

How to Implement a Sustainable Spa and Wellness Center



Prepared For: Asia Pacific Spa & Wellness Coalition

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The wishes of the authors ~ ' our overall hope is that this document can be given to a broad audience who will benefit from the information leading to a more cohesive and strong spa industry in Southeast Asia.'

Please respect the authors intent and apply the research in the spirit it is intended.
Thank you all.

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Executive Summary

Why Focus on Sustainability?

Sustainability has become a focus for many industries. The concept of sustainability focuses on meeting the needs of the present society without compromising the ability of future generations to meet their needs. Particularly, the spa industry must shift its focuses to sustainable practices due to the amount of resources used and the environmental concerns that result from spa operations. Three major reasons exist as to why to consider sustainability. First, consumers are making decisions based on an industry's green commitment, which does apply to the spa industry. If guests are choosing spas based on a spa's sustainable practices, going green can serve as a strong marketing advantage for spas. Next, as members of an industry, which endangers the future of our planet, spa operators do have a social responsibility when making decisions about their spa. Finally, sustainable practices can help save money as fewer resources such as energy and water are used.

Overview of Report

This report provides spa operators with an approach to implement sustainability into their operations. In addition to helping operators implement a sustainable operation, this report will emphasize the importance of offering a wellness component in the spa. As an industry that is dedicated to rejuvenating and fortifying the mind, body and soul, spas should also be committed to the long-term sustainability of guests' lives. In order to best help spa operators move toward both ensuring the sustainability of their operations and their guests' well being, this report will describe the two major components of a center: spa and wellness.

Spa and Wellness Center

As the trend to incorporate a wellness component into a spa facility continues to emerge, spa operators are creating spa and wellness centers. Within these centers, guests cannot only receive treatments and the relaxing benefits of a spa but can receive health and nutrition guidance, use a fitness room, and even enjoy alternative healing methods. Across the world, we have seen an increase in providing consumers with this concept of combining spa and wellness components.

Design

Regardless of what type of spa, there are usually certain areas that make up the facility. These include the reception area, locker rooms, lounge, and treatment rooms. A design that creates a logical flow for staff and guest along with the ability to use sustainable practices should be considered when building a center or remodeling a current center. In Asia, there is an option to have a building certified as a sustainable through Green Globe certification. It is suggested that any property look into this certification, as it provides a variety of benefits.

Equipment and Technology

Beyond the building, spa operators must make decisions about equipment and technology that will be used. Based on the current environmental situation, it is best to choose equipment and technology that will allow operators to manage and conserve water usage, energy usage, and waste production. Operators can conserve water usage by retrofitting water fixtures, maximizing efficiency in laundry facilities, reducing water use in landscaping, implementing saltwater pools,

and using seawater for air conditioning. Energy consumption can be conserved by utilizing solar or wind power, properly maintaining the HVAC system, paying attention to general operations, choosing efficient lighting, switching to electric forms of transportation, and implementing an employee bike share program. Lastly, waste production can be reduced through composting and recycling.

About the Spa Component

When creating a sustainable spa environment, the use of resources in all areas should be considered. Certain sustainable decisions must be made regarding the treatment offerings, products used in spa, and locker room services and amenities.

Treatments

There are many treatment options to choose from when creating a spa treatment menu (see Appendix C.) Based on the service level and theme of the spa, treatments can be chosen that will best serve the guests. However, it is important to choose treatments that will help highlight the culture of the region where the spa is located. Additionally, the water consumed, energy used, and waste produced by treatments must be measured and evaluated. Based on these findings, certain practices can be used to reduce treatments' impact on the environment while doing what is best for the guest.

Products

Throughout a spa, many products are used. More specifically, there are lotions and oils are featured in the treatments, products that are needed to clean and sanitize the spa, and retail products can be sold in the spa. To move toward a sustainable spa, spa operators must pay attention to what is going into these products and what suppliers are doing in terms of their company procedures and commitment to green practices. There are number of organic product lines offered currently, such as Jurlique, Jamu, Eminence, and Sodashi. Consider offering products in your retail outlet that are crafted by local artisans and reflect the culture of the surrounding area.

Locker Rooms

A spa's locker rooms receive a great deal of use and come in contact with each of the guests. To meet the needs of guests, locker rooms must offer a great deal of amenities such as steam rooms, saunas, and whirlpools. Unfortunately for the environment, these locker room necessities cannot only utilize a great deal of resources but can create unnecessary wastes. While all of the amenities and major fixtures are necessary, it is important to think about the environmental impact the locker rooms may have on water and energy usage.

Innovative Approach

This report suggests some innovative approaches to a sustainable spa that would be attractive to potential guests. These approaches include a "human greenhouse" which guests can use like a sauna, a botanical garden, and a rooftop garden.

Personnel

A variety of people are needed to successfully run the spa component of a facility. From spa managers to supervisors, receptionists to therapists, a cohesive team is formed that helps to carry out the mission of the spa. When deciding to implement a more sustainable operation, it is vital to

educate the staff on these new efforts. Of course, memorandums and emails can be used to communicate these changes to the staff if the spa is already in place, but if a new spa is being built, a component of the training process should be devoted to the operations commitment to going green.

About the Wellness Center

While the spa component is designed to take care of all of the guests' surface needs, the Wellness Center is able to cater to the guests' inner needs. In the spirit of sustainability, spas directors should promote consumers' health and longevity. For this reason, more spas should include a wellness focus. For the purposes of providing an example of a well-developed Wellness Center, this report describes five main components of wellness: physical fitness, Traditional Chinese Medicine (TCM), Ayurveda, Native American Medicine, and counseling.

It is important to note that all three kinds of alternative medicine suggested revolve around the same values of harmony and balance that exist in the earth. This continuation of cohesive values throughout a sustainable spa and wellness center will help to propel the environmental goals that the center seeks to meet.

Physical Fitness

The fitness center will be able to serve guests' exercise needs and will have three features: a fitness facility, personal training, and classes. The facility will have a variety of cardio machines and weights for guests to conduct their own workout. Personal trainers will be available to meet with guests to discuss their fitness regimens. Finally, guests will have the option to take a fitness class, with classes ranging from yoga to kickboxing. In order to find ways to be more sustainable in the fitness area, it is necessary to examine energy usage, water usage, and use of extra materials such as paper and plastic.

Traditional Chinese Medicine

Traditional Chinese Medicine centers on the "zang-fu" organs that are at the core body. TCM treatments seek to aid in targeting these organs directly or through their related tissue (like through acupuncture.) A major theory of TCM is "Yin-Yang", or the theory that objects are made up of two opposite forces. TCM treatments suggested in this report include acupuncture, herbal medicine, and qi gong.

Ayurveda

Ayurvedic medicine is a form of Eastern medicine that is based on balancing aspects of people's individual body type. The Ayurvedic component of the Wellness Center will be able to offer Ayurvedic counseling and treatments to guests. Since Ayurveda is a common aspect of many spas, this report delves into ways to make the Ayurvedic Center more sustainable in terms of product usage and Ayurvedic guidance.

Native American Medicine

Native American medicine is more spiritually based than TCM or Ayurveda, but has similar values of balance and harmony with the earth. Native Americans believe that everything on earth is embodied by a spirit and only by recognizing and respecting these spirits can humans seek to find

true health. Because these values echo the values behind sustainable practices, including Native American medicine in the wellness center is a wise decision. Treatments using herbals or the building of an authentic sweat lodge are ways to evoke the Native American tradition.

Counseling Center

Finally, the counseling center will provide guests with the option to explore their internal selves while at the Spa & Wellness Center. Counseling will have three focuses: nutrition, emotional, and spiritual guidance, mirroring the mind-body-spirit model. In each of these counseling areas, counselors will focus on incorporating a more sustainable lifestyle.

Asia Pacific Spa and Wellness Coalition Overview

The Asia-Pacific Spa & Wellness Coalition (APSWC) was formed in March of 2006. The council was initiated by the heads of spa associations with a view to bring the region together, identify common problems and opportunities, and find ways to improve the business for all involved. APSWC is a regional body, which links the national spa associations of the Asia-Pacific nations. The council now has 17 countries represented, and over 80 people from four continents participating in its Task Forces. This study is designed to help assist APSWC to achieve their goal of meeting the challenges presented by the evolution and growth of the Asian Pacific spa industry.

Methodology

Our method of research for this project relied upon several forms of information. To begin our research, we focused on the information provided by our clients. They gave us basic demographic information about the geographical areas of focus and their general knowledge of the current spa industry in Asia.

Our second method of research consisted of Internet research and class discussions in our Hotel Administration 602 course (Spa Hotel and Resort Development and Management). Our last method of research was through the operations experience we have had in spas. Together, our experience includes Westin Maui Heavenly Spa, Four Seasons Bali Jimbaran Bay and Sayan, Ritz-Carlton, Half Moon Bay Spa, and the Golden Door (Escondido).

Introduction

The spa industry in Asia is deeply connected with utilizing the earth and its natural resources to help heal and bring balance to consumers. Along with this connection, comes a level of responsibility to take care of the Earth. Particularly, the spa industry must shift its focuses to sustainable practices due to the amount of resources used and environmental concerns that result from spa operations. Currently, there is a great deal of information available to operators as to how exactly one can implement a sustainable operation, and this leads to difficulty for an environmentally conscious operator trying to find a starting point and to develop a plan. In this study, we will present a practical approach to sustainability for any operator to consider when incorporating sustainable practices into their operation.

In this study, we will provide an explanation of what sustainability is and why sustainability is important for the spa industry. This study is designed as an operational guide for spa directors, developers, etc. to use when implementing a more sustainable focus into their operation. Then, through an explanation of a spa and wellness center, we will suggest design, offerings, and sustainable practices for both spa and wellness components. In addition to helping spa operators implement a sustainable operation, this report will emphasize the importance of offering a wellness component in a spa. As an industry that is dedicated to reviving and refreshing the mind, body and soul, a spa should be committed to the long-term sustainability of the guests' lives.

Sustainability

The concept of sustainability means to ensure we meet the needs of the present society without compromising the ability of future generations to meet their needs. In more detailed terms,

sustainability is “an approach to environmental consciousness in which environmental issues are addressed within the context of economics, ecology, and ethics¹.” With a global population over billion, the trend towards sustainability is born out of necessity and should not come as a surprise to any industry. With increasing pressure directed toward the spa industry to exhibit environmental responsibility and accountability, it is essential to conserve both the natural and cultural resources the industry depends on to advance sustainable development.

Why Consider Sustainability?

There are three major reasons to consider sustainability in a spa and wellness center. Most relevant to spa operators and owners is the fact that sustainable spas have a marketing advantage. We have seen an increase in green consumer behavior. Consumers are making decisions based on an industry’s green commitment, which does apply to the spa industry. Spa customers tend to have a strong interest in health and well being, and the state of the earth plays a large role in this mindset. For this reason, spa operators must react to consumers’ concerns and demands and implement sustainable practices into their operations. Consumers could choose a spa based on their choice to be sustainable. The second major reason to consider sustainability is the fact that as members of an industry that has the power to endanger the future of our planet, spa operators do have a social responsibility when making decisions about their spa. Using sustainable practices is an easy way to help ensure the long-term growth and survival of the spa industry, which should serve as a major motive to consider sustainability. The final reason to consider sustainability is the opportunity to save money through sustainable practices. When resources are conserved, expenses decrease therefore, lowering costs.

In addition, sustainability can play a large part in the theory of wellness. Wellness, as a mindset, centers on leading a balanced lifestyle, treating the body, mind, and spirit with love and kindness, and making health a priority. Sustainability can be thought of as wellness for the earth. We treat the earth and its needs with kindness, and make balanced health a priority just as we do to the wellness of our bodies. Sustainability is the process of creating a healthier earth that can thrive as long as we need it to; likewise, wellness is a practice that helps our bodies increase longevity. By thinking of sustainability as wellness for the earth, we can draw parallels between the importance of being environmentally conscience and being health-conscience. Finally, we can see the true value in creating a wellness center that places sustainability as a priority.

Plan of Action

In order to efficiently incorporate sustainable practices into the operation, a spa operator and their staff should set and follow a plan of action:

1. Appoint a “Green Team” made up of staff members to oversee the program. They can establish objectives, identify target areas, create and confirm an action plan, and discuss individual staff responsibilities.
2. Develop a mission. The following principles are suggestions to consider when setting a mission²:

¹ Stipanuk, D.M. (2002). *Hospitality Facilities Management and Design*, 2nd ed. Michigan: Educational Institute of the American Hotel and Lodging Association.

² Brewitt, Anne, Jenna Bromberg, and Emily Josephs. *Going Green: A Practical Approach to Sustainability in the Spa Industry*. HADM 602: Spa Management, Cornell University.

- Using fewer resources
- Generating less waste
- Considering life-cycle costs of purchases
- Considering environmental criteria with other business criteria (such as cost, functionality, and availability)

3. After completing these preliminary actions, it is time to begin evaluating the spa in terms of design and its current practices. Then, more specific details such as treatments and products can be considered and adjusted.

4. Once the spa begins running with a sustainable mindset and practices are met to meet the mission set forth by the Green Team, how the spa operator plans to market the spa must be decided. With more consumers choosing spas based on sustainability, it is important to highlight a spa's commitment to going green in the marketing resources such as a treatment menu, online website, and advertisements.

In some cases, a spa facility may just consist of a spa component; however, with an increasing consumer awareness of well-being, we are seeing many spas offering a wellness component as well. For this reason, this report outlines plans and recommendations for both spa and wellness components.

Spa and Wellness Center

As the trend to incorporate a wellness component into a spa facility continues to emerge, spa operators are creating spa and wellness centers. Within these centers, guests can not only receive treatments and the relaxing benefits of a spa but also can receive health and nutrition guidance, use a fitness room, and even enjoy alternative healing methods. Across the world, we have seen an increase in providing consumers with this concept of combining spa and wellness components. For example, The Golden Door Spa Company and Canyon Ranch Destination spas lead the market in the United States while facilities like Kamalaya Koh Samui,-Wellness Sanctuary and Holistic Spa took home the Asia Spa Award for Best Destination Spa of the Year in 2008. Some locations such as Michael Strusser's Osmosis Day Spa Sanctuary in Sonoma County, California are dedicated to delivering a "green spa experience", because they feel this is the "first step in shifting the image of a spa visit away from one of pampering indulgence to a more grounded and holistic experience." Their aim is to create a compelling "Green Spa Experience," that makes the obvious connection between personal and planetary wellness³.

In order to offer both spa and wellness components to guests and focus on sustainability, the design of the center must be modified to accommodate the goals. In Asia, there are certain design choices that can be made to certify a facility as a "green". Along with appropriate design, decisions will have to be made regarding what equipment and technology the spa will utilize to help reduce the facility's impact on the environment.

³ "Osmosis Goes Green." Osmosis.com-Greening. Osmosis Day Spa Sanctuary. 21 Apr. 2009 <http://www.osmosis.com/page_1234.cfm>.

Design

Regardless of what type of spa, there are usually certain areas that make up the facility. These include the reception area, locker rooms, lounge, and treatment rooms. If building a new spa, a design that creates a logical flow for staff and guest along with the ability to use sustainable practices should be considered. Along with design, decisions will need to be made regarding building certification and what equipment and technology the spa will utilize. Even if the facility is already in place, the design of the spa may need to be modified or adjusted in order to accomplish the mission set forth to be more sustainable.

Green Globe Certification

The Green Globe program was developed to provide a way forward for tourism organizations who were interested in measuring their environmental impact and then developing and implementing strategies to reduce those impacts. In order to be considered a green building, Green Globe certification must be gained through accomplishing a variety of set criteria. The Green Globe Company Standard sets out the guidelines, procedures, and Self-Assessment Checklist that organizations must follow to achieve sustainability. Additionally, this standard provides organizations with a framework to conduct a comprehensive assessment of their environmental sustainability performance. This can be particularly useful to a company already operating in an existing building. Through this assessment, they can monitor improvements and work towards achieving certification⁴.

The principle objective of Green Globe's Design and Construct Standard is to facilitate environmentally sustainable design and construction of building infrastructure. The standard sets out the requirements for facilitating and assessing the environmental and social performance of the design and construction of buildings. It provides an assessment against set criteria providing developers with a benchmark for sustainable performance in both design and construction of building infrastructure. The cost to undertake the Green Globe Design and Construct Standard depends on the size, scope and duration of the construction⁵.

By receiving Green Globe Certification, a company can receive multiple benefits as noted below⁶:

- Green Globe Certification provides an immediate recognition in the marketplace
- Tour Operators / Airlines highlight Green Globe certified properties
- Green Globe is a clear differentiator in the market
- Green Globe certified properties enjoy free public relations opportunities
- Green Globe logo enhances brand image and reputation
- Opens up new markets
- Enhances environmental stewardship
- A Green Globe Certification will reduce operational costs

⁴ "Green Globe History." Green Globe International: The Premier Global Brand for Sustainable Travel and Tourism. Green Globe. 21 Apr. 2009 <<http://www.greenglobeint.com/about/history/>>.

⁵ "Green Globe." Green Globe. Earthcheck Pty Ltd. 14 Oct. 2008 <<http://http://www.ec3global.com/products-programs/green-globe/>>.

⁶ "Benefits." Green Globe Certification. 2009. Green Globe Certification. 10 Apr. 2009.

- Green Globe offers many joint marketing opportunities
- Creates healthier work environment

As the trend towards sustainability strengthens in our industry, more spas should and will be considering Green Globe Certification. There are multiple resources, especially on the Internet that can guide businesses in meeting the criteria either with a new or an existing building.

Equipment and Technology

Throughout the facility, choices will have to be made regarding what type of equipment and technology should be used to align with sustainable practices. The major choices that must be made center around meeting the following two goals:

- Managing water use
- Managing energy consumption
- Managing waste production

Focusing on each of these goals will call for decisions to be made by the spa operator and their Green Team.

Managing Water Use

Global supplies of fresh water are limited and represent less than one percent of the total water on earth⁷. For this reason, it is necessary for the spa industry to conserve water wherever possible and help improve the quality of the available water. In order to do this, consider the following recommendations:

Retrofit Water Fixtures

Through retrofitting or replacing showerheads and sink faucet aerators with low flow alternatives, water can be saved. Retrofitting refers to fixing leaks and replacing old plumbing fixtures with water saving ones. Additionally, there are water conservation devices that can be installed such as toilet dams. Toilet Dams make a toilet tank smaller by using plastic barriers that prevent water from running out when the toilet is flushed. A standard dam can hold back one gallon of water. Plumbing fixture low flow alternatives such as toilet dams can be purchased through plumbing fixture suppliers and usually range from \$11 to \$25 USD⁸.

Maximize Efficiency in Laundry Facilities

As an industry that relies on clean linen, focusing in on laundry facilities can result in the conservation of water. If a spa is operating within a hotel or resort, control of the laundry facilities does not lie in the hands of the spa operator. For this reason, it is crucial to have conversations with the management team, especially the Director of Housekeeping, about methods to conserve water within the laundry system.

⁷ Stipanuk, D. (2002) Hospitality Facilities Management and Design, 2nd ed. Michigan: Educational Institute of the American Hotel and Lodging Association.

⁸ "RETROFIT." www.swfwmd.state.fl.us/publications/files/retrofit.pdf. Mar. 2008. Southwest Florida Water Management District. 10 Apr. 2009.

Simple ways to maximize efficiency in laundry facilities include installing laundry faucet aerators (which significantly reduce water usage but maintain pressure), operating washers only with full loads, inspecting and repairing valves, sensors and other controls regularly, and washing linens in the coolest water that will clean the fabric. For large-volume laundry facilities, high efficiency, continuous-batch (or tunnel) washers are most effective. Tunnel washers internally reuse rinse water and wash water with counter current flow. Additionally, these washers can be programmed to use a specific amount of water, depending on amount of laundry being washed⁹. These systems can reduce water use by as much as 60 percent when compared with washer-extractor types. They also use less chemicals and energy and are less labor intensive¹⁰.

For any laundry facility, an ozone laundry system that uses the ozone (O₃) molecule rather than detergent as a cleaning agent should be used. Systems, using the ozone molecule, work on a closed loop process and use cold water only. Water needed for the rinse cycle is reduced since no detergent is present to be rinsed from the laundry. Additionally, fewer chemicals are needed to sanitize loads, which reduce the number of necessary rinse cycles¹¹.

If the facility would like to continue to use detergent there are some environmentally friendly options to consider. Detergents specially formulated to operate at a near-neutral pH and to be phosphate- and APE (Alkyl Phenol Ethoxylates) free are an environmentally smart choice for many facilities. Ecolab produces detergents such as the Formula 1 system that is designed to save time, space and money. The detergent is concentrated in a capsule that does the job of three liquid products. These capsules reduce water and energy usage as well as packaging waste¹².

Reduce Water Use in Ground Keeping and Landscape

Simple changes in ground keeping and landscaping can help conserve water. First, restrict lawn watering to evening and night to decrease water loss from evaporation. Next, choose to water manually and only when needed and avoid using sprinklers. Lastly, consider using gray water (recycled water) when watering plants and lawns. By collaborating with the grounds keeper, a gray water system can be investigated and implemented. (In Northern America, water companies charge for water supply and water return. Because water used for irrigation is not returned, you save money by reusing water for irrigation and landscaping purposes.)

⁹ "Tips & Technologies to Save Water & Energy at." Arizona Department of Water Resources-Conserving Water Today for Arizona's Tomorrow. Arizona Department of Water Resources. 27 Apr. 2009
<http://www.adwr.state.az.us/dwr/Conservation/documents/3-1-4commercial_laundry_October_08.pdf>.

¹⁰ "Checklist: Water efficiency practices for laundry facilities." Water and Wastewater News. 01 May 2005. 29 Apr. 2009
<<http://wwn-online.com/articles/51032/>>.

¹¹ Offshack, Ed. "Going Green in Laundry." Lodging Hospitality 15 Apr. 2007: 28. Hospitality and Tourism Index. Cornell University, Ithaca. 29 Apr. 2009.
http://wf2dnvr5.webfeat.org:80/jDA0M1763?url=http://content.ebscohost.com/pdf19_22/pdf/2007/LHS/15Apr07/25056793.pdf?T=P&P=AN&K=25056793&S=R&D=hjh&EbscoContent=dGJyMNHX8kSeprA4y9f3OLCmrlGep7NSrqa4S66WxWXS&ContentCustomer=dGJyMPGvrkivqbROuePfgex44Hy7fEA

¹² Urell, Cathy. "Laundry facilities shifting to green programs." Hotel Business Oct. 2007: 18+. Hospitality & Tourism Index. Cornell University, Ithaca. 29 Apr. 2009.
http://wf2dnvr4.webfeat.org:80/KR90M1793?url=http://content.ebscohost.com/pdf19_22/pdf/2007/R5G/22Oct07/27219035.pdf?T=P&P=AN&K=27219035&S=R&D=hjh&EbscoContent=dGJyMNHX8kSeprA4y9f3OLCmrlGep7NSr6i4SraWxWXS&ContentCustomer=dGJyMPGvrkivqbROuePfgex44Hy7fEA

In addition, to these simple practices, it is best to plant native species that don't require additional watering. In dry climates, try landscaping with rock gardens, cacti, and native trees and plants that do not require any watering. This practice is referred to as xeriscaping and simply means landscaping and gardening in ways that reduce or eliminate the need to for supplemental irrigation. To implement xeriscaping, it is best to research what plants and their natural requirements are most appropriate for the local climate¹³.

Move towards Implementing Saltwater Pools

Using natural salt water from the surrounding oceans in a given area can provide economic benefits to the business and restorative benefits to the guests. The use of saltwater in pools removes the need for additional chlorine in the water, because salt naturally makes chlorine. Economically, this saves about \$60.00 USD for every two gallons of saltwater that is put into the pool. Additionally, the pools virtually clean themselves and require much less attention than pools that use chlorine, which results in lower maintenance costs.

In terms of restorative benefits, salt water is much softer on the skin and eliminates the red eyes and itchy skin caused by chlorinated waters typically used at spas and fitness facilities. Users of the saltwater pools have claimed that they feel more rejuvenated and refreshed after leaving a salt water pool rather than a chlorinated one. The Chelsea Spa, in Atlantic City, New Jersey, is one of the first spas in its class to incorporate a saltwater pool in their services. As mentioned on their website, the pool uses seasonally heated saltwater to relax and restore guests at the spa¹⁴.

Using Seawater for Air-Conditioning

Lockheed Martin and Makai Ocean Engineering have teamed together to develop technology for thermal energy conversion, which uses the difference in the temperature between the ocean's warm surface and its cold depths to generate electricity. The technology is similar to the lake source cooling methods in use at Cornell University in Ithaca, New York. At Cornell, the cold freshwater from a nearby lake is put through a heat exchanger to help cool buildings on campus. A similar system is in place in Hawaii where cold seawater is used to air-condition a few buildings at the National Energy Laboratory of Hawaii Authority¹⁵.

Using this technology, a spa can efficiently air condition its buildings without adding additional impacts to the surrounding environment. Specifically, spas located in the coastal areas of South East Asia can benefit from using the seawater surrounding their locations. Additionally, as this technology develops, the opportunity to air-condition building units will exist which is both cost efficient and sustainable.

¹³ "H₂O Conserve-Water Saving Tips." H₂O Conserve. 30 Apr. 2009 <http://www.h2oconserve.org/?page_id=3>.

¹⁴ "Sea Spa's Saltwater Pool Invites Soaking and Serenity." The Chelsea-Pool. 16 May 2009 <http://thechelsea-ac.com/saltwater_pool.php>.

¹⁵ Galbraith, Kate. "Using Seawater for Air-conditioning." Using Seawater for Air-conditioning-Green Inc. Blog-NYTimes.com. 30 Apr. 2009. 16 May 2009 <<http://greeninc.blogs.nytimes.com/2009/04/30/using-seawater-for-air-conditioning/>>.

Manage Energy Consumption

Although it is difficult to control the cost of energy, spa operators can control energy consumption in the spa by considering renewable energy. To lower energy consumption, try implementing some of these recommendations:

Types of Renewable Energy

Solar Energy

Solar energy is the energy received by the earth from the sun. This energy is in the form of solar radiation, which makes the production of solar electricity possible such as heat and electricity. Solar electricity relies upon man-made devices such as solar panels or solar cells in order to provide a source of clean, and low cost renewable energy. An example of a hotel relying on solar energy as a renewable energy source is Post Ranch Inn, which serves affluent nature lovers seeking luxury. It turned on the largest hotel solar system in California with 990 solar panels providing the hotel with virtually all of its electricity¹⁶. Solar energy can be converted to electricity in two ways:

Photovoltaic (PV devices) or “solar cells” change sunlight directly into electricity. PV systems are often used in remote locations that are not connected to the electric grid. Photovoltaic cells can be aligned as an array (**Appendix A**). There are many advantages of using a solar cell array, with various panels fitted along a mounting system. One of the main advantages is that we are able to combine various numbers of cells to provide a greater output of electricity, and this method makes solar electricity a viable option to power small businesses such as spa and wellness centers¹⁷.

The use of solar panels to heat water is becoming increasingly popular around the world due to the energy and money saving associated with this method. Solar thermal energy is often used for heating swimming pools, heating water used in homes, and space heating of buildings. Solar space heating systems can be classified as passive or active.

Passive space heating occurs when the air is circulated past a solar heat surfaces and through the building by convection (i.e. less dense warm air tends to rise while more dense cooler air moves downward). No mechanical equipment is needed for passive solar heating. *Active* heating systems require a collector to absorb and collect solar radiation. Fans or pumps are used to circulate the heated air or heat absorbing fluid. Active systems often include some type of energy storage system¹⁵.

Solar Power Plants use the sun's rays to heat a fluid, from which heat transfer systems may be used to produce steam. The steam, in turn, is converted into mechanical energy in a turbine and into electricity from a conventional generator coupled to the turbine. Solar thermal power generation works essentially the same as generation from fossil fuels except that instead of using steam produced from the combustion of fossil fuels, the steam is produced by the heat collected from sunlight. Solar thermal technologies use concentrator systems due to the high temperatures needed

¹⁶ "Green Getaways: Northern California hotels go eco-friendly." Inside Bay Area. 30 Apr. 2009. 14 May 2009 <http://www.insidebayarea.com/travel/ci_12247268?source=rss>.

¹⁷ "Solar Panels." Renewable Energy-Energy from the Sun. 2008. 14 May 2009 <http://www.clean-energy-ideas.com/solar_panels.html>.

to heat the fluid¹⁸.

Solar energy is free, and its supplies are unlimited. Using solar energy produces no air or water pollution but does have some disadvantages associated with it. First, manufacturing the photovoltaic cells used to convert sunlight into electricity consumes silicon and produces some waste products. Additionally, the amount of sunlight that arrives at the earth's surface is not constant. It depends on location, time of day, time of year, and weather conditions. Finally, the sun doesn't deliver that much energy to any one place at any one time, so a large surface area is required to collect the energy at a useful rate¹⁹.

Wind Power

Wind power is the fastest growing industry in the world. Over time, technology has greatly improved for wind energy. For example, today we see larger more efficient turbines that make the industry more of a viable source²⁰.

The benefits of using wind power include reducing the environmental impacts with much less greenhouse gas emissions compared to energy produced from coal or natural gas²¹. Today, Jiminy Peak ski resort in Hancock Massachusetts installed a GE 1.5 MW wind turbine to meet the seasonal energy demand for the ski resort. Nearly 6% of the resorts annual \$20 million budget goes to power. When fully operational, the turbine will generate enough electricity to run half of the resort's necessary snow making. The wind turbine is expected to make an economic difference²².

In terms of the economic impacts, spas will see reduced costs as they produce their own electricity and refrain from buying energy from the electric grid. Estimates suggest that the costs and investment involved with the manufacturing and assembling of the wind turbine will pay off during the fifty year life of a wind turbine²³.

Wind energy system, or a turbine, transforms the kinetic energy for the wind into mechanical or electrical energy, usually in the form of rotation of a shaft. The mechanical energy is then converted to electric using a generator (**Appendix B**). The early wind turbines were based on windmill design for pumping water, but in the 1980s wind turbines began entering the US market

¹⁸ "Solar Thermal Power Plants." [Http://www.eia.doe.gov/kids/energyfacts/sources/renewable/solar.html](http://www.eia.doe.gov/kids/energyfacts/sources/renewable/solar.html). Nov. 2007. 14 May 2009 <<http://www.eia.doe.gov/kids/energyfacts/sources/renewable/solar.html>>.

¹⁹ "Solar Thermal Power Plants." [Http://www.eia.doe.gov/kids/energyfacts/sources/renewable/solar.html](http://www.eia.doe.gov/kids/energyfacts/sources/renewable/solar.html). Nov. 2007. 14 May 2009 <<http://www.eia.doe.gov/kids/energyfacts/sources/renewable/solar.html>>.

²⁰ "Learn About Wind Energy." [American Wind Energy Association](http://www.awea.org/faq/). American Wind Energy Association. 14 May 2009 <<http://www.awea.org/faq/>>

²¹ "Wind Turbines." [Vestas Wind Turbines](http://www.vestas.com/en/wind-power-solutions/wind-turbines.aspx). 14 May 2009. Vestas Wind Power Solutions. <<http://www.vestas.com/en/wind-power-solutions/wind-turbines.aspx>>.

²² "Green Jiminy." [Green Jiminy/Jiminy Peak](http://www.jiminypeak.com/page.php?PageID=1255&PageName=Green+Jiminy). 14 May 2009. Jiminy Peak. <<http://www.jiminypeak.com/page.php?PageID=1255&PageName=Green+Jiminy>>.

²³ [Albright, L., & Vanek, F. \(2008\). Energy Systems Engineering. New York: McGraw-Hill Companies.](#)

for grid electricity and have since grown nationally and internationally. In 2002 there were 32,400 MW of large-scale wind power internationally and in 2005 this figure had reached 59, 1000²⁴.

Wind turbines are tubular and made of steel; the blades are made of fiberglass-reinforced polyester or wood-epoxy. The modern designs have found that three blades are the optimal number of blades to retract sufficient energy yet still minimize the weight and cost of material on the turbine. The blade's function is very similar to an airplane propeller, but instead takes energy out of the wind rather than putting it in the wind²⁵.

How to Implement Renewable Energy Sources

Whether a spa chooses to implement solar energy or wind power, a process can be followed to move forward in implementing these resources. First, spa operators should gather energy data to see how much energy is currently used and if there are variances in use between seasons. Along with this research, the energy costs should be reviewed. A key factor is to determine what percentage of the total budget goes towards energy. Next, the spa operator should hire a civil or environmental engineering firm, who will determine what size turbine or solar cells will best suit the facility. Then, the engineering team will calculate how much the renewable energy source will cost. From the given costs, a breakeven analysis of how much money will be spent versus saved can be conducted. Based on the calculations, the spa can work with an architect and a design firm to implement the source (turbine or solar panels) while making it aesthetically pleasing²⁶.

Benefits from Renewable Energy

Hotels, resorts, and even spas are realizing the advantages from using renewable energy sources. For example, the eco-hotel spa Yves Rocher located in Brittany, in a small village of La Gacilly is scheduled to open in 2009. The hotel and spa will use low consumption light bulbs, energy appliances and all sorts of renewable energy (wind turbines, solar panels, and wood boilers)²⁷. Properties such as these will enjoy the benefits associated with renewable energy sources such as solar energy and wind power. First, there is a potential for greater reliability as the wind turbine or solar cells can be installed in such a way that if the wind energy is lost the system will switch into stand alone power, and the property will continue to have power. Additionally, as noted above lower energy costs can result from these sources after a break-even point. Finally, marketing and public relations can be enhanced as having a small wind turbine or solar cell on site makes an obvious statement about the spa's commitment to renewable energy. This information can draw in guests to the property and encourage positive responses from the public.

²⁴ Albright, L., & Vanek, F. (2008). *Energy Systems Engineering*. New York: McGraw-Hill Companies.

²⁵ "Learn About Wind Energy." American Wind Energy Association. American Wind Energy Association. 14 May 2009 <<http://www.awea.org/faq/>>.

²⁶ "Wind Turbines with Masters in Engineering Candidate, Christine Acker, EIT." Personal interview. 14 May 2009.

²⁷ April 2009: Opening of Yves Rocher Eco-Hotel Spa/ Hoosta Travel Magazine Luxury Design Boutique Hotels Restaurants. 19 Mar. 2009. Hoosta Travel Magazine. 14 May 2009 <<http://news-e.hoosta.com/april-2009-opening-of-yves-rocher-eco-hotel-spa/>>.

Other Ways to Conserve Energy

Properly Maintain the HVAC System

Implement a regular maintenance program to sustain energy efficiency of the system and pay close attention to its condition during peak operating times. Aside from maintaining the system, try and find ways to reduce inside heat sources such as selecting efficient windows and shutters. The Osmosis Day Spa Sanctuary has moved to alternative heating and cooling methods. For example, they have pioneered an innovative thermostat system using sensors at multiple locations connected to a computer to allow the use of waste heat in the attic, cool air under the building, and outside air when appropriate, to augment the HVAC system. Additionally, their doors and doorways have been upgraded to provide better insulation and improved temperature control in the spa. Controlling the temperature in a spa is vital to creating a perfect experience for guests²⁸. It is important to monitor the temperature throughout the spa, especially in the treatment rooms. Spas tend to over air-condition which not only impacts the guests but leads to high cooling costs.

Pay Attention to General Operations

There are options to consider about the general operation that can have an impact on energy consumption. For instance, operate laundry and other energy-intensive operations when utility rates are lowest. A very simple solution to saving energy is to turn computer monitors off when not in use. Even if a screen saver is in use, it is not saving energy. Additionally, it is better to turn computers off than to leave them in the standby mode, which uses more energy. Controlling devices, which can turn off unused office equipment, are available for purchase²⁹.

These devices are often referred to as "smart" power strips and use a variety of monitors, timers, and sensors to turn unused equipment off. For example, an occupancy sensor senses the absence of office workers and turns the attached equipment on and off accordingly. Smart power strips can be used to control a variety of devices that can be turned off when not in use, including calculators, coffee warmers, space heaters, and computer monitors. Devices that must stay on such as fax machines, modems, computer central processing units, and certain printers can simply be plugged into outlets that are not controlled by smart power strips. These devices can be bought from any electronics provider or office supply company that features environmentally friendly products. They tend to range in price from \$25 to \$50 USD³⁰.

Choose Efficient Lighting

Many of the lights and fixtures can be converted to be more energy efficient and longer lasting alternatives. For example, the use of compact florescent lamps produces more light and lasts longer than ordinary fluorescent lamps. Additionally, some spots of a spa are often over lit. For this reason,

²⁸ "Osmosis Goes Green." Osmosis.com-Greening. Osmosis Day Spa Sanctuary. 21 Apr. 2009 <http://www.osmosis.com/page_1234.cfm>.

²⁹ "Central Office Supplies." Climate Change. 30 Apr. 2009 <<http://www.climatechangecentral.com/take-action/business/energy-efficiency/office-equipment/office-equipment>>.

³⁰ -"Office Equipment: Smart Power Strips." Office Equipment: Smart Power Strips. 30 Apr. 2009 <http://www.peoplesgasdelivery.com/business/DisplayESource.aspx?type=PA&page=PA_3>.

purchase bulbs with lower lamp wattage and install timers and sensors to turn off lights in areas that are not frequently operated.

Consider Transporting Guests with Plug-In Electric Buggies/Golf Carts

Spas have the opportunity to make the buggies they use to transport guests across the property very innovative. The traditional buggies or golf carts can be replaced with sustainable electric vehicles that reduce carbon dioxide emissions and improve air quality. Additionally, the electric batteries of the buggies can draw off of renewable electricity supplied to the electric grid from the wind turbine or solar panels on a property.

Currently, Better Place has teamed with Renault-Nissan to make Israel the first nation in the world to commit to an all-electric car infrastructure. Additionally, Better Place Israel is working to deploy the world's first nationwide network for charging electric vehicles. The company unveiled its plugged-in parking lots as well as the charging spot design that will be used in deployments around the world. This idea of plugged-in parking lots can be available on the spa grounds to recharge the buggies. The electric vehicles can increase the efficiency of the transportation on the property and shift away from products that burn fossil fuels³¹.

Implement a Bike Share Program for Employees

Using the example set forth by Green Bangkok Bike, spas should explore the opportunity of offering a bike share program for the employees to use free of charge. The Green Bangkok Bike program features 300 bikes and eight service counters and stations around the historic Rattanakosin section of Bangkok. Run by the Bangkok Metropolitan administration, the program is free of cost for citizens as long as there is a national ID card or passport³².

If a program like Green Bangkok Bike was implemented at spas, employees can be encouraged to use the bikes as transportation to and from work as well as across the property. A program like this will diminish carbon dioxide emissions from work related vehicle trips while encouraging employees to live by the sustainable lifestyle that the spa promotes. Depending on the success of the employee bike share, the spa can create bike paths and trails for the guests to enjoy as an additional recreational activity.

Managing Waste Production

Like most businesses, spas produce a great deal of waste from their operations. Not only does waste exist from the treatments that are performed and the use of the locker room, but the administrative aspect creates waste similar to any office. While it seems like a small detail, spas have the opportunity to manage their waste production with both composting and recycling where possible.

³¹ "Better Place Unveils Design and Deployment of Charging Spot and Electric Parking Lots in Israel." Israel. 8 Dec. 2008. Better Place. 16 May 2009 <<http://www.betterplace.com/global-progress/israel/>>.

³² "Green Bangkok Bike." Bangkoktourist. 16 May 2009 <http://www.bangkoktourist.com/green_bangkok_bike.php>.

Compost Products throughout the Spa

Products from locker rooms, offices, retail, and food and beverage areas can be composted. The following examples of products may exist in a spa setting³³:

- Cardboard rolls
- Paper
- Coffee grounds and filters
- Cotton and wool rags
- Dryer and vacuum cleaner lint
- Fruits and vegetables
- Grass clippings
- Any plant debris
- Tea bags
- Shredded newspapers

In addition to its numerous environmental benefits, including the reduction and prevention of pollution, composting offers companies a great economic benefit. In strictly economic terms, composting can reduce the need for water, fertilizers, and pesticides, thereby cutting a company's maintenance costs significantly. In addition to helping and remediating contaminated soil and directly treating volatile organic compounds, composting serves as a marketable commodity and is a low-cost alternative to standard landfill cover and artificial soil amendments. Composting also extends municipal landfill life by diverting organic materials from landfills and provides a less costly alternative to conventional methods of cleaning contaminated soil.

Find Ways to Promote Recycling in the Spa

Recycling has been an apparent trend throughout the world for many years. Spa operators have the responsibility to promote recycling through providing receptacles for employees and guests to discard plastics, glass, and paper. Not only will this educate employees but will make it apparent to guests that the spa is taking efforts to manage waste wherever possible. Often, spas that feature recycling programs are grounded in holistic wellness, with an overall emphasis on the healing opportunities the spa industry offers.

About The Spa Component

When creating a sustainable spa environment, the sustainability focus must be brought to all areas of the spa. First, the spa operator must create a treatment menu that highlights the culture of the spa's region and follows current trends. Additionally, a treatment menu that provides options to improve guests' wellness will be in line with the focus to sustain the environment and its people. Next, the spa operator and team must determine what eco-friendly products will be featured in the treatments, used for cleaning the facility, and offered for sale in the retail area. Finally, the locker room must not only meet the needs of the guests with certain amenities and services but also create an environment, which aligns with goals to reduce the spa's environmental impact.

³³ "Basic Information-Composting." [Basic Information-Composting-US EPA](http://www.epa.gov/wastes/conserve/rrr/composting/basic.htm#todo). US Environmental Protection Agency. 16 May 2009 <<http://www.epa.gov/wastes/conserve/rrr/composting/basic.htm#todo>>.

Treatments

A range of spa treatments is now being offered throughout the industry. Depending on the market, demand, and service level, a spa can choose which treatments will best make up their menu. However, there are many treatments that are Asian inspired and can be implemented in many spas throughout the Asia Pacific region. Treatments should help represent the culture of the region. For instance, Thai massage or Japanese Shiatsu massage represents Asian cultures. For examples of common treatments used in the industry, please see (**Appendix B**). Along with each treatment, the benefits for the guest are also listed.

As the trend of alternative healing and medicine increases, it is important to consider ways to add alternative elements to the treatment menus in order to remain competitive. These elements are unique in that they provide benefits to guests that can improve mind, body, and soul. The following treatments are commonly used among the spa industry when creating a treatment menu that promotes the mind, body, and soul connection.

Reflexology

Reflexology applies pressure to a range of particular points on the hands and feet that correspond with all the organs, glands, tissues, and muscles in the body. By applying pressure to points on the feet and hands, problems elsewhere in the body can be treated and healed. It is based on similar principles to acupuncture and some types of massage, which suggest that bodies are mapped by channels of energy. The placement of pressure on one part of these energy channels, sends an impulse or message all the way along it, which unblocks it and encourages the energy to flow freely again.

Reiki

Reiki is a gentle form of healing therapy that originated in Japan. Reiki is a holistic treatment based on the idea of balance and qi-the life force that needs to flow freely through us if we are to be physically, emotionally, and spiritually healthy. Reiki is generally recognized as being relaxing, good at releasing stress, and helping with physical problems such as muscular aches. It is also believed to boost the immune system, and relieve even chronic, long-term conditions, as the treatment works with the body to help it heal itself. Reiki accomplishes these things through rebalancing energy and organs to help the body rebuild tissue. This healing yet spiritual experience is conducted by a specialized therapist.

Craniosacral Therapy

Craniosacral therapy is a holistic healing practice that uses very light touching to balance the craniosacral system in the body, which includes the bones, nerves, fluids, and connective tissues of the cranium and spinal area. The therapy uses gentle manual pressure applied to the skull, spine, and membranes to restore rhythmic flow to the craniosacral system. A craniosacral therapist feels for disturbances in the rate, amplitude, symmetry, and quality of flow of the craniosacral rhythm. The gentle touches are used to balance the flow.

Watsu

Watsu is a form of massage in the water based on the principles of Zen Shiatsu. It is a deeply relaxing combination of shiatsu and hydrotherapy. The treatment is very gentle and consists of assisted stretching and movement. It has been described as an underwater dance in warm water

between a guest and therapist. Watsu increases flexibility and strengthens muscles, and it is very relaxing. It can be used as a rehabilitation technique in which it focuses on a target area of muscles and joints.

Most of these treatments have their roots in ancient practices and the Asian culture while fostering improved wellbeing, and spas today are incorporating these themes into their menus. Spa companies like Mandara spas have perfected belief by offering treatments that reflect the beauty, spirit, and traditions of ancient times and the soul and ritual of Asian culture. In fact their philosophy is "to have a three part treatment menu, incorporating one-third Balinese treatments in keeping with the roots in which Mandara was founded, one-third traditional and classic techniques stemming from Europe and Asia, and one-third indigenous or native to the land in which the spa is located"³⁴. Some spas choose to specifically highlight the native location of the spa. For example, Hyatt Pure Spas attempt to blend harmoniously with natural surroundings and create experiences inspired by the native culture³⁵.

Products

A major environmental concern emerges when evaluating a spa's products. In order to run an efficient operation, many different products are necessary in terms of providing treatments of value, keeping a spa clean, and running a spa retail area.

Organic Treatment Products

A trend that is emerging globally throughout the industry, especially in the age of sustainability, is organic treatments. Spas are beginning to offer treatments that feature organic resources. Organic products specifically refer to those that include 100% natural ingredients derived from organic farms and certified by an international certifying body such as the USDA Organic (United States Department of Agriculture). Additionally, no synthetic chemicals are used at any stage of the production process³⁶.

The organic sector is one of the fastest growing in the global marketplace for health and beauty products, currently increasing at over 20 percent a year in the US alone. Nowhere is this truer than in the spa industry, where customer demand for natural, chemical-free products is on the rise and new organic skincare suppliers are emerging. However, there is danger that consumers may be misled as suppliers scramble to join this organic bandwagon. Not all countries have official regulations or standards for organic or natural skincare products, leaving customers vulnerable for misinformation³⁷. For instance, the ASEAN Cosmetics Association, Inc. consists of organizations from different countries that aim to harmonize and maintain cosmetic regulations³⁸.

Along these lines, there are some basic practices to consider when implementing sustainable

³⁴ "About Mandara." MandaraSpa.com. 2 May 2009 <<http://www.mandaraspaspa.com/Main/Page.aspx?PageID=1000>>.

³⁵ "Treatments." Hyatt Pure Spa. 2 May 2009 <<http://www.hyatt.com/hyatt/pure/treatments/>>.

³⁶ "Certified organic skin care: The step by step formula." CERTIFIED ORGANIC SKIN CARE: HOW TO SEPARATE FACT FROM FICTION. 29 Apr. 2009 <<http://www.natural-skincare-authority.com/certified-organic-skin-care.html>>.

³⁷ What's next for the spa industry? Preview By: Howells, Rhianon. Leisure Management, Jan/Feb2008, Vol. 28 Issue 1, p54-57.

³⁸ "ASEAN Cosmetics Association: Home." ASEAN Cosmetics Association. 2005. 19 Nov. 2008 <<http://the.asean.cosmetics.association,inc.org>>.

products in the organization:

- Offer organic oils and lotions during treatments
- Find suppliers with organic table linens
- Develop treatment options that do not require a great use of products

The number of organic product suppliers is consistently increasing. To begin to search for a product supplier, consider the following companies who were pioneers in the industry and devoted to creating an environment that delivers sustainable growth.

Jurlique: An independent alternative skin care company that has been developing biodynamic beauty products since 1985. Using their own farms, their mission is to pioneer biodynamic beauty by creating superior products. They have two farms in the Adelaide Hills of South Australia where they grow over 35 different varieties of plants and flowers. Using their biodynamic blends, the company offers products for skin, body, hair, babies, and essential oils³⁹. The term biodynamic specifically refers to a type of farming. It is one of the original approaches to organized organic farming. Originating from a spiritual view of the universe, biodynamic farming regards the farm as a living organism. This farming does not use artificial fertilizers or pesticides. Instead, the fertilizing preparations are made from farm-sourced materials. There are biodynamic certifying organizations such as Demeter International⁴⁰.

Jamu: Founded in Bali, Indonesia in 1993. Their products are natural, organic recipes that are animal and cruelty free and biodegradable. Jamu includes natural ingredients found in Asia's most exotic paradises such as jasmine, frangipani, ylang-ylang, and ginger. Both for treatment use and retail areas, featured products include hand and body lotion, bath and shower gels, massage oils, and body, hand, and foot scrubs⁴¹.

Eminence: Organic Skin Care: These products are created using European certified premium quality herbs, fruits, and flower buds, which are free of parabens, mineral oils, petroleum, and sodium lauryl sulphate. For over forty years, the company has hand-picked fresh ingredients which are then hand-mixed with pure waters drawn from a thermal hot spring lake. All their products are made in Hungary and include no heating or hydrogenating processes. With their large product selection, Eminence offers everything from body and massage creams to herbal spa teas⁴².

Sodashi: Sodashi was founded in 1999 and now is internationally known and can be found in some of the world's finest spas. Sodashi is a Sanskrit word that translates to wholeness, purity, and radiance, and its products are created based on the knowledge of ancient philosophies and natural healing traditions. Their products are made of the highest quality organic ingredients

39 "Jurlique Australia-Skin Care Products." Understanding Jurlique. 2008. 7 Nov. 2008 <<http://www.jurlique.com.au/pcat/aboutus>>.

40 "What is Biodynamic-organic make up and skin care?" Organic Make up and Skincare. 29 Apr. 2009 <<http://www.organicmakeupandskincare.com/blog/2008/05/what-is-biodynamic/http://www.organicmakeupandskincare.com/blog/2008/05/what-is-biodynamic/>>.

41 "Asain Spa Rituals-Jamu." JAMU:Organic Body Care and Natural Body Care Products. 7 Nov. 2008 <<http://www.jamuspa.com/>>.

42 "Eminence Organic Skin Care." Welcome to Eminence Organics. 2008. 6 Nov. 2008

<<http://www.eminenceorganics.com/page/index.php?nid=3>>.

sourced from around the world. Additionally, the products are packaged with 100 percent recyclable materials. Their products focus on the face, body, and for people's home, work, and travel⁴³.

Green Cleaning Products

Spas are facilities where guests have a lot of physical contact with fixtures and equipment, which requires a great deal of sanitation. Choosing cleaners that will make the building clean as well as environmentally sound can be a challenge, because many products on the market contain toxic and hazardous chemicals. For this reason, it is always important to read cleaning products' labels and pay attention to words such as caution, warning, danger, and poison. If questions exist about the product, do not hesitate to call the manufacturer. In addition to these steps consider the following when choosing environmentally conscious cleaning supplies:

- Choose products that are biodegradable and non-toxic.
- Choose products with a neutral pH.
- Choose products in recycled, recyclable, and refillable containers and packaging.
- Avoid products containing ethylenediaminetetraacetic acid (EDTA), which is a complex molecule used medically to chelate metal ions in case of lead or heavy metal poisoning. Look for alternatives with sodium citrate, sodium bicarbonate, sodium carbonate, and sodium silicate.
- Avoid products containing chlorine bleach or sodium hypochlorite.

Sustainable Retail Products

In many spas, an area will be dedicated to the selling of retail products. While this is a minor consideration, taking a look at the products sold in the retail area and their companies' commitment to improving the environment can contribute to meeting the goal of achieving sustainability. Additionally, retail packaging can often times be harmful to the environment. However, there are many suppliers who are offering sustainable packaging products. To help create a green retail area for the spa, consider the following guidelines:

- Choose recycled products and packaging.
- Partner with suppliers who use sustainable business practices.
- Be involved with creating energy efficient distribution of the products to the facility.
- Use local suppliers.
- Try not to carry products made from shell or ivory in support of animal rights.
- Reduce the use of ozone-unfriendly products like plastic.

Sustainable retail products are those made of organic materials. There are many items that spa retail can feature; however there are some products that have become commonplace to spa visitors. These items include:

- Candles and incense

43 "Experience Sodashi." Sodashi. 2007. 9 Nov. 2008 <<http://http://www.sodashi.com/experience/index.asp?curr=eur&lacode=engau#->>.

- Body care products which are usually featured in treatments
- Soap
- Fragrance Diffusers
- Home accessories
- Books on sustainable lifestyles
- Packaged teas
- Bags and totes
- Essential oil and incense oils
- Clothing such as yoga gear

These mentioned retail items are standard products available at most spa retail areas. However, today we are seeing a shift in retail items to more creative options, which highlight a company's commitment to sustainable practices and community outreach. Additionally, spas are offering products made out of local goods to consumers to help highlight the culture of the location and contribute to the well-being of the native people. For example, ceramic amenities such as tea sets crafted by locals, robes and slippers made from local fabrics, and even local artwork can be provided to consumers. Companies like Banyan Tree are on the forefront of this trend with their retail offerings at their Banyan Tree Galleries. The company's Banyan Tree Galleries acts as a marketing platform to create a cultural and green awareness. In fact, the Galleries' business ethics centers on the following four core values⁴⁴:

- Sustaining Village Development
- Conserving Natural and Cultural Resources
- Showcasing Ethnic Crafts and Culture
- Educating and Motivating Stakeholders

Not only does the company showcase local goods but also has partnered with organizations to contribute to environmental and social causes. For example, Banyan Tree publicly supports the following organization on their website:

"Hilltribe Bamboo Baskets Durable, easily replenishable and environmentally sustainable, bamboo plants have provided the Mooser Hilltribe Women's Cooperative in North Thailand with one of the most promising solutions to continuing basketry crafts without damaging the environment. Regular orders of these beautifully woven bamboo baskets from clients like Banyan Tree Gallery have allowed this cooperative of 50 hilltribe dwellers to keep families together in one roof, while improving rural income⁴⁵."

In terms of the company's commitment to their green initiative, unique collections are continuously created to promote environmental consciousness. For example, their "Save the Corals" apparel

⁴⁴ -"Keeping Cottage Crafts Alive." Keeping Cottage Crafts Alive. Banyan Tree Resorts. 3 May 2009
<http://www.banyantree.com/en/csr/our_focus/community/creating_livelihoods/keeping_cottage_craft_alive.html>.

⁴⁵ -"Banyan Tree Gallery-Corporate Information." Banyan Tree Gallery. Banyan Tree Hotels and Resorts. 2 May 2009
<http://www.banyantreegallery.com/information_about_us.php?osCsid=4289avvfhloro8ukn7omplt717>.

series promotes endangered corals in the Maldives. Regardless of the products in a series, a write-up with consumer education literature on the targeted campaign is provided⁴⁶.

A company like Banyan Tree provides a wonderful example and platform for a truly eco-friendly retail program for the spa. By reaching out to the local community and highlighting specific conservation efforts of the location, a spa can directly benefit the area the company has entered with their operation and promote both a sustainable environment and economy.

Locker Rooms

The spa's locker rooms receive a great deal of use and come in contact with each of the guests. To meet the needs of guests, it is best to offer a sauna, steam room, showers, toilets, changing space, and a whirl pool/Jacuzzi. In most situations, each guest expects a robe, slippers, and towels. In addition to these components, locker rooms usually offer soap, shampoos/conditioners, lotions, hair supplies, etc. The quality of these amenities and fixtures and number of options is dependent on the level of service of the spa, the financial resources, and type of spa. While all of the amenities and major fixtures are necessary, it is important to think about the environmental impact locker rooms may have.

Sauna

A sauna is an enclosed room, which warms air creating high temperatures with low humidity levels. This helps to boost circulation, relax muscles, and soothe the mind. The heat comes from very hot rocks placed in the room. Saunas are particularly good for the skin and muscles. Due to the fluid loss from sweating, guests using a sauna will need to re-hydrate soon after. For this reason, it is important to have water available; however, consider using a water dispenser rather than individual water bottles. Of course, water bottles can be given upon request. Another option would be to have water pitchers and glasses in different areas around the locker room for guests to use when water is needed.

While it would seem that saunas would use a great deal of energy, there are companies offering saunas designed with far infrared carbon technology heating panels. These panels are energy efficient. Finnleo Sauna manufacturer have been proven to design saunas that emit no volatile organic compounds (VOCs) and little or minimal electromagnetic field (EMF) emissions. This means guests will not be exposing themselves to any toxins⁴⁷.

Steam Room

Traditionally, spas included some element of steam seeing that its soothing and muscle-relaxing properties have always been valued. A room is usually covered in tiles where a guest can sit or lie down. Steam is dispensed into the room and a panel in the room controls the temperature and intensity. Like a sauna, steam rooms are particularly good for the skin and muscles. The steam leads

⁴⁶ "Banyan Tree Gallery-Gallery Efforts, Green Imperative." Banyan Tree Gallery. Banyan Tree Hotels and Resorts. 2 May 2009

<http://www.banyantreegallery.com/information_gallery_green.php?osCsid=4289avvfloro8ukn7omplt717>.

⁴⁷ "The Environmental Impact of Saunas." [Finnleo/Green Saunas](http://www.finnleo.com/Finnleo_Lifestyle/Green_Impact.htm). Finnleo-Your Green Sauna for Life. 5 May 2009
<http://www.finnleo.com/Finnleo_Lifestyle/Green_Impact.htm>.

to sweating, which releases toxins and relaxes muscles. Again, having a water dispenser in the locker room is a great way to meet guests' needs for water after a steam.

It is best to find steam room suppliers who care to use organic materials to design and build the steam room. Additionally, while steam rooms often require less energy than saunas seeing that they are operated at a lower temperature, they tend to use more water. For this reason, finding designs that include strong sensors is important to avoid overuse or wasted water when no guests are utilizing the steam room.

Showers and Toilets

Just as in any fitness center locker room, toilets and showers are essential for a proper operating spa. Unfortunately, toilets and showers require a great deal of water, especially with every guest coming in contact with these fixtures. As mentioned earlier in the study, there are options to conserve water. Investigate and install the options for low flow faucets and showerheads and retrofit where are possible. Additionally, water conservation devices can be applied to toilets such as Toilet Dams. Lastly, consider installing a gray water system to be used for toilet water.

Whirlpools

Whirlpools have become commonplace in spa facilities. Their benefits to guests are crucial to a spa experience as the bubbles and jets gently massage while releasing muscle tension and enhancing relaxation. However, not only do whirlpools require a great deal of water but rely on energy to heat the water. To help reduce the amount of water and energy used, there are some options to consider.

If possible, it is best to limit pool circulation to actual usage time. Excess circulation can result in higher evaporation rates. Also, a simple practice that can be utilized is the covering of pools when they are not in use to conserve heating energy. Lastly, you may consider not including a whirlpool in your facility.

Linens

Throughout a spa, different linen is needed to run an operation. In the locker rooms, guests will need hand and body towels to use during their visit. Additionally, guests are provided with robes and slippers to wear. Without these linen items, it is difficult to provide a truly relaxing spa experience. Not to mention, these items have become expectations for spa-goers.

The number of linen suppliers in today's market is immense but as an operator try and search for suppliers with towels and robes made from natural ingredients, containing no chemicals, dyes, or bleaches. Also, when linen is stained reuse it as cleaning rags or look at the potential of dyeing the stains to match the original color. When dealing with dirty linen, follow the recommendations for efficient laundry practices as mentioned previously in the study. Additionally, throughout the locker room instructional cards explaining the green initiative and the invitation to choose for themselves the frequency of using towels can notify guests of the commitment to green practices. These cards can help to limit the number of towels used during guests' stays.

Amenities

Most spas provide certain bath amenities to guests depending on the quality and service level of the operation. In most spas, like a hotel guest room, shampoo, conditioner, and body wash is supplied in

the showers. At the vanities and sink area, lotions, hair products, mouth wash, deodorant, nail files, and cotton products are available for guest use.

When evaluating a spa, it is best to take time to review the choice of amenities in terms of size and associated wastes. Along these lines, assess how often guests are using certain amenities. This assessment could impact purchasing, choice of supplier, and products offered. Additionally, consider choosing products with less or reusable packages. For example, instead of individual soaps and shampoos, have refillable dispensers in the showers and at the sinks. When choosing which amenities to offer to guests reach out to suppliers who offer natural or certified organic.

Innovative Approaches

While sustainability is constantly growing in popularity, it has been a trend in the spa industry for many years. For this reason, it is important to consider innovative ideas to keep a spa constantly ahead of the sustainability movement. While the following approaches for new sustainable ideas are not an option for all spas, they all may be future opportunities or have the potential to be adapted to fit into any spa environment.

Offer a Greenhouse for the Guests

A greenhouse is a structure with a glass or plastic roof and frequently glass or plastic walls and is used for cultivating plants. Greenhouses heat up when incoming solar radiation warms plants, soil, and other things inside the building. Air warmed by the heat from hot interior surfaces is retained in the building by the roof and wall. These structures range in size from small sheds to very large buildings. The glass used for a greenhouse works as a selective transmission medium for different spectral frequencies, and its effect is to trap energy within the greenhouse, which heats both the plants and the ground inside it. While the concept of greenhouses seems foreign to the spa industry, it may be a new avenue to provide a thermal experience to guests. Much like a sauna or steam room, a greenhouse type structure can be designed using the same tempered and insulated glasses, and then implemented for guests to use for the same healing benefits as saunas and steam rooms. Inside the green house, tropical plants, which are native to the spa's location, can surround luxurious lounge chairs for guests to use while inside the structure. Additionally, much like a typical greenhouse where misters are used to water the plants inside, misters can be installed around the room to mist people who are using the space when they become overheated. Not only would this help to grow sustainable native plants, but would be a creative, differentiating point for a spa.

Provide the Amenity of Botanical Garden

Botanical Gardens on site at a spa can provide the opportunity to feature the location's native ecosystems and plants. The botanical garden could have functions ranging from a place to go for meditation to a hands-on learning center for the guests. The Shangri La Botanical Gardens and Nature Center in Orange, Texas was named one of the American Institute of Architects, Top Ten Green Projects of 2009. This unique project combined a Platinum LEED certificated building design with the natural ecosystem in Texas to serve as an interpretive center for the site's native ecosystems⁴⁸.

⁴⁸ "Shangri La Botanical Gardens & Nature Center." The American Institute of Architects: Top Ten Green Projects. 16 May 2009 <<http://www.ariatopen.org/hpb/overview.cfm?ProjectID=1382>>.

One option is to develop a nature center similar to that at Shangri within the garden. The center can teach visitors about the native plants, animals, and the benefits that large gardens provide the environment. The botanical gardens also provide the opportunity to connect visitors with local nature, highlighting the true beauty and its overall importance in our environment. Additionally, to make the spa even more sustainable, herbs and plants can be grown in the botanical gardens. This vegetation can be used to create products such as massage oils or can be served fresh from the spa restaurant or café.

Consider Adding a Roof Top Garden

While providing a natural oasis on top of a building, rooftop gardens are also very efficient. The roof gardens are extremely energy efficient, providing natural noise and thermal heat insulation, which cut down on utility bills. The foliage on the gardens retains twice as much rainfall and sun resulting in less water runoff and flooding. Additionally, due to the extra foliage, the gardens re-oxygenate the air and retain harmful toxins. The rooftop gardens at a spa can provide a beautiful and tranquil spot for the guest to reflect and enjoy while reaping the natural benefits⁴⁹.

Personnel

A variety of people are needed to successfully run the spa component of a facility. From spa managers to supervisors, receptionists to therapists, a cohesive team is formed that helps to carry out the mission of the spa. When deciding to implement a more sustainable operation, it is vital to educate the staff on these new efforts. Of course, memoranda and email can be used to communicate these changes to the staff if the spa is already in place, but if a new spa is being built, a component of the training process should be devoted to the facility's commitment to going green. Communication with the Human Resources department should take place to ensure the training materials educate staff on the actions taken by the property to be more sustainable and the part the employees play in carrying out these efforts.

The staff should be invited to test the organic skin care and retail products. This way they will be able to communicate information about the products to the guests and be motivated to sell them. Additionally, an informative presentation should be given to the staff regarding any partnerships with community organizations in order to provide employees with this knowledge to share with consumers. Finally, many spas are hoping to educate their staff about general sustainability. For this reason, they are sponsoring trips to recycling centers and Green Globe certified buildings or inviting professionals who are devoted to sustainable lifestyles. For example, the Osmosis Day Spa Sanctuary has organized an eco-tour for staff to visit a local recycling facility to increase awareness and engagement in the process of waste reduction⁵⁰.

About the Wellness Component

Aside from the basic spa components, a spa center should include a wellness component as well. A major trend across the globe in most wellness components is a focus on complementary medicine. Complementary or integrative medicine combines the holistic medicine of the East with the clinical,

⁴⁹ "Stunning Roof Gardens Also Have Beautiful Advantages." Roof Garden-Roof Top Gardens. 16 May 2009 <<http://www.servicemagic.com/article.show.Stunning-Roof-Gardens-Also-Have-Beautiful-Advantages.13550.html>>.

⁵⁰ "Osmosis Goes Green." Osmosis.com-Greening. Osmosis Day Spa Sanctuary. 21 Apr. 2009 <http://www.osmosis.com/page_1234.cfm>.

body-mind distinct dichotomy medicine of the West. Eastern cultures have known for centuries that the mind, when relaxed and reflective, can root out the symptoms of health disorders. Eastern medical practices have taken into account and treated seriously the psychosomatic component of health disorders and illness. They have been practicing integrative medicine for a long time⁵¹. In addition, consider practices of the Native Americans of Northern America for this group shares much of the ancient wisdom that the Chinese and Indians do.

An important aspect of the cultural medicines that are referred to in this study is that all three center on harmony and balance. This will tie in with the sustainable theme of the spa and wellness center. It is crucial to maintain the integrity of your values throughout your entire property, especially in the methods that you teach.

For the purpose of this report, the wellness component will include physical fitness, Traditional Chinese Medicine, Ayurveda offerings, Native American Indian Medicine, and life counseling services. All these aspects help guide guests physically, mentally, and spiritually. With a focus on sustainability, spa operators must also be mindful of sustaining the wellbeing of their guests. A wellness center can help meet this need.

Throughout the next section, different wellness “treatments” will be suggested. These treatments differ from the spa “treatments” in the way that they pertain to the five areas of wellness covered. However, space in the overall facility for wellness treatments and spa treatments may be shared.

Physical Fitness

The Fitness Center would be the first component of the Wellness Center. Physical fitness is essential to wellbeing, and our Fitness Center would be a place where guests would be encouraged to exercise for total body wellness. Many American gyms lead their clients to believe that they serve the purpose of improving the aesthetics of their bodies, and not necessarily the inner wellbeing. The Fitness component of the Wellness Center outlined here would be designed to focus the clientele on "total mind, body, and spirit" fitness - not just an aesthetically pleasing body. The Fitness Center would include three major components: a facility, fitness classes and personal training.

Fitness Facilities

The trend of health conscious people has been growing rapidly over time and continues to grow in popularity. While traditional components such as weight and cardio machines are still available in fitness facilities, there has been a switch from traditional aerobics and weight training programs to exercises that work to balance the mind and body in order to achieve an optimal level of performance⁵².

The fitness facility would include the following:

⁵¹ Mashak, Kim, and Mary Tabacchi. "The Efficacies and Cost Effectiveness of Complementary Medical Concepts Most Commonly Used in Spa Settings." International Spa and Fitness Association and Cornell University (1997).

⁵² Mashak, Kim, and Mary Tabacchi. "The Efficacies and Cost Effectiveness of Complementary Medical Concepts Most Commonly Used in Spa Settings." International Spa and Fitness Association and Cornell University (1997).

- Weight machines (such as stack or plate loaded machines that provide resistance to the user in order to enhance muscle growth). In order to provide safety to guests, a fitness attendant should be available to prevent guests from injuring themselves and to help with weight training form.
- Cardio Machines
- Pilates Machines (such as a Pilates Reformer, which allows the user to focus on their flexibility, strength, and alignment through greater resistance than mat Pilates can provide.)
- Pool
- Outdoor Yoga Deck
- Tai Chi/Qi Gong Pavilion

In addition to these machines and fitness spaces, fitness classes should play a large part in the guests' use of the wellness center. The following classes are most common in today's centers:

Yoga is Sanskrit for "union" of the mind with the body and breath to attain a higher level of consciousness. It is often referred to as the oldest system of personal development encompassing body, mind, and spirit. Going back more than 5,000 years, yoga consists of "asanas," or body positions and "pranayama," or steady breathing to control vital energy and meditation (i.e. the practice of mindfulness to focus on awareness). Different forms of yoga exist such as⁵³:

- Flow/Vinyasa
- Power
- Ashtanga

Pilates is a technique developed by Joseph Pilates in 1920s for dancers to improve flexibility and build strength without bulk by elongating the muscles. Recently, it has been discovered as an effective, yet gentle total body exercise aiding in the prevention of soft tissue injury⁴⁶.

Tai Chi is an ancient Chinese exercise, which incorporates elements of physical fitness, healing attributes, and self-defense. It is a unique, gentle combination of fitness and relaxation⁴⁶.

Kickboxing is also referred to as boxing aerobics and cardio kickboxing. It is a hybrid of boxing, martial arts and aerobics that offers an intense cross-training and total-body workout. It blends a mixture of high-power exercise routines that strengthen the body and mind, decrease stress and hone reflexes while increasing endurance and cardiovascular power. While kickboxing's roots are in full-contact fighting, it has found a safe and very effective niche in the fitness community⁵⁴.

Step aerobics is distinguished from other forms of aerobic exercise by its use of an elevated platform (the step). The height can be tailored to individual needs by inserting risers under the step. Step aerobics classes are offered at many gyms and fitness centers, which have a group exercise program.

Strength and Tone is class designed for a total body sculpt for all levels. The class uses controlled

⁵³ Mashak, Kim, and Mary Tabacchi. "The Efficacies and Cost Effectiveness of Complementary Medical Concepts Most Commonly Used in Spa Settings." International Spa and Fitness Association and Cornell University (1997).

⁵⁴ "Kickboxing Fitness." Fit FAQ. 15 May 2009 <<http://www.fitfaq.com/kickboxing-fitness.html>>.

moves emphasizing perfect form to define the body and build lean muscle mass. Weights, body bars, medicine balls, and stability balls are commonly used in these classes.

Bosu stands for "Both Sides Up" or "Both Sides Utilized" depending upon whether it is the BOSU Balance Trainer (the product) or BOSU (the philosophical approach to exercise).

The essence of BOSU, (the philosophical approach to exercise), is seeking better balance, in all aspects of life. Training BOSU begins with the body. The BOSU Effect is the performance boost we experience when both sides of our brains reach a heightened state of energetic balance. The more we practice getting to this state, the easier it becomes. The process of training BOSU also enhances movement capabilities better than any form of training⁵⁵.

Aqua Toning/Pilates is designed to use water's natural resistance to increase the body's full range of motion while stabilizing the core muscles. The mind-body workout incorporates movements based on the Pilates method. Set in the healing environment of water, the workout facilitates increased flexibility while challenging individuals to maintain core stabilization, postural alignment, and balance⁵⁶.

Personal Training

Personal training would be available to those guests who would like to speak to a professional about their fitness regimen. Regardless of their length of stay, tourists would be able to schedule appointments to seek consultation from highly trained experts. In addition to supervising the fitness area and safety, the personal training professionals available would be able to help guests with the following:

Basic Fitness Testing: Professionals could test aerobic capacity, flexibility, and strength in order to do an analysis of basic fitness capability. After doing a basic fitness test, the trainer would be able to make a more accurate prescription of a fitness plan.

Consultation: During a consultation, the guest and trainer can discuss a variety of components of the guests' physical fitness including: strength, aerobic capacity, aging, flexibility, and total vitality. The trainer and guest can discuss the guests' lifestyle, what fitness efforts have succeeded in the past, and what the guests' obstacles to fitness are.

Goal Setting: Together, the trainer and guest can develop fitness goals for the client based on the fitness testing and ideas mentioned during the consultation.

Personal Fitness Plan: After goals are set, the trainer can put together a specific fitness plan for the guest based around these goals. The fitness plan will be something that is realistic yet challenging for the guest and something that the guest will be able to fit into his or her schedule and lifestyle.

⁵⁵ "What is Bosu?" BOSU Fitness-Home of the Inventor David Weck-What is BOSU? BOSU Fitness. 15 May 2009 <<http://bosufitness.com/what-is-bosu>>.

⁵⁶ "Peyow Aqua Pilates." The Official Site of Peyow Aqua Pilates. Peyow Aqua Pilates. 15 May 2009 <<http://www.aquapilates.net/?gclid=CKqiirvyvpoCFQJN5Qodk3HSrQ>>.

About the Fitness Center and Sustainability

In general, fitness centers have more of an environmental impact than other aspects of the wellness center due mainly to of resources. The following are some common practices to reduce the eco-footprint of the fitness center (however, to refer to a comprehensive guide on employing sustainable practices, please see the earlier sections on “Managing Water Use” and “Managing Energy Use”):

Linens: Much energy is used to constantly clean the towels used by guests in the fitness center. Overuse of linens and towels is often the culprit of wasted energy. This can be avoided and limited by giving each guest one towel when they enter the fitness center.

Energy Usage: Some ways to limit energy usage by at the fitness center include: Opt for low-electricity equipment, such as free weights, balls, bands, and other fitness props. Most of these products have the same physical impact as electric machines, but with half the environmental impact.

Remind guests to turn off machines when they get off. Many guests unknowingly leave machines running, even when they have finished using them. Unplug exercise machines at night. Even when machines are turned off, they can still be using unneeded energy at night. Avoid this problem by making sure all are turned off.

Water Bottles: Do not keep disposable water bottles or water cup in the fitness center. Instead, give each guest a low-BPA plastic or metal water bottle to drink from. Encourage guests to write their names on their bottles and keep track of them.

Traditional Chinese Medicine

Traditional Chinese Medicine (TCM) medical theories have two distinct features—their holistic view and their application of treatment according to the differentiation of symptom-complexes. For example, the zang-fu organs are the core of the human body in which organs, tissues and neural networks are connected via blood, lymph, neurons and neuro messenger peptides. This concept is applied comprehensively to physiology, pathology, diagnosis and treatment. Like modern medicine, TCM holds that there exists a connection between the organs and their related tissues. TCM treatment consists of regulating the functions of the zang-fu organs in order to correct pathological changes. Acupuncture is a form of TCM treatment using the insertion of fine needles to stimulate certain areas of the external body (i.e., specific acupoints which promote pathways for electrical impulses and neural transmitters). As a result of treatments such as acupuncture the balance of qi, or chi, is restored along electrical patterns. A strong and healthy body has a balanced chi (energy) flow⁵⁷.

The theory of Yin-Yang is a major principle of TCM. The ancient Chinese held that all phenomena and objects consisted of opposites and their implicit interdependence, yin and yang, which are defined in various ways as up and down, right and left, light and dark, hot and cold, etc. This theory shows us that everything in the universe can be divided into opposite, yet complementary aspects. TCM’s principle is maintaining balance between the two. Therefore, treatment must restore balance,

⁵⁷ Cheng, W.R. and Associates. (1996). *Wyith R. Cheng and Associates—Traditional Chinese Medicine Homepage*. “Introduction to TCM.” <<http://www.wyith.com/topics/tcm/intro.htm>>.

or serenity, in the patient in terms of normal physiological activity. When people become imbalanced through stress or not following proper health practices disease occurs⁵⁸.

In a wellness center, the typical TCM therapies of acupuncture, herbal medicine, and qigong exercises should be available.

Acupuncture: As noted before, acupuncture treatment is accomplished by stimulating certain areas of the external body. A licensed acupuncturist is needed to perform acupuncture on guests.

Herbal Medicine: This component acts on zang-fu organs internally. Herbs are classified in two major dimensions. The first dimension refers to the temperature characteristics of the herb. The second dimension refers to the taste property of the herb. The various combinations of temperature and taste give the herb its properties that can influence the yin and yang energy patterns of the body⁵⁹.

Qigong Exercises: These exercises try to restore the orderly information flow inside the network through the regulation of Qi. Qigong is an exercise to regulate the mind and breathing in order to control or promote the flow of qi. Since qi plays such an important role in the vital processes of the human body, the regulation of qi flow can be used to preserve health and treat disease⁶⁰.

These therapies appear very different in approach yet they all share the same underlying sets of assumptions and insights in the nature of the human body and its place in the universe.

Ayurvedic Center

Ayurveda is a natural system of medicine that originated in India and evolved there for more than 5,000 years. In Sanskrit, the word “ayur” refers to life and “veda” to science. The prescription provided by these ancient doctors was simple: Make choices that support individual balance and wellbeing. In South Asia and India, Ayurveda remains a very common form of medicine. Although traditional Western medicine is still very prevalent in American culture, Ayurveda is starting to be considered as a form of complementary and alternative medicine in Western cultures (primarily in the United States). Many people seeking cures for their ailments, whether they are physical or mental, are turning to Ayurvedic medicine for solutions that Western medicine can't provide.

Because Ayurvedic medicine aims to integrate and balance the body, mind, and spirit; many view it as a "holistic" form of healing. A mind/body/spirit balance is believed to lead to happiness and health, and to help prevent illness. Ayurvedic medicine also aims to treat specific physical and mental health problems. The main goal of Ayurvedic practices is to cleanse the body of substances that can cause disease, thus helping to reestablish harmony and balance.

⁵⁸ Cheng, W.R. and Associates. (1996). *Wyith R. Cheng and Associates—Traditional Chinese Medicine Homepage*. “The Theory of Yin-Yang.” <<http://www.wyith.com/topics/tcm/basics/yinyang.htm>>.

⁵⁹ "Herbal Therapy." *Chinese Herbal Therapy*. 2009. 15 May 2009 <http://www.tcmpage.com/herbal_therapy.html>.

⁶⁰ "Qigong Therapy." *Qigong*. 2007. 16 May 2009 <<http://www.tcmpage.com/qi-gong.html>>.

The overall message of Ayurveda is that a balance between mind, body, and spirit will prevent illness and promote wellness. However, the following are more specific guiding principles of Ayurvedic medicine that pertain to daily life according to Deepak Chopra, who is seen as a leader in America's movement towards Ayurvedic medicine⁶¹:

- Take time each day to quiet the mind (meditate).
- Eat a colorful, flavorful diet.
- Engage in daily exercise that enhances flexibility, strength, and cardiovascular fitness.
- Sleep soundly at night.
- Eliminate what is not serving you.
- Cultivate loving, nurturing relationships.
- Perform work that awakens your passion.

Doshas⁶²

Traditional beliefs are that all humans are a unique combination of three “doshas”: vata, pitta, and kapha. While each person has a dominant dosha, the true key to understanding Ayurvedic medicine is understanding that we must maintain a balance of all doshas within us. With the knowledge of what our dominant doshas are, we can better understand ourselves.

It is important to note that dosha types and the meanings of each type are fun for guests to play with and understand, but they are not central to the meaning of Ayurvedic wellness. When introducing Ayurvedic wellness to guests, dosha types should be seen as an only one facet of the practice and to be used in conjunction not only with other Ayurvedic practices, but other wellness practices as well.

Ayurvedic Counseling

The primary highlight of visiting the Ayurvedic component of the Wellness Center would be to schedule a consultation with an Ayurvedic professional. During this consultation, the professional cover the following topics:

Dosha Type: The professional would do a series of tests and questionnaires to discover which dosha is a guest's dominant type. Uncovering this dosha type will help the professional mold the rest of the consultation.

Stress Management: The professional will discuss with the guest his or her lifestyle and any aspects of negative stress that he or she is coping with. The professional will discuss ways to eliminate negative stress from life and healthy ways to handle stress.

⁶¹ The Science of Ayurveda. Chopra Center. < <http://www.chopra.com/ayurveda>> “Ayurvedic Medicine: An Introduction”. National Center for Complementary and Alternative Medicine. < <http://nccam.nih.gov/health/ayurveda/>>.

⁶² The Science of Ayurveda. Chopra Center. < <http://www.chopra.com/ayurveda>> “Ayurvedic Medicine: An Introduction”. National Center for Complementary and Alternative Medicine. < <http://nccam.nih.gov/health/ayurveda/>>.

Restful Sleep Techniques: The professional will talk about the guest's sleep routine. If he or she is not achieving an optimal amount of sleep, the professional will discuss changes he or she can make to his or her lifestyle to accommodate more sleep into life.

Herbal Supplementation: Based on how the professional perceives your health, he/she can prescribe herbal supplements that will aid in your digestion and vitality.

Nutrition: Based on a guest's dosha type, the professional can discuss with him or her which foods will be easier or harder for him or her to digest and which foods are most agreeable to the dosha type⁶³.

Implementing Ayurveda in a Luxury Spa Setting

We realize that true authentic Ayurveda is difficult to associate with luxurious spa experiences due to their extremity, but Whether a spa director is operating a destination spa, hotel/resort spa, or a day spa, Ayurveda practices can be included in the treatment menu. For example, The Four Seasons Bali-Jimbaran Bay offers guests Ayurveda-inspired treatments on the menus. While these treatments are not truly authentic in terms of equipment usage, medical treatments, and strong oils, they are all founded on the same Ayurveda founding principles. From massages to scrubs to compresses, The Four Seasons has successfully found a way to offer guests an Ayurveda experience⁶⁴.

Additionally, dosha types can be implemented into the customization of treatments. If you do not have an Ayurvedic professional on site, guests can still take a quiz to help them determine their dosha type if they are receiving treatments based on the principles of Ayurveda. The discovery of the dosha type can decide the oil choice for the treatment. After the treatment, written collateral regarding the dosha type and tips for a balanced lifestyle can be provided to the guest. This can educate the consumer while exciting them about the practices of Ayurveda.

Native American Indian Medicine

Native American medicine has been practiced for over 20,000 years in over 500 indigenous nations and tribes that have existed in North America. Much knowledge, ritual, and tradition is passed down through generations via word of mouth, however some is written down.

Native American Indians believed in the regenerating powers of nature, including forests, mountains, rivers and stones, thought to be embodied with a sacred essence. Native American Indian Medicine shares a holistic view of health in "balance" with every substance in the universe. The beliefs this culture held about nature and the environment align with the sustainable values that are upheld in this report.

Historically, traditional cultures recognized the importance of belief and expectancy within the healing encounter and created complex rituals and ceremonies designed to elicit or foster the

⁶³ While some foods "agree" more with some dosha types than other foods, this advice should not be taken more or less seriously than scientific nutritional research and counsel.

⁶⁴ "Spa-Ayurveda Inspired Treatments." Four Seasons Resort Bali at Jimbaran Bay. 16 May 2009
<http://www.fourseasons.com/jimbaranbay/spa/ayurveda_inspired_treatments.html>.

expectancy and participation of the healer and patient, as well as the community as a whole. The holistic approach to health care was a fundamental component in the spiritual healing rituals of virtually all traditional native cultures⁶⁵.

Native Americans believe that true health comes from a healthy spirit, or someone who has a sense of purpose and follows the “Great Spirit.”⁶⁶ Some diseases are believed to have internal causes, such as negative thinking. Other diseases and illnesses are caused by external factors, such as negative people, germ spirits, or an impure environment.

Some parts of Native American medicine will be difficult to integrate into an Asian spa due to the fact that many treatments involve a Shaman, or Native American medicine man. However, there are a few elements of Native American medicine that can be adapted to receive positive benefits for the guest of the spa.

For example, the spa can consider building a Native American sweat lodge. A sweat lodge⁶⁷ is a dome-shaped building made out of natural materials like wood. The dome shape represents the shape of a womb and symbolizes rebirth. Native Americans believe that through the use of a sweat lodge, they can find spiritual, mental, and physical healing. Skana⁶⁸, the Spa at Turning Stone Resort and Casino in upstate New York, offers a sweat lodge as an interpretive aspect of their Native American concept theme.

Native Americans also use herbal remedies for a variety of maladies. The spa can incorporate treatments with traditional Native American herbal ingredients, such as sage and cedar, to treat specific aspects of the guests’ health. For example, some Native Americans use sage to heal problems of the liver, colon, kidneys, and stomach⁶⁹.

Counseling Center

The counseling center will be a place that guests can go to receive guidance on how to live a wellness-filled life. There will be three components of the wellness center that reflect the three pillars of the wellness center: mind, body, spirit. The three areas of guidance available will be: nutritional, emotional guidance, and soul guidance. The kinds of guidance available will range from emotional counseling to analysis of one's nutrition or fitness regiment and how to make adjustments to live a more healthful and/or sustainable lifestyle.

All guidance given will be guidance that keeps sustainability in mind. In truth, living a healthier, cleaner life will lead to less waste of resources. Living a cleaner life and knowing that we are only taking what we need from the earth can provide mental clarity and a sense of satisfaction with one's self that can radiate to other parts of their life. Therefore, counseling that works towards the goal of

⁶⁵ Levy, J. and Levy, M. (1997, June). Spas and Holistic Programmes: The New Profit Center for the 2000's. Spa Management. Vol. 7, No.3, 74-78.

⁶⁶ “Native American Medicine” < http://findarticles.com/p/articles/mi_g2603/is_0005/ai_2603000543/> 20 May 2009

⁶⁷ “The Native American Sweatlodge, A Spiritual Tradition.” Barefoot Windwalker. 22 May 2009 < <http://www.barefootworld.net/sweatlodge.html>>

⁶⁸ Skana Spa <http://www.skanaspa.com> 22 May 2009.

⁶⁹ Native American Medicine.22 May 2009 < <http://www.faqs.org/health/topics/12/Native-American-medicine.html>>

the cleanest life possible will not work toward the goal of the cleanest environment possible but also a sense of wellness and vitality.

Nutritional Guidance

In the nutritional aspect of the Wellness Center, there will be 3-4 Registered Dieticians. The nutritional specialists will be able to provide the following for guests:

- Basic body composition and metabolic rate measurement.
- Haemaview Live Blood Analysis: Live Blood analysis is seen as a great way to view into total health and well-being. This analysis involves analyzing a blood sample for immune competence, any bacterial, viral or fungal presence in the blood, nutritional assessment, health imbalances that may not be found through other tests and bodily degenerative changes. In general, there are many ailments throughout the body that are missed through other traditional tests or diagnostics are able to be detected through a live blood analysis⁷⁰.
- Listen to concerns about diet and discuss nutrition objectives (examples include: increased energy, weight loss, lessens risk of disease.)
- Create a personal profile that outlines daily dietary requirements based on weight, activity level, body composition and objectives and concerns.
- Create a nutrition plan with meals personalized for the lifestyle of the client.
- Educate on eating sustainably. A “Sustainable Diet” is a plant-based diet that reduces atmospheric emissions and focuses on local foods by eating more produce.

In addition, the specialists would conduct the following classes at different times weekly. It is recommended that classes are held as a private session if only 1-2 guests attend.

“Mindful Eating”: This class would consider the different connections between thinking and eating.

“Power Foods”: This class would educate guests on “power foods” or a variety of foods that have special health powers. Foods⁴ include brightly colored vegetables and fruits, nuts, and whole grains.

Life Guidance

The Life Guidance aspect of the Wellness Center will feature 4-5 certified counselors who have at minimum a master’s degree in their area of interest such as psychology. The following classes would be available weekly or by private appointment. As stated in the Nutritional Guidance section, classes would be encouraged to continue to be held even if there is low attendance. Examples of Life Guidance classes include:

The Power of Listening-Learn how listening carefully to ourselves and others can positively change our outlook and behavior.

⁷⁰ A drawback to offering this treatment is that it requires a physician or licensed nurse to draw blood, and a lab to analyze the sample.

Aging Gracefully- Although aging is often viewed negatively in Western culture, it is a process that should be embraced and revered. In the class, guests will learn how to make the most of their aging process.

Managing Stress – How to cope positively with the stresses in our lives. Rid ourselves of negative stress and learn how to benefit from positive stress.

Strategies for a Healthy Life – Combine advice from the Ayurvedic Center and the Registered Dieticians to discuss general strategies for being in optimal health.

Power of Sleep – Learn the importance of sleep, its effect on every aspect of life, and how we can fit more sleep into our lives.

In addition to the classes mentioned above, the following counseling methods would be available by licensed professionals:

- *Emotional Freedom Technique*: EFT releases blocks and disturbances in the body's meridian energy system-the electromagnetic pathways that run throughout the body - to relieve a wide range of emotional problems. It has been proven that when we have a negative thought or memory, a disruption occurs in our meridian energy system, a sort of 'zzzzt' short-circuit effect happens.
- *Naturopathic Consultation*: Naturopaths use herbs, homeopathy, flower remedies, nutritional supplements, lifestyle correction, exercise, detoxification and the concept of food-as-medicine to help put our health back on track⁷¹.
- *Neuro Linguistic Programming (NLP)*: Established over 25 years ago. NLP is a successful form of modern psychology and counseling. Neuro relates to mind, and how it works using our five senses. Linguistic relates to how people express and experience their world through their use of internal and external language. Program relates to how people behave according to personal programs, which govern their ways of being.

Soul Fitness

The final component of the consultation center would be the Spiritual Guidance aspect. In this component, guests will learn how to be in touch with the final third of the mind-body-spirit triumvirate. Classes in the Spiritual Guidance Center would include:

Hypnotherapy: A form of therapy done through hypnosis. Hypnotherapy is applied for a range of reasons, including changing a patient's behavior, dysfunctional habits, pain-related illness, and personal development.

Meditation: A meditation expert will guide the guests through a variety of yoga meditation techniques in order to lower stress levels, learn relaxation, and achieve spiritual growth.

⁷¹ It should be noted that although a naturopathic approach can be healing, it is most effective in conjunction with a healthy diet and an exercise/fitness plan.

Reiki: Some of the most effective treatments offered are those that can be cross referenced as spa and wellness treatments. Please reference earlier section on "Treatments".

Tai Chi: A series of postures and poses done slowly in order to improve stress management, agility, and balance.

Personnel

Due to the various programs that the Wellness Center can incorporate, a variety of highly trained staff will be needed. The following is a brief summary of personnel required in the Wellness Center:

- Ayurvedic Specialists
- Treatment Specialists
- Ayurvedic Counselors
- Fitness Specialists
- Personal Trainers
- Fitness Supervisors (to oversee Fitness Center safety)
- Fitness Instructors
 - Yoga
 - Pilates
 - Cardio Classes
 - Qi Gong
 - Tai Chi
 - Aqua/Pool Classes
- Registered Dietitians
- Registered Nurses (for Live Blood Analysis)
- Counselors (with at least Master's Degree)
 - Preferably trained in Emotional Freedom Technique
 - Hypnotists
 - Naturopaths

It would be wise to search for candidates that have multiple skills sets. For example, consider employing fitness instructors, who can teach yoga and Pilates, or counselors, who are also trained in hypnotherapy.

In order to maintain the most focused approach possible regarding sustainability, search for personnel who share the same environmental goals that the company does. Having employees who are as committed to improving the longevity of our earth will be also committed to maintaining a level of sustainability in day to day operations. While sustainable practices can be endlessly brainstormed and "instituted", they will never truly become commonplace until the employees believe they can make a difference.

Review of Sustainable Spa Practices

Throughout this study, many sustainable practices have been recommended. The task of becoming an environmentally friendly operation must be taken one step at a time. Below, is a review of ten practices already mentioned and most easy to incorporate:

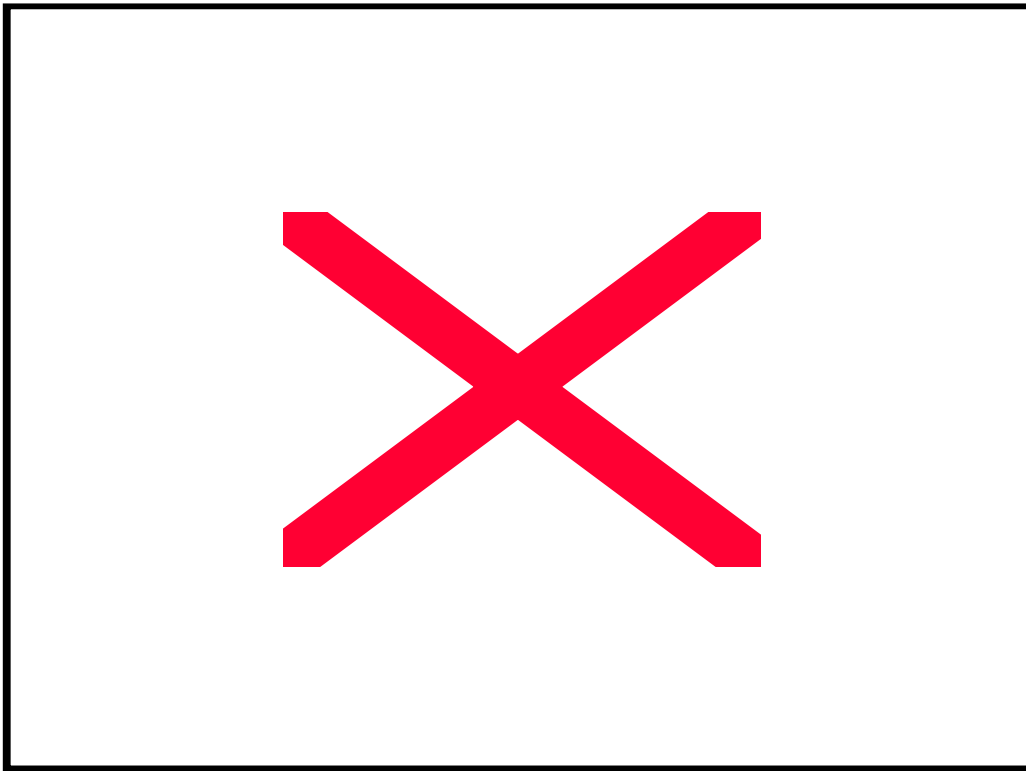
1. Minimize plastic container use and bottled water.
2. Recycle and use recycled materials.
3. Make close to home purchases from suppliers to reduce gas consumption, and emissions.
4. Use natural, biodegradable cleaning products.
5. Use energy efficient appliances and install energy efficient lighting and HVAC systems.
6. Choose compact fluorescent lighting or low wattage bulbs.
7. Look into water-saving shower heads and faucets.
8. Buy products in larger packages (bulk) and opt for refillable containers in individual treatment areas.
9. Require routine maintenance on water and energy systems.
10. Become a member of regional and national sustainable organizations to stay updated on sustainability trends and new research.

Conclusion

Recognizing the effects of sustainability will not only help assure the long-term growth and survival of the spa industry in the Asia South Pacific region, but the long term growth and survival of our planet. Spa operators can help make a difference by moving forward with implementing sustainable practices and focusing efforts on creating an environmentally conscious atmosphere for both guests and employees. This can be accomplished through not only concrete tactics and property management, but by being conscious of the ecological values behind the treatments and services that are offered. While basic spa components will continue to be vital to an operation, the trend towards incorporating wellness into a facility will continue to grow. For this reason, as operators move toward a more sustainable mindset, it is vital to consider the commitment to helping consumers create a more sustainable lifestyle through a focus on their well-being. By eliminating or minimizing, wherever possible, any negative impacts and side effects the spa industry may have on people's health, well-being and our natural environment the spa industry will be able to truly embrace and advance the balance of mind, body, and spirit.

Appendix A: Solar Panel

"Solar Panels." Renewable Energy-Energy from the Sun. 2008. 14 May 2009 <http://www.clean-energy-ideas.com/solar_panels.html>.

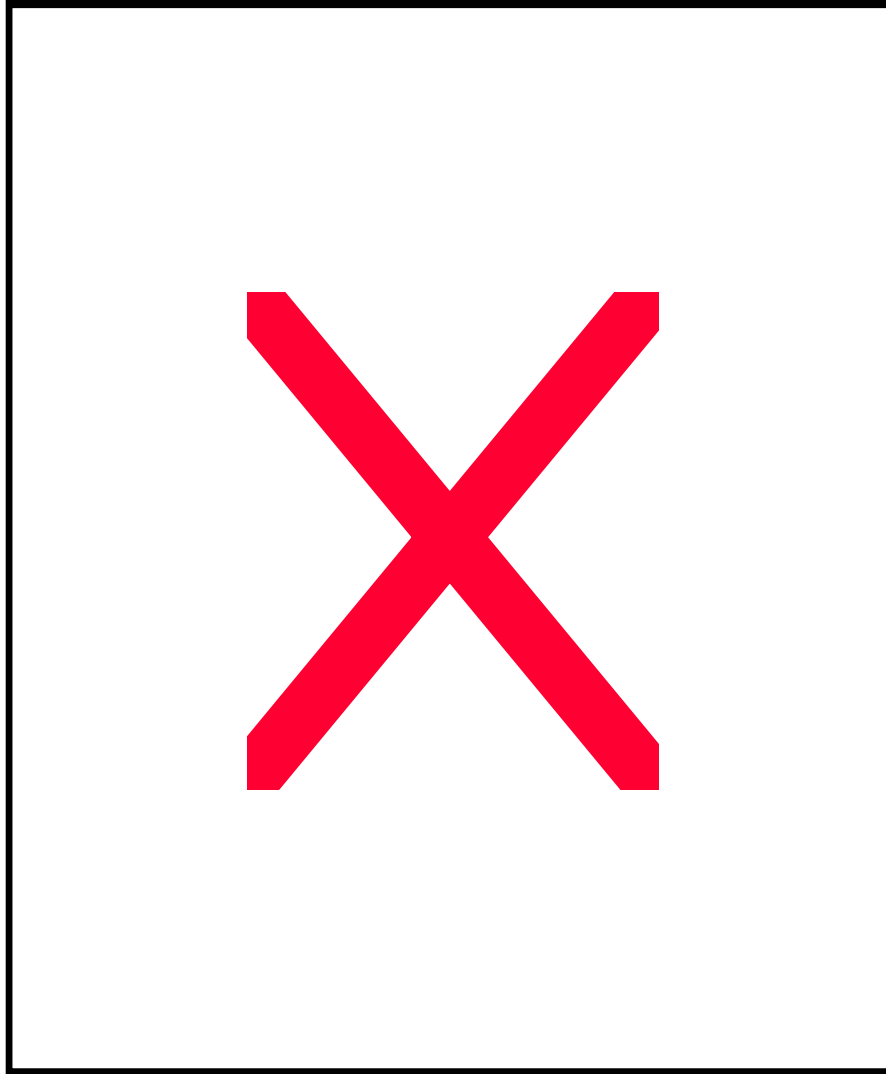


A photovoltaic cell is a non-mechanical device usually made from silicon alloys. Sunlight is composed of photons, or particles of solar energy. These photons contain various amounts of energy corresponding to the different wavelengths of the solar spectrum. When photons strike a photovoltaic cell, they may be reflected, pass right through, or be absorbed. Only the absorbed photons provide energy to generate electricity. When enough sunlight (energy) is absorbed by the material (a semiconductor), electrons are dislodged from the material's atoms. Special treatment of the material surface during manufacturing makes the front surface of the cell more receptive to free electrons, so the electrons naturally migrate to the surface.

When the electrons leave their position, holes are formed. When many electrons, each carrying a negative charge, travel toward the front surface of the cell, the resulting imbalance of charge between the cell's front and back surfaces creates a voltage potential like the negative and positive terminals of a battery. When the two surfaces are connected through an external load, electricity flows.

Appendix B: Wind Turbine

Albright, L., & Vanek, F. (2008). Energy Systems Engineering. New York: McGraw-Hill Companies.



The components of a wind turbine system consist of blades attached to a central hub that rotate when force is exerted upon them by the wind. The hub is attached to a driveshaft that transmits rotationally energy to the generator, which is housed in the *nacelle*. It is very important that the *nacelle* can rotate to catch the wind from whatever direction it is coming. There are two types of turbines: horizontal versus vertical.

Horizontal axis wind turbine blades rotate on a vertical plane around the horizontal axis. Currently this is the only design option available and produced by the major market leaders.

Vertical axis wind turbines have been created in a few prototypes but nothing has been marketed and it still remains an area of research.

Appendix C: Potential Treatments

Treatment	Description	Benefits
Swedish Massage	This massage involves the use of hands, forearms, or elbows to manipulate the layers of the muscles. Active or passive movement of the joints may also be a part of the massage.	The Swedish massage will increase blood and lymphatic circulation, which helps eliminate toxins and bring the necessary amount of nutriment for the human cells.
Aromatherapy Massage	An aromatherapy massage uses rubbing and kneading of the skin with plant oils that give off strong, pleasant aromas.	The use of aromatic essential oil enhances the body, mind and spirit, which helps to increase mental alertness.
Stone Massage	The Stone massage combines a healing human touch with warm-stone therapy. Typically, the stones are heated to a temperature between 125 and 150 degrees.	The warm stone therapy increases heart circulation by the heat of the stone. It has effect of relieving stressed muscles and improving detoxification.
Balinese Massage	Balinese massage is an ancient technique that uses a variety of techniques including skin rolling, kneading and stroking, acupressure and reflexology.	The combination of techniques stimulates the flow of blood, oxygen and energy around the body. A Balinese massage works deeply to soothe damaged tissue, and relieve strained muscles and joint pain.
Lomi Lomi Massage	The word lomi lomi simply means massage and it is a unique healing massage derived from the ancient Polynesians and the master	This massage aids in letting go of old beliefs and behaviors, which are stored in the cells of the body that cause limitations. Through

	<p>healers of Hawaii. The massage consists of long continuous, flowing strokes using the forearm as well as the hands.</p>	<p>the release of energy, tension is released.</p>
<p>Thai Massage</p>	<p>Stretching and pressure point work along the body's energy meridians form the basis of this massage. It is a blend of massage, acupressure, energy work, and gentle yoga stretches. The massage is experienced fully clothed.</p>	<p>It stimulates a smoother energy flow, improves flexibility and at the same time eases tension, especially in tight joints.</p>
<p>Shiatsu</p>	<p>Shiatsu massage therapy is an ancient form of healing that involves applying pressure to various points on the body combined with other massage techniques. It was founded on the traditional Chinese belief in Qi, which is the natural energy that flows through all living things.</p>	<p>The main goal of Shiatsu massage is to bring the body back into its natural balance. Also, a continuous flow of energy is provided throughout the body.</p>
<p>Body Scrubs</p>	<p>A scrub is a spa treatment, which exfoliates the skin on the body using an abrasive product rubbed vigorously and massaged across and into the skin. Then, the product is rinsed away.</p>	<p>Depending on the type of scrub offered, guests can experience different benefits. Commonly, scrubs are designed to exfoliate or to stimulate body metabolism and drain tissue fluid. In some medical spas, scrubs are offered to reduce cellulite and slim fat metabolism.</p>
<p>Hand and Foot Treatments</p>	<p>Pedicures and manicures have become common spa offerings.</p>	<p>Both pedicures and manicures help to soothe and relax. Additionally, proper foot and hand treatment prevents skin problems and generally</p>

		improves the look and feel of the hands and feet.
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