Investigating alternative resort designs for the island of Koh Samui:

A cross-cultural, multidisciplinary environmental design studio

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Introduction

The island of Koh Samui is located approximately 600 kilometres south of Bangkok in the Gulf of Thailand and is the country’s third largest island. About 150 years ago migrants from southern China first established coconut farming on Koh Samui and which up until a few years ago was the main economic activity of the island. Since then tourism has become the principal source of income. Prior to the airport opening in 1989 the only way one could get to Koh Samui was by a two-hour ferry ride from the mainland, and as a result tourism was limited primarily to adventurous backpackers. Since the airport opened tourism, and associated development, has been rapid and extensive, particularly in the towns of Ban Chaweng and Ban Lamai on the east coast of the island. Currently people from mainland Thailand and expatriate westerners own many of the tourism facilities (such as resorts, restaurants and bars). Another consequence of tourism has been an influx of less affluent people from mainland Thailand and migrants from places such as Myanmar (many who are in the country illegally) who have come to find work in the tourism industry. Because of these changes, and particularly due to degradation in the island’s environment, fostered by the rapid shift from an agrarian to a tourism economy, many local residents are now complaining that some of the tourism developments that are being built, and lack of environmental management associated with these developments, is unacceptable.

In 2000, the author undertook a research project on Koh Samui to explore this issue by looking at how local residents in the town of Ban Chaweng felt about the “suitability” of a range of both built and natural features within the town. The results of that study provided a wealth of information with respect to local perceptions and attitudes in reference to various forms of tourism development. This experience, and the findings from that research, inspired the author to later involve his students and his Thai academic colleagues in conducting a cross-cultural, multidisciplinary environmental design studio to investigate possible alternatives to the design of tourism facilities on the island, specifically resort developments. The aim of the studio was to produce designs for various types of resorts that might be more environmentally and socially sustainable to that which is occurring on the island at present. Sustainable tourism is being defined here as tourism that is concerned with balancing care of the environment with both the needs and wants of local communities and tourists over time. In an effort to help stem the rising tide of environmental degradation that is becoming all too apparent on the island, principles of sustainable environmental design and sustainable tourism would be integrated and applied to the design of future resort development. The aim was that student design proposals might serve as models for future resort development both on the island and in other coastal areas in Thailand that are being impacted by poorly designed and/or managed tourism development.
Therefore, faculty members and students from both Kasetsart and Silpakorn universities in Bangkok joined with staff and students from The University of Melbourne to undertake a design studio to propose a variety of resorts for two sites on Koh Samui. Students from different cultures from all three universities, studying various environmental design disciplines - landscape architecture, architecture, urban design - were given an opportunity to work within a team framework to address a critical design issue facing many developing countries in South East Asia. Several of the students from the University of Melbourne were international students from various countries including Singapore, Malaysia and India, as well as Australia. Students from the Thai universities were all from Thailand. A total of 34 students and eight faculty members participated in the studio project (see accompanying list of participating students and staff).

The aim of the studio was to produce a series of landscape and architectural plans for five different resorts, each with a different theme, which could serve as models of sustainable resort development for the island. The students were divided into five groups with each group being assigned one of the five resort types:
- a backpacker accommodation
- a mid-price resort mainly for the Thai domestic market
- a five-star eco-health resort
- a family resort with a focus on children
- a resort for people with various physical disabilities

**Preliminary Research**

Prior to the Melbourne students travelling to Thailand, they were involved in preliminary research and seminars that explored the tourism markets associated with their assigned resort theme. The aim of this market research was to help them understand the needs and desires of likely users of their resorts. The students’ also researched principles of sustainable environmental design that could be applied to resort development and that pertained to the various disciplines they were studying. All groups prepared power point presentations of the findings to present to the other students groups. Student groups in Thailand, in addition to collecting this information, also researched vernacular architecture associated with Koh Samui and biophysical characteristics of the island itself.

The Melbourne students then travelled to Bangkok and students from all three universities met at Silpakorn University to present to each other the results of their independent research. At that time the Melbourne University student groups were combined with their Thai counterparts, according to the resort type they had been assigned prior to travel to Thailand, to form larger groups of six to seven students per group. The meshing of cultures, and the different ways the students understood their assignments, proved interesting from an educational perspective. At first, the Thai and Melbourne University students were reluctant to interact with
each other. Although all the Thai students spoke some English, language was no
doubt an initial obstacle to communication. However, within a day or two, everyone
was working well together and by the end of the project the students were all good
friends.

Design Phase

After the initial introductory meetings and presentations in Bangkok, students
and staff from the various universities travelled by a combination of train, bus
and boat to Koh Samui. Reasonably priced accommodation had been previously
arranged at a small resort on Mae Nam Beach on the north coast of the island.
Students were told they would, over the proceeding seven days, be responsible for
producing complete concept design packages for proposed resort developments
that would fit within the context of their respective resort theme, including site
plans, landscape architectural and architectural drawings, as well as written
marketing and sustainability strategies.

The open-air dining room at the resort where the students were staying
functioned as their studio space during the day. Here they worked on developing
concepts for their proposals using a variety of graphic mediums; however, all the
work done on site was executed using freehand graphics techniques – no computer
graphics. At the end of each day the groups presented their work for discussion and
critique by staff members. Sometimes local people familiar with various aspects of
tourism on the island were invited to participate in these critiques.

As mentioned, two study sites were selected, each different in landscape
color and located in different parts of the island. The site assigned to the two
groups who were designing the backpacker accommodation and the resort for people
with disabilities was a seven-hectare parcel of land in the heart of Ban Chaweng,
the most highly developed part of the island (Figure 1). This essentially level sandy
site was, except for a few trees and some discarded construction materials, devoid
of any significant site features. The site was bordered on one side by a grove of
Coconut Palms and an existing resort on the other and could be accessed either
from the main beach road or from the beach itself.

Figure 1: Ban Chaweng site location
The other site was located at the west end of Mae Nam Beach, in the northern part of the island near where the students were staying. The student groups designing the up-market eco-health resort, the family resort and the mid-priced domestic resort were assigned this site. This site was vegetated with a remnant Coconut Palm plantation and an assortment of native vegetation and contained numerous rock outcrops and small pockets of beach. The combination of natural features and undulating topographic at this site suggest a stereotypical "tropical island scene" (Figure 2).

After a week on the island, the students returned to Bangkok to work at Kasetsart University in producing their final drawings. All groups worked to a prescribed drawing format so that the final product could be collated into an A3 booklet that had a reasonable degree of visual and textual cohesiveness. Students worked long hours each day to complete all the drawings in one week. On the last day, a well-attended public exhibition was mounted at Kasetsart University.

Assessment Criteria

The final designs were assessed with an emphasis on their environmental, social and economic sustainability, functionality (with respect to their specific user groups) and aesthetics - i.e. they had to be visually acceptable to both local residents and resort guests. The following assessment criteria were used in assessing the student work.

*Environmental Sustainability*:

Considerations of environmental sustainability included issues such as:

- passive cooling and ventilation - (an important consideration in a tropical climate).

- use of alternative energy sources such as solar and wind energy.

- conservation of water and other natural resources.

- minimising disruption of sites and attention to conservation of site features.

- increasing net biodiversity on the sites.

- use of indigenous plant materials in the landscape.

- use of building materials that have low embodied energy.

*Figure 2: View looking toward the Mae Nam site location*
Social Sustainability:
Social sustainability was concerned primarily with the harmonious integration of the resort, and resort guests, with the local community's environmental perceptions and values. Results of the author's prior research on the island suggested that the local community were sensitive to social issues and the suitability of various types of tourism development in terms of the local community. Many features associated with tourism development, such as some existing resorts, bars, massage parlours, etc., were described, in the author's prior research (Green, 2003, by local residents as highly "unsuitable" for the island. That data also showed a remarkably high degree of consensus with respect to what local residents considered suitable and what they considered unsuitable. The students were briefed on the results of this prior research so that they could reflect design attributes related to those existing resorts considered by residents to be "highly suitable" and to avoid design attributes associated with "unsuitable" developments. Social equity issues were also of concern including the provision of public access to the beach through the resort. In Chaweng it was pointed out by respondents in the author's prior research that locals only had a 20-metre alleyway from which they were allowed access to the beach, the remainder of the three kilometre beach road was dominated by resorts that bared local residents from access.

Economic Sustainability:
An important consideration was the economic viability of the resort. The importance of economic sustainability is also related to social sustainability in that local residents should be assured, as much as possible, that they might find continued and relatively secure employment, if the resorts were actually built, which they weren't. Some of the resorts, such as the eco-health resort, were designed to be viable with low demand and low room occupancy. This was feasible due to the exclusivity of the resort and associated high room rates. Exclusivity was achieved by selection of a secluded site in a beautiful natural setting and the use of high quality materials and workmanship in the construction of the resort. The ability to incorporate principles of sustainable design in a five star resort and still make it economically viable is no small task. In contrast, the Funkey Monkey House (designed for backpackers) relied on high room occupancy rates and turnover and corresponding low construction costs. The students had to develop marketing strategies that would be realistic so that economic sustainability of their resorts could be realised.

Aesthetic and Design Considerations:
Results of the author's prior research on the island, as discussed above, suggested that local residents of Ban Chaweng considered development that incorporated design attributes associated with vernacular Thai architecture as more "suitable" than "western" styled architectural forms. Keeping this knowledge of
the local’s predilection for vernacular forms in mind, the students had to decide the extent to which they would simply reproduce traditional styles or create new and innovative forms. Most students decided to strike a balance by aiming for a contemporary interpretation of traditional forms. The other major design consideration had to do with blending the resort structures and landscape with the natural environment and minimising visual impact to the surrounding area.

**Design Outcomes**

Following is a brief description of the five resort designs proposed by the students.

**Funkey Monkey House Resort:** (Figures 3, 4 and 5).

This resort was designed for young (18 to 27 year olds) international backpackers. The innovative concept of this resort is that guests climb to their elevated treetop accommodations via a series of connecting platforms, rope bridges and ramped walkways. Sleeping and leisure spaces were all elevated up to the height of the top of the numerous Palm trees. The raised accommodations were grouped by various sizes with differing room sizes and flexible bedding and furniture arrangements. A variety of on-ground entertainment facilities were also provided including a bar, pool, restaurant, game area, etc. The design principally responded to issues of environmental suitability by incorporating locally produced construction materials and optimised natural forms of lighting and cooling in the design.
Bann Hai Ngam Resort (Figure 6)

This resort caters to Thais who want an affordable holiday in a natural environment that embraces aspects of Thai culture and lifestyle. The aim was to cater to the desires of Thais on holiday by providing culturally appropriate activities and spaces for them to enjoy. A range of activities that both adults and families could participate in including traditional Samui beach barbeques (Kin Kaw Hor), karaoke and movies in Thai language, as well as daytime activities such as water sports and nature walks were incorporated in the design. A novel feature of this resort is the low energy consumption evaporative cooling system the students designed. Based on the traditional porous “hai” jug (hence the resort’s name) this innovative cooling system was to replace more conventional, energy consumptive air conditioning systems.

Thamachat Resort (Figure 7, 8 and 9).

This resort combined health resort activities such as swimming, massage, yoga, aromatherapy and herbal steam rooms with activities designed to allow guests to interact with the natural environment. Activities such as nature walks, scuba diving and kayaking would be offered. While still being a five star resort one of the principal aims of the resort was that it would have an educational function, educating guests to the local natural environment and related issues of environmental sustainability. For example, much of the produce used in the restaurant will be organically grown on-site.

Nam Nueng Family Resort (Figure 10).

This family resort was divided into two parts – one part secluded and tranquil and the other active and open. The more active spaces were focused on children whilst the tranquil spaces were to cater more for adults. The children’s area will cater to a variety of fun activities associated with a series of interconnected swimming pools and pieces of sculptural play equipment. The more passive adult oriented part of the site was designed for relaxation allowing one to enjoy ocean views while relaxing in a spa or receiving a massage in the sala. A nature trail linking the children’s and adult’s areas together was also planned. In addition, a childcare facility is to be provided. Issues of environmental sustainability were addressed with materials low in embodied energy and by employing design elements to trap...
sea breezes to provide passive cooling and ventilation. Various alternative energy sources such as on-site solar power generation were also designed into the resort.

**Pikam Buri Resort** (Figures 11).

This resort caters specifically for individuals with various physical disabilities, particularly the mobility and visually impaired. The resort was designed to allow those who have previously been hampered by lack of necessary specialised facilities to enjoy a tropical island resort. The unique design of this resort incorporates landscape elements that cater to all the senses instead of just relying on visual stimuli to help people orient themselves within a barrier free site. The sound of running water, the smell of fragrant plants and changing textures incorporated in paving are just some of the many devises used to let guests, particularly blind guests, know where they are and where they are going. A range of physiotherapy and hydrotherapy facilities was also incorporated into the design of this resort. Issues of sustainability, environmental and social, were addressed through the careful selection of building and landscape materials and waste treatment facilities.

**Conclusion**

On Koh Samui tourism has provided many people with much needed income. However, the environmental and social impact of poorly designed and managed tourism development is a growing concern for both local residents and those who rely on tourism for their livelihood. The signs of environmental degradation are becoming all too conspicuous. Garbage is piling up in the streets, pollution is diminishing water clarity and visual plight due to ugly, poorly designed, constructed and culturally unsuitable architecture is increasing at an alarming rate. If the environmental and cultural attributes that attract tourists to the island in the first place are destroyed then nobody wins. Therefore, environmentally and socially sustainable tourism development is essential if there is even a chance of achieving some balance between care for the environment, the needs and values of local residents and the long-term economic viability of tourism on Koh Samui. The sustainable tourism design studio discussed in this article attempted to illustrate how coastal tourist resorts could be designed in a sustainable manner so as not to negatively disrupt the pre-existing environment and community.

*Figure 11: - Pikam Buri Resort Accommodation Units and Central Facilities*
This cross-cultural, multi-disciplinary design studio is seen as one means of raising the awareness of students, the public and government of the need for incorporating principles of sustainable environmental design into the design of future tourism development. As quoted in a recent Bangkok Post article4 “If the vision of Dr. Green and his students is taken seriously, perhaps the notion of sustainable resorts-vacation sites that don’t pollute, destroy, or disrupt either the natural environmental or local community will no longer seem an oxymoron”.

References


3 Chindahporn, (2001 – February). Operation Koh Samui. Art 4d, Published by Corporation 4d Ltd., Bangkok

4 “Island Initiative” Bangkok Post (February 1, 2001). In the Outlook Section of the Bangkok Post.

List of Participating Students

Backpackers Resort: Funkey Monkey House Resort (Figure 1).

- Manju Takalkar – Architecture at the University of Melbourne
- Ean Ne Yap – Architecture at the University of Melbourne
- Shivarudraiah Suresh – Master of Landscape Architecture at the University of Melbourne
- Dopathham Ratanasupa – Architecture at Silpakorn University
- Jaroophan Banjongpark – Architecture at Kasetsart University

Mid-Range Resort: Baan Hai Ngam Resort (Figure 2).

- Leighton Thomas – Architecture at the University of Melbourne
- Laura Jeanette Cronin – Architecture at the University of Melbourne
- Jagdish Kancharla – Master of Landscape Architecture at the University of Melbourne
- Makakrai Suthadarat – Urban Design at Silpakorn University
- Kanyarat Thanasomboonkit – Urban Design at Silpakorn University
- Cha-V Bussayarat – Architecture at Kasetsart University
- Supat Vongruttana – Architecture at Kasetsart University
Family Resort: Nam Nueng Family Resort (Figure 4).
James Wilson – Architecture at the University of Melbourne
Michelle Yik – Master of Urban Design the University of Melbourne
Eva Poon – Master of Landscape Architecture at the University of Melbourne
Tikhamporn Loydsakdiwong – Architecture at Silpakorn University
Nopamas Chuachatthai – Urban Design at Silpakorn University
Kesinee Wattanaveerachai – Architecture at Kasetsart University
Wichuda Chatananondh – Architecture at Kasetsart University

Eco-Health Resort: Thamachart Resort (Figure 3).
Christopher Peck – Architecture at the University of Melbourne
Toby Lauchlan – Architecture at the University of Melbourne
Kimberly Pannan – Architecture at the University of Melbourne
Tracey O’Connor – Master of Landscape Architecture at the University of Melbourne
Chantalee Wongkam – Architecture at Silpakorn University
Pechladda Pechpakdee – Urban Design at Silpakorn University
Pongpan Sihabandit – Architecture at Kasetsart University

Resort for People with Disabilities: Pikarn Buri Resort (Figure 5).
Sarah Ball – Architecture at the University of Melbourne
Michael Holt – Master of Urban Design the University of Melbourne
Kate Heron – Master of Landscape Architecture at the University of Melbourne
Phakpum Arttagonsiripo – Urban Design at Silpakorn University
Alexis Assavathan – Architecture at Kasetsart University
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