green Seal will award the certificates to eligible hotels.

“Green” Hotels Association

The “Green” Hotels Association is unlike ECOTEL and LEED since it does not offer a certification process. For a hotel to become a member, it simply has to indicate that it is interested in issues that deal with the environment and ways to tackle such issues.

The Tech Clinic found out about this particular association during an interview with the owner and managers of Settler's Inn, located in Hawley, PA. They are members of this association and recommended it to us.

The association's primary function is to provide its members with detailed water and energy saving ideas that apply to the hospitality industry. It researches various methods that the hotels can use to save money and conserve the environment. These methods are recommended in the Green Hotel Association catalog. This would be a very valuable resource for any hotel that is interested in environmental issues.

There are four different membership options that the association offers: Partner, Ally, Educator, and Environmentalist. A *Partner* member is a hotel that is eager to conserve water, energy and natural resources. The cost is \$1 per guestroom; minimum \$50 and maximum of \$500. An *Ally* member is a vendor who offers approved environmental products and services. The cost for an *Ally* member is based on their sales, sales under \$1 million - \$150/year and sales over \$1 million - \$250 per year. An *Educator* member consists of students, faculty and public employees interested in green programs in the hospitality industry. The cost for an *Educator* member is \$50/year. The final membership option is an *Environmentalist* member, which consists of organizations and associations devoted to Earth-saving issues and wish to support green hotels. The cost of membership depends on the number of employees: up to 50 employees - \$150/year, 51+ employees - \$300/year. Each type of member is eligible for the same benefits.

The “Green” Hotels Association currently has over 200 members in the United States and Canada, with growing numbers of hotels joining. For more information please contact the ‘Green’ Hotel Association, P.O. Box 420212, Houston, TX 77242 or call 713-789-8889.

These three certification options are recognized as the most well known in the hospitality industry today and have the backing of many members. Any hotel that wishes to be successful and promote itself over the country as well as the world could benefit as a member of any of the three discussed options.

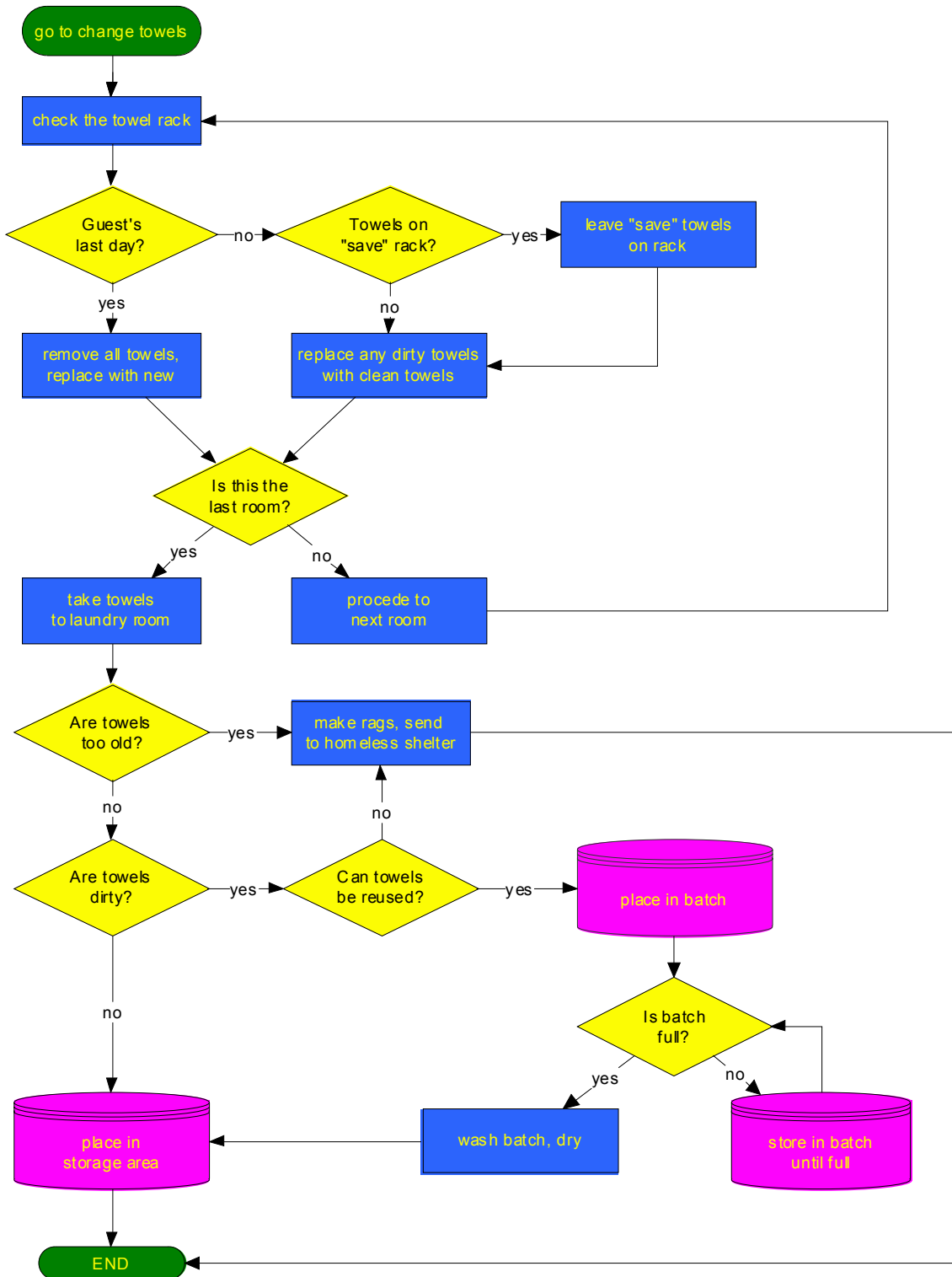
COMPUTER MODELING

Computer modeling is a valuable tool for decision making in a hotel. Various hotel management processes can be modeled using flow charts, and a process simulation program can then be used to optimize the efficiency of the process.

A flow chart computer program need not be too complex, but it is an excellent way to visualize the interrelated steps in hotel management processes. On the next page, we have included a sample flow chart created using “Amazing Flowcharts and Diagrams,” developed by Pacestar Software, which makes use of our recommendation to allow guests to reuse their towels. Once a draft flow chart is completed, it may be adjusted by management as they consider new ideas for better efficiency. Some of the processes which can be modeled using a flow chart program include laundry collection and washing, and food preparation and disposal.

A process simulation program can take a procedure from a flow chart and bring it to life. These programs vary in complexity, so if the management wants to model many different processes, a more complex modeling software program is recommended. Once the process is transferred from a flow chart into the simulation software, data can be generated to see how well the process works. The process can be tested with parameters that the user sets. For example, a hotel may wish to see whether using two large washing machines or three smaller washing machines is more efficient. By changing this parameter in a process simulator, the management can use the data to decide what size and quantity of washers to purchase. This allows a hotel to “try it before you buy it,” sparing them of the money and hassle of committing to a system without seeing if it works.

Simulation programs are excellent for preventing backlogs due to insufficient machinery or employees. Process simulation software can also model environmental concerns in a hotel. For example, the amount of water used in daily tasks such as laundry and dishwashing can be modeled, and the parameters can be changed to see how water can be saved in these processes. Similar methods can be used to determine ways to save



electricity. Another use of this software is modeling the food processes in the kitchen to determine how much waste the hotel should expect. Parameters such as the amount of food per plate and the amount of materials that will be sent to pig farms can be changed to see how best to reduce waste. Most process simulation programs cost thousands of dollars, but they can be key in reducing costs incurred by trial-and-error purchases or hirings. We suggest that any hotel that wishes to be environmentally friendly utilize such software to determine what methods are best suited for their mission.

CONCLUSION

We, the members of the Lafayette Technology Clinic, have written this report with a focus toward helping those developing green luxury hotels. It is our hope that this report can be used to help a hotel's operation and also help those designing and operating green luxury hotels. Through our thorough research we made a conscious effort to include all aspects of a green luxury hotel that would be of great interest to anyone from those that may want to build or run a hotel of this kind. From getting a general feel of what people want through conducting focus groups to looking into how to manage an environmentally friendly luxury hotel to certification options, marketing and computer models, we believe that the benefits of "going green" are worth the investment. But through our research, we also learned that this "investment" is actually no investment at all except the commitment to go green. As mentioned in the "Why Go Green" section, the benefits to a green hotel of any kind are substantial.

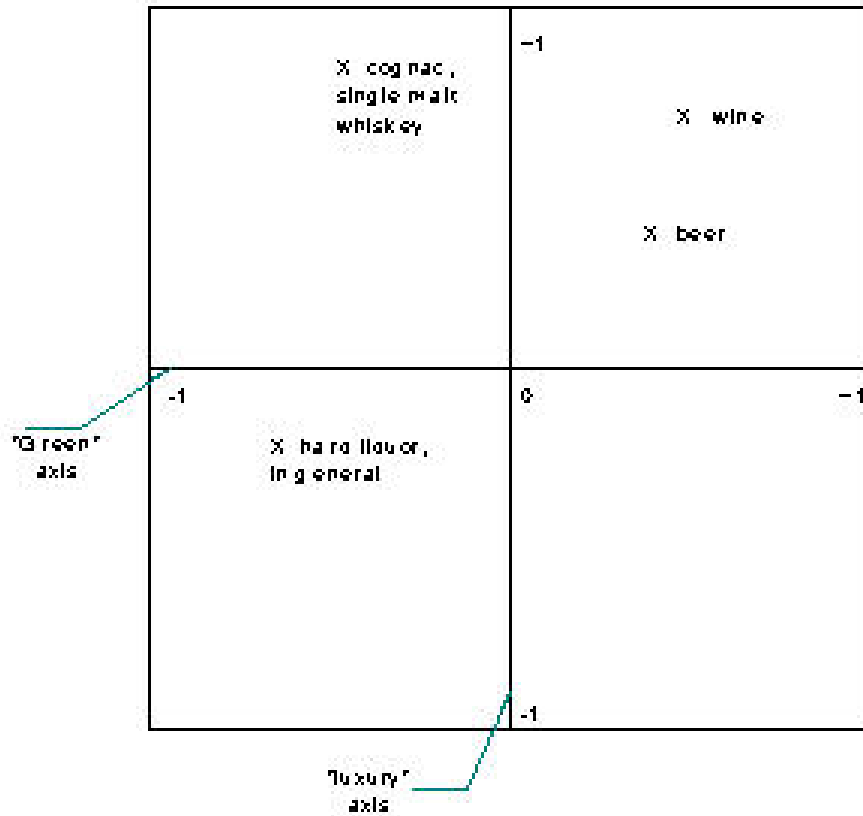
In doing this project, we have found an ironic relationship between "greenness" and "luxury." People have often mentioned to us that luxury means the right to be wasteful and that green experiences are necessarily characterized by deprivation. Our discussions suggest otherwise. We have found that some of the nicest, most luxurious hotels, such as the Sheraton Rittenhouse Square Hotel in Philadelphia and the Benjamin in New York City successfully follow many "green" standards. These hotels, however, still manage to maintain a luxury feel to the hotel. Luxury seems to be an asset when it comes to people accepting green policies. An environmental policy which might be seen as disguised cheapness in a lesser hotel is likely to be perceived as high-minded in an elegant hotel: "We are pampering you and the environment." However, people and the commitment from both the hotel staff and the hotel guests are probably the most important component to make a green luxury hotel successful. Green design is important, but the best design can quickly become ineffective if guests open the windows while the AC is running, or if the staff takes away towels that the guest had intended to use a second day to help conserve water.

In conclusion, we believe that a successful green luxury hotel is attainable and that everyone benefits from participating in the hotel's environmental policies. We hope that this report is of help to anyone involved in the green luxury hotel business. The success of a green luxury hotel is easily attainable and this Technology Clinic Team hopes to see more hotels that are willing to make some minor adjustments in order to help the environment.

REFERENCES

- ECOTEL Benefits*. HVS International. 30 Oct. 2001 <<http://www.hvsecoservices.com/ECOTELAbout.htm>>.
- Energy Efficiency in Hotels and Motels*. University of Florida, Florida Energy Extension Service. 6 Mar. 2002 <<http://edis.ifas.ufl.edu/scripts/>>.
- Enz, Cathy A., and Judy A. Siguaw. "Best Practices in Human Resources." *American Lodging Excellence: The Key to Best Practices in the U.S. Lodging Industry*. Washington, DC: American Express and the American Hotel Foundation, 1999.
- Enz, Cathy A., and Judy A. Siguaw. "Best Practices in Service Quality." *American Lodging Excellence: The Key to Best Practices in the U.S. Lodging Industry*. Washington, DC: American Express and the American Hotel Foundation, 1999.
- Graywater and Rainwater Use*. University of Arizona, Water Resources Research Center. 20 Feb. 2002 <<http://aq.arizona.edu/AZWATER/arroyo/071rain.html/>>.
- "Green" Hotels Association. Home Page. 3 Apr. 2002 <<http://www.greenhotels.com/>>.
- Green Seal. Home Page. 16 Apr. 2002 <<http://www.greenseal.org/>>.
- Hinkin, Timothy R., and Bruce J. Tracey. "The Cost of Turnover: Putting a Price on the Learning Curve." *Cornell Hotel and Restaurant Administration Quarterly*. 2 Nov. 2001 <<http://www.hotelschool.cornell.edu/publications/>>.
- Hotel Waste Reduction Recommendation Report*. Solana Recyclers, Inc. Region IX of the US EPA. 23 Apr. 2002 <http://www.beresourceful.org/downloads/casestudy_hotel.pdf>.
- LEED Green Building Rating System*. U.S. Green Building Council. 30 Oct. 2001 <<http://www.usgbc.org/programs/leed.htm>>.
- Wilke, Anne W. "Green Hospitality." *E* 7 (1996): 46.

Luxury-Green Worksheet



Ask members of focus groups to place products in 'cultural space' in terms of their green and luxury feels. For example, our informants placed wine as high in luxury and greenness than beer.