CHAPTER 2

Review of Related Literature and Studies

This chapter reviews the related literature and studies, which consist of aspects of ecotourism, accommodation for ecotourism and its design criteria. The aim here is to identify the relationship between architecture and its design influenced from ecotourism products such as accommodation in Doi Suthep-Pui National Park of Thailand. For the previous studies six studies were chosen from different geographic locations.

2.1 Critical Analysis/ Discussion of the Theory

2.1.1 Ecotourism

The literature review continues with a definition of ecotourism, introducing its environmental, social, and economic effects on the host areas. Based upon Nicoara's (1992) statement, nature-based tourism, currently called ecotourism, was launched in the 1980s and has become one of the fastest growing segments of the world tourist industry. Swarbrooke (1999) advanced the idea that the term ecotourism is combined with other terms like soft tourism, alternative tourism, responsible tourism and nature tourism. Per National Ecotourism Strategy of Australia (Allcock et al. 1994) ecotourism is nature-based tourism that involves education and interpretation of the natural environment and is managed to be ecologically sustainable. This definition recognizes that 'natural environment' includes cultural components and that 'ecologically sustainable' involves an appropriate return to the local community and long-term conservation of the resource. The International Ecotourism Society (1991) said ecotourism is about uniting conservation, communities, and sustainable travel. Ecotourism is consistently deemed to be beyond tourism to natural areas (Ross & Wall 1999). The World Conservation Union's Commission on National Parks and Protected Areas (1991) suggested that ecotourism is environmentally answerable travel and travel to untouched natural areas. The travelers can relish and admire nature including any other cultural exhibits that increase

11

conservation. This sort of tourism has scant visitor impact, and offers the profitable active socio-economic participation of residents. Additionally, in Scheyvens' (1999) point of view, ecotourism is the activity that can relate to both cultural and environmental tourism. It yields benefits to the residents who are a critical part of the activity. Like Whelan's (1991) concept ecotourism can be a sustainable and slightly unsophisticated alternative. It offers employment and revenue to local communities and needed foreign currency to federal governments, thus enabling the continuing existence of the natural resources, which are based on being protected.

Fennell (1999) noted that ecotourism is a sustainable form of natural resource-based tourism that highlights primarily experiencing and learning about nature, and which is ethically managed to be low-effect, non-consumptive, and locally oriented in control, benefits and scale. It typically takes place in natural boundaries, and should make a major contribution to conservation or preservation in those locations. The true ecotourism can be addressed in the following six principles.

  i.   Ecotourism entails a type of use that minimizes negative impacts to the environment and to local people.
 ii.   Ecotourism increases the awareness and understanding of an area's natural and cultural systems and the subsequent involvement of visitors in issues affecting those systems.
iii.   Ecotourism contributes to the conservation and management of legally protected and other natural areas.
 iv.   Ecotourism maximizes the early and long-term participation of local people in the decision-making process that determines the kind and amount of tourism that should occur.
  v.   Ecotourism directs economic and other benefits to local people that complement rather than overwhelm or replace traditional practices (farming, fishing, social systems, etc.)
 vi.   Ecotourism provides special opportunities for local people and nature tourism employees to utilize and visit natural areas and learn more about the wonders that other visitors come to see.

    (Wallace & Pierce 1996)

2.1.2 Alternative Tourism

The common feature of 'alternative tourism' is the suggestion of an attitude diametrically opposed to what is characteristically viewed as mass tourism. Alternative tourism is often presented as existing in fundamental and socio-cultural impacts of people at leisure in the promotion of radically different approaches to tourism. Examples include ecotourism, green tourism, nature-oriented tourism, soft tourism, pro-poor tourism and defensive tourism. The nature of ecotourism defined by Mieczkowski (1995) are as follows

i.   a form of tourism opposed to mass tourism

ii.   a philosophical orientation toward nature

iii.   tourists characterized by motivation

iv.   touristic practices

v.   a touristic product

vi.   levels of technology

vii.   solutions of planning

viii. an approach to local, regional, national and international politics

ix.   a strategy for sustainable development

However, in general sense, alternative tourism can be broadly defined as a form of ecotourism that sets out to be consistent with natural, social, and community values that contribute more conservation understand, and appreciation of the environment and culture and maximum satisfaction to both guests and hosts (Wearing & Neil 2008). Some important forms of alternative tourism are described below

i.   Nature-based Tourism: Tourism entirely based on nature such as trekking, mountain climbing, surfing, rafting and other many activities including adventure tourism are known as nature-based tourism in which tourists should respect the intrinsic value of nature.

ii.   Cultural Tourism: Tourism based on various cultural elements such as arts, music, dance, language, songs, cultural and religious heritages, traditional customs, skills and handicrafts of indigenous and local people that visitors enjoy and promote.

iii.   Wildlife Tourism: Tourism based on various wild-species in terrestrial, marine and areal which tourists recognize the real value of these biological assets in ecosystem of the planet.

iv.   Educational Tourism: Tourism run by educated and responsible tourists about the importance of nature, culture and ecosystem and support for nature conservation.

v.   Agro-tourism: Tourism run basically by natural attraction on private farms comprising various traditional and indigenous farm activities like cattle herding, cowboy activities, sheep searing, dairy farming gardening, horse riding and other many more.

vi.   Scientific Tourism: Tourism primarily based on scientific research and other various study purposes which help to collect scientific information to acquaintance the current state of the field and support for the betterment.
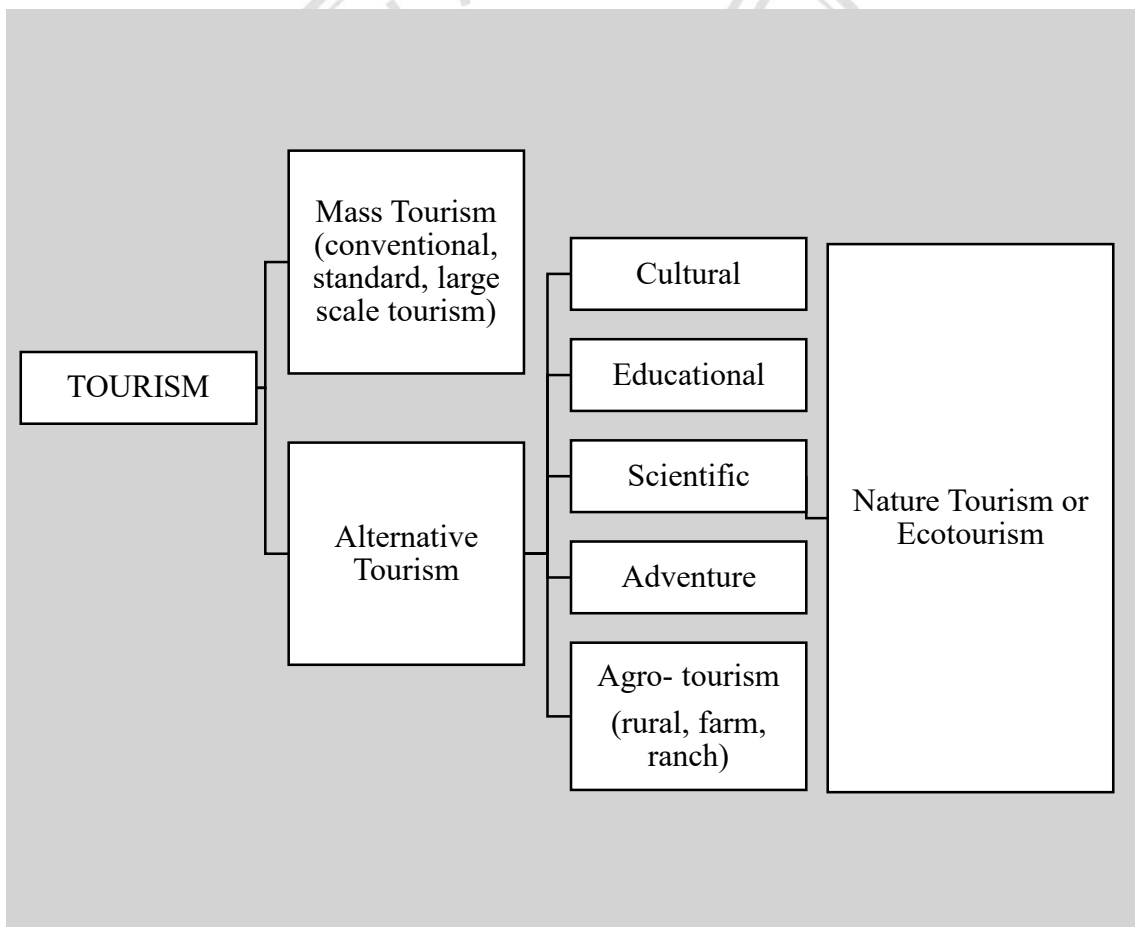

Figure 2.1 Types of tourism (Wearing & Neil 2009)

These all alternative tourisms respect the principles of ecotourism because the concept of alternative tourism came into practice against mass tourism to practice responsible tourism based on conservation and development principles. Furthermore, the following table shows the basic difference between mass tourism and ecotourism.

Table 2.1 Major differences between ecotourism and mass tourism

Mass Tourism	Ecotourism
Large scale, Large group	Small Scale, Small group
Mass building of infrastructures	Small building of infrastructures
Informal relation, Insensitive to local people and cultures	Formal relation with people and place
Dominant economic activities (capitalistic)	Responsible, social and environmental welfares
Unspecific in location	Very specific in location
Sectorial	Holistic

Like everything, ecotourism cannot be escaped away from its demerits. So, some scholars are very critical to ecotourism and its negative impacts expected because it is based on so sensitive and pristine ecological and socio-cultural realm. Per McLaren (1998), "At its worst, eco-travel or ecotourism is ecologically destructive, economically exploitative, culturally insensitive, and green-washed travel." More clearly the following table shows both positive impacts or benefits and negative impacts of ecotourism

Table 2.2 Negative and positive effects of ecotourism (Neth 2008)

Types of Impacts	Positive Impacts	Negative Impacts
Environmental	Provides Maximum incentive for conservation of natural areas Advocates for conservation with development - Educate both tourists and local about environmental ethic	- Indirect damage of vegetation - Decay of habitats - Disturbance of wildlife - Pollutions air, noise, and waste - Invasion of new species -Massive commercialization of natural resources

Table 2.2 (Continued)

Types of Impacts	Positive Impacts	Negative Impacts
Economic	-Major means of foreign earnings -Balance economic development with proper income distribution in local communities -Increase job opportunities for local people -Sustainable infrastructures building -Promoting of local economy .	-Leakage of income -Inflation -Increase unhealthy economic competition and economic gap among locals .
Socio-cultural	-Promotion and conservation of various local cultures, traditions, arts, music, and other historical and religious heritages -Education for the importance of culture -Diversification of cultural activities -Cultural exchange	-Risk of cultural degradation due to western invasion -Various social problems -Effect of seasonality -Undesirable commercialization of cultural and religious asset -Crowd and undesirable behavior of visitors .

2.1.3 Natural Conservation

Natural conservation is the protection, maintenance, management, sustainable use, restoration and enhancement of the existing in, or formed by nature, non- urban; also, incorporates cultural aspects. And, is the wise management and utilization of natural renewable resources in a sustainable manner to ensure the maintenance of biodiversity. (Wearing & Neil 2009). Nature Conservation is the wise management and utilization of natural renewable resources in a sustainable manner to ensure the maintenance of biodiversity. Ecotourism typically involves travel to destinations where flora, fauna, and cultural heritage are the primary attractions.

One of the goals of ecotourism is to offer tourists insight into the impact of human beings on the environment, and to foster a greater appreciation of our natural habitats. Responsible ecotourism includes programs that minimize the negative aspects of conventional tourism on the environment and enhance the cultural integrity of the local people. Human life is dependent to nature so the environment should be free from pollution. Natural conservation is very important because we could run out of natural resources, drinking water and healthy food so we need to conserve it for present and future generations and for our freedom and to control raising price and climate change and violent weather.

2.1.4 Tourism in Protected Areas

Protected area or National Park is an area of land that is owned and protected by a national government because of its natural beauty or its importance to history or science. Boo (1990) found that tourism to protected areas of breathtaking natural scenery, uncommon ecological interest, and pristine untouched areas has dramatically increased in the past twenty years. Boo's (1990) view supports Keller's (1987) statement that an area that can keep up the manipulation of the tourism decision-making, and confine evolution of growth in tune with the resources, investment, manpower, and culture from within must achieve the economic, social and ecological advantages.

Ceballos-Lascurain (1987) explained ecotourism as any traveling to rather undisturbed or unspoiled natural areas with the given purpose of learning, perceiving, and relishing the views. Moreover, wild flora and fauna, including any existing cultural demonstrations, are observed in these areas. This type of tourism varies from a short walk through a forest

17

to surveys and studies of natural attributes in remote areas. It also has rapidly altered from an avocation for a select few to an activity followed by many. People affiliated with the travel industry are observing an increasing need for nature tours and other kinds of extraordinary trips to off-beat destinations, which is now a part of international and national tourism. National parks, reserves, and wildlife refuges in some countries are attracting growing tourist attention for education and recreation. Yet, the effects of nature tourism on the zone's protected areas or the economic potential of that specific market are widely reported. Those analyses will be vital to park managers, government officials, and tour operators who look to capitalize on their potential without bringing about any danger to the special characteristics of natural areas.

2.1.5 Accommodation

Accommodation is any facility that regularly or occasionally provides overnight accommodation for tourists (Medik 2003). Accommodations are the place of stay for tourist in terms of ecotourism. Ecotourism Accommodation is small scale and locally owned however some larger scale developments have adopted a sustainable attitude are working to rehabilitate their site or the surrounding land. Per Beeton (1998) accommodation which is sustainable and green should tend to reflect character of the region by utilizing historic buildings or precincts, focusing on farm stays in rural farming districts, wilderness lodges near national parks, seaside cottages in fishing villages and so on. A high guest-host interaction enables green accommodation providers to encourage their guests to engage in sustainable activities through the range that they offer, the tour operators they recommend or merely by example.

Due to dispersed nature of areas of interest of eco tourists, accommodation need not to be clustered around major attractions. Spreading the accommodation also spreads the benefits and minimizes the impacts. Employment opportunities for the local community are a central part of green accommodation, particularly in the ecotourism context, as well as providing other economic opportunities for the local community such as purchasing local goods and services. Accommodation or lodging is by far the largest and most ubiquitous subsector with the tourism economy. With few exceptions, tourist require a location where they can rest and revive during their travels through, or stay within, a tourist destination.

2.2 Architecture and Built Environment of Accommodation in Ecotourism

Built environment is a reference to buildings, dwellings, structures, utilities, roads and services which enable people to live, work and play, circulate and communicate and fulfil a wide range of functions built by humans (Wearing & Neil 2009). Whereas architecture is defined as the art and science of designing components of built environment. There are different components in built environment which are products, interiors, structures, landscapes, villages or cities, region and whole earth. Scoping down to this research, only structures and landscape are considered. Built environment is explained as part of the social products that contribute to the interaction between society and its surrounding environment towards being sustainable through using spaces, materials and renewable source of energy in a sustainable way. Accommodations are considered as the components of built environment in this research. Built environment include everything from simple housing to entire cities, and even man-made outdoor environments. Examples would include cities, buildings, urban spaces, roads, parks, etc.

Table 2.3 Potential ecotourism building types by category (Wearing & Neil 2009)

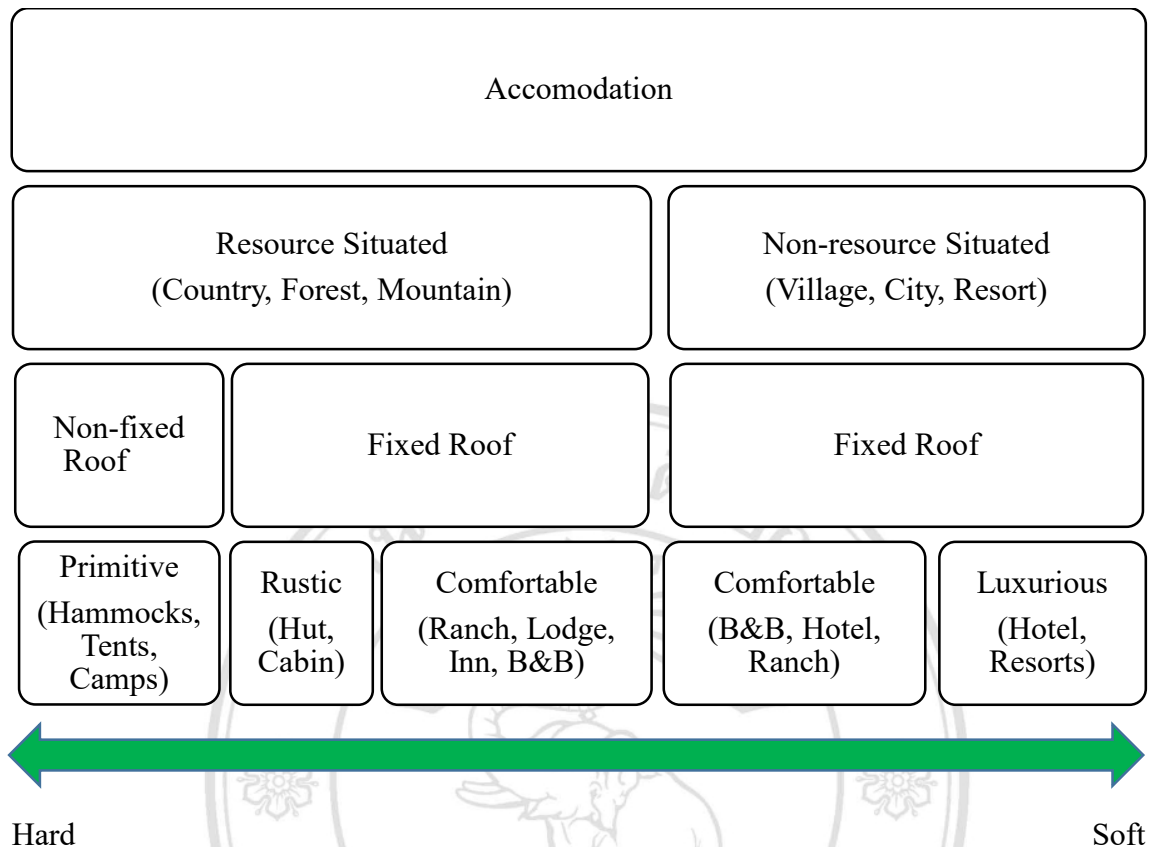| Vernacular building types	Historical building types	Contemporary structures	Portable and low-impact structures
Indigenous structures Grass huts, mud structures, caves, elevated halls, house boats, reed platforms and buildings, yurts, tree platforms, ice houses, teepees, cliff dwellings, stick houses	Developed vernacular Colonial architecture, residentially derived styles, commercially developed styles Military architecture, colonial architecture, ecclesiastical architecture, monuments, industrious buildings, palaces, and great homes	Prefabricated structures masonry, glass fibers, reinforced concrete, rigid tents, inflatable structures, tourism cottages colonies, inns, guest houses, homes	Rigid tents, collapsible tents, elevated huts, inflatable structures, vehicles, jungle hammocks

```
┌─────────────────────────────────────────────────────────────────┐
│                         Accomodation                              │
└─────────────────────────────────────────────────────────────────┘

┌──────────────────────────────┐    ┌──────────────────────────────┐
│      Resource Situated        │    │     Non-resource Situated     │
│  (Country, Forest, Mountain)  │    │    (Village, City, Resort)    │
└──────────────────────────────┘    └──────────────────────────────┘

┌──────────┐ ┌──────────────────┐    ┌──────────────────────────────┐
│Non-fixed │ │    Fixed Roof    │    │          Fixed Roof           │
│Roof      │ │                  │    │                               │
└──────────┘ └──────────────────┘    └──────────────────────────────┘

┌──────────┐ ┌────────┐ ┌──────────────┐  ┌──────────────┐ ┌──────────┐
│Primitive │ │Rustic  │ │ Comfortable  │  │ Comfortable  │ │Luxurious │
│(Hammocks,│ │(Hut,   │ │(Ranch, Lodge,│  │ (B&B, Hotel, │ │(Hotel,   │
│Tents,    │ │Cabin)  │ │  Inn, B&B)   │  │   Ranch)     │ │Resorts)  │
│Camps)    │ │        │ │              │  │              │ │          │
└──────────┘ └────────┘ └──────────────┘  └──────────────┘ └──────────┘
```

Hard   Soft

Figure 2.2 Ecotourism accommodation spectrum (Wight 1993) (Fennel 2008)

2.3 Types of Accommodation in Ecotourism

Per Beeton (1998) accommodations are humanly made, arranged or maintained to fulfill human purpose needs, the place where people can stay and enjoy. These places may be temporary or permanent like campgrounds, resorts, hotel and homestay. In terms of ecotourism, accommodation is such who minimizes the use of energy and support the conservation of nature.

2.3.1 Campsite

A campsite or camping pitch is a place used for overnight stay in the outdoors by making tents and camps. Those are an area where an individual, family, group, or military unit can pitch a tent or park a camper; a campground may contain many campsites. Like hotels, regulated camping's or campgrounds are classified per a star-rating system, from one star to four stars, per their amenities. There are two types of campsites (Campsites 2015).

    i.   An impromptu area (as one might decide to stop while backpacking or hiking)

    ii.   A dedicated area with improvements and various facilities

20

Dedicated campsites, known as Campgrounds, usually have some common amenities.

i. Fireplaces or fire pits in which to build campfires (this can be a circle of rocks, a metal enclosure, a metal grate, a concrete spot, or even just a hole)

ii. Road access for vehicles

iii. A gravel or concrete pad on which to park a vehicle

iv. Picnic tables

v. Marked spaces indicating a boundary for one camper or a group of campers

vi. Reservations to ensure there will be available space to camp

vii. Utility hookups, such as electricity, water, and sewer, primarily for the use of travel trailers, recreational vehicles, or similar

viii. Raised platforms on which to set up tents

ix. Piped potable water etc.

2.3.2 Homestay

Homestay is a generic term used to describe a form of holiday that involves staying with the host's family. While the "Bed and Breakfast" concept also involves the guest staying within the host's dwelling, the homestay is characterized by the guest's participation in the host's way of life (Hamzah 2008).

Beeton (1998) says homestay is a form of tourism that allows visitors to rent rooms from local families. It is sometimes used by people who wish to improve their language skills and become familiar with the local lifestyle. Some countries encourage homestay as a means of developing their tourism industry. Tourist or participant allows the host family to earn an income. Homestay accommodation is a term with specific cultural associations.

For instance, in Australia the term is particularly associated with farmhouse accommodation, and in the United Kingdom, it is particularly associated with the English as a Foreign Language Sector. As a generic term, it is used variously to refer to types of accommodation where visitors pay directly or indirectly to stay in private homes.

Homestay embraces a range of accommodation types including farm stay accommodation, host families, small hotels and bed and breakfast. Accommodation such as guest houses, boarding houses, lodging houses whose terms are sometimes used synonymously with hotels and bed and breakfasts are also included as homestay establishments.

21

Table 2.4 Variants on the homestay concept (Pazin 2004)

Country	Location	Homestay
Canada	Discovery Island, North Vancouver, West Vancouver Island, Quadra Island, Richmond, New Westminster, Burnaby	Cultural homestay, Farm stay, Heritage homestay
USA	California, Colorado, New York	Agricultural, Educational Homestay
Australia	Mid North Coast of New South Hanna Vale, Wales, Emerald City, North of Melbourne	Education homestay, Farm stay
Japan	Narita, Tokyo, Yokohama, Nagoya, Ostu, Kyoto, Osaka, Kobe, Kurashiki, Okayama, Hiroshima, Fukuoka, Kumamoyo, MiyaZaki, Chiba, Nara	Home visit, Educational homestay
South Korea	Seoul	Educational homestay
South Africa	Happy Valley, Elandsberg Mountain, Hogsback, Eastern Cape, Botswana, Mpumalanga, Namibia, Zambia, Gauteng, Limpopo, Kwazulu, Natal	Leisure stay
New Zealand	Queenstown, Devonport, Northshore, Auckland, Te Anau Armette	Cottage homestay, Farm stay

Table 2.4 (Continued)

Country	Location	Homestay
Philippines	Manila, Davao, Baguio, Palawan, Boracay, Bohol, Cala Barzon	Cultural
Thailand	Mae Hong Son village in Chiang Mai, Nakhon Sawon, Chumporn, Surin, Amphawa Village, Hmong Hill Tribe Village (Chiang Mai), Doi Inthanon Chiang Mai	Student homestay, Cultural homestay, Volunteer homestay
Singapore	Singapore City	Urban homestay
Indonesia	Yogyakarta, Bali	Leisure homestay

In Thailand, Homestay is a kind of accommodation that is like Bed-and-Breakfast, but it involves with the culture and environment more than staying Bed-and-Breakfast. Homestay provides both accommodation and learning experience of local cultures and traditions for tourists. It is normally a house in the rural areas belonging to local people in the village, while the owners of the houses along with members of the family live in the house permanently. Local people collectively set up a group or cooperative for operating homestay in their community and open their houses for all interested people to stay and share experiences with them (Office of Tourism Development 2007). In 2004, the Office of Tourism Development under the Ministry of Sport and Tourism collected the homestay data and created the list of standard and guidelines for homestay.

Table 2.5 Homestay standard in Thailand

Categories	Indicators	Criteria
Accommodation	Home structure	- Well Construction - Have the specific room for tourist utilities

23

Table 2.5 (Continued)

Categories	Indicators	Criteria
	Bedroom	- Provide the bed sheet, pillow and blanket for tourist - Bed stuffs must be clean and change for hygienic - Provide coat room or coat hanger - In the same community, must provide the same quality bed stuff product
	Toilet and Bathroom	- Must be tight and safe - Door lock must be proper and have the air circulation in the toilet and bathroom - Size of bathroom should be proper and roof must not be very low for tourist's protection - Provide the bath wares - Bath water must be clean - Provide the garbage bin in the toilet - Provide coat hanger or bath rope in toilet.

Table 2.5 (Continued)

Categories	Indicators	Criteria
	Resting area	- Provide the resting area in home for tourist relaxation - Home stay must be clean both inside and outside
Food	Food and ingredients	- Provide the good quality of food and enough quantity to tourist - Cook hygienically and using the local ingredients
	Drinking water	- Provide good quality of drinking water and keep in hygienic ware - Drinking water must be clean and enough for tourist
	Table ware	- Provide the table ware such as bowl, plate, spoon and fork and it should be clean
	Kitchen and kitchen ware	- Kitchen can be inside or outside homestay but should be clean - Kitchen ware should by tidy and clean - Garbage should be well managed

25

Table 2.5 (Continued)

Categories	Indicators	Criteria
Safety	First Aid	- Should have the First Aid training regularly - Readiness use for First Aid and Medical Kit - Should collect tourist's health information such as allergy or emergency contact person
	Security Systems	- Report the community authority or leader when tourist comes - Provide the security system for life and property of tourist - Have emergency contact equipment
Host Hospitality	Welcome and greeting	- Introduce tourist to family members for learning about living and share the activities such as cooking or having meal
	Exchange cultural activities	- Using picture or orientation tourist about the daily life activities, culture, art, living, history and tradition to provide the information to tourist

Table 2.5 (Continued)

Categories	Indicators	Criteria
Tour Program	Clearly and acceptance tour program from the community	- Well plan for tour program and activities must involve with each different part of community to generate income - Tour program must produce the good image and make tourist clearly understand about community culture
	Tourist information	- Provide the details of tourist information such as geography, season and culture
	Host as a guide or local guide	- Host and local guide must provide the knowledge of community such as natural resources, culture, art, architecture, performance, believes to tourist
Natural resources and management	Tourist attraction within community of neighbor	- Must have the tourist attractions, activities or lifestyle. It can be natural such as river, waterfall, mountain, manmade temples, historical sites and fruit orchard

27

Table 2.5 (Continued)

Categories	Indicators	Criteria
	Maintenance and preservation	- Should have rules and regulations about natural resources using sustainable tourism such as not to bring any part of natural for personally - Create an environmental protection and preservation activities such as clean the water sites and plant trees in the forest
	Planning or agenda for environmental impacts	- Should have the rules and regulations to reduce the negative impacts from tourism to nature and environment
Culture	Authenticity and local culture	- Should have the local architecture or products that indicate the history and culture - Generate the local culture information to tourist - Should have agenda to conserve the local culture and authentic performance - Proudly present the local performance and perform it properly. No adaptation for modern or renew

28

Table 2.5 (Continued)

Categories	Indicators	Criteria
	Preserve the local lifestyle	- Do everything as a usual life including religious activities, career. No adaptation or artificial for tourist demand
Extra income and Community involvement	Tourism benefits not mainly income to the community. Must not interfere with the main career	- Realize that tourism benefit is not the main income to generate to the community. Not invest money for tourist demand
	Local products	- Sale the product that makes from local or use the local materials
Homestay Operation	Community Participation	- The administration must process by community's member and all must understand the mission and objectives of homestay
	Homestay Committee	- The committee must come from the community election
- The committee must understand and have knowledge about home stay administration

29

Table 2.5 (Continued)

Categories	Indicators	Criteria
	Rules, regulations and Conditions	- Should have the rules, regulations and conditions for the administration officially. - The meeting must run regularly for community and tourist benefits - Should have the budget administration for the community benefits - Should have some basic objectives such as should have criteria to be homestay member, should have tourist limitation, should have rotation to generate income to service provider in the community and should have price standard in each homestay member
	Reservation, Registration and Deposits	- Should have the conditions for reservation - Provide community information to tourist - Tourist must register before staying in home stay - The deposit must be in the same rate Should do the tourist statistic

30

Table 2.5 (Continued)

Categories	Indicators	Criteria
	The other details, fees and extra services	- Fees and Extra charge must clearly inform to tourist officially such as room rate and food prices
	Brochure or Publishing	- Provide the community information and tourist attraction within the community as well as neighbor through brochure or internet
	Public Relation Plan	- Must have the mission to be tourist attraction

2.3.3 Ecolodge

The term ecolodge was formally launched on the market at the First International Ecolodge Forum and Field Seminar held in 1994 at Maho Bay Camps in the U.S (Wood 2002). Virgin Islands and Maho Bay Camps was determined as the first ecolodge (Mehta, 2007). As a follow-up of the 1994 forum, TIES published the first book for ecolodge industry named 'The Ecolodge Sourcebook for Planners and Developers' (Mehta 2007) which contains information on site selection, finance, planning, design, alternative energy applications, conservation education, guidelines and an impressive set of resources including a variety of architectural plans for ecolodges (Eagles 2001). Later, The First International Ecolodge Guidelines was published in 2002 after the Second International Conference held in 1995 in Costa Rica, which offered a definitive international definition of an ecolodge (Wood 2002). Per the definition, ecolodge is an industry label used to identify a nature-dependent tourist lodge that meets the philosophy and principles of ecotourism (Weaver 2001) (Ceballos-Lascurain 2008). (Mehta 2007) proposed new definition which says an ecolodge is a 5-75 rooms, low-impact, nature-based, financially sustainable accommodation facility that helps protect sensitive neighboring areas,

involves and benefits local communities, offers tourists an interpretive and interactive participatory experience, provides a spiritual communion with nature and culture, and is planned, designed, constructed and operated in an environmentally and socially sensitive manner.

An international ecolodges survey of 28 operators in nine regions around the world (Belize, Costa Rica, Peru, Brazil, and Ecuador, the state of Alaska, Australia, New Zealand and Africa) (Russell et al. 1995). This study discovered that many of the lodges were found in or adjacent to protected areas, with outstanding natural beauty acting as a key to success of the operation. Most of the ecolodges sampled were small, accommodating about 24 guests, with some successful operations in Amazonia catering up to 100 guests. Although most of the ownership had been typically small scale and independent, corporate ownership was becoming more common. Per, The International Ecolodge Guidelines, an ecolodge should meet the following criteria, which are the key principles of ecolodges. These principles should also respect principle of ecotourism

The guidelines for eloclodge from Bien (2002) Dizdareviç (2010) are

i.   Conserve the surrounding environment, both natural and cultural.

ii. Have minimal impact on the natural surroundings during construction.

iii. Fit into its specific physical and cultural contexts through careful attention to form, landscaping and color, as well as the use of localized architecture.

iv. Use alternative, sustainable means of water acquisition and reduces water consumption.

v.   Provide careful handling and disposal of solid waste and sewage.

vi. Meet its energy needs through passive design and combines these with their modern counterparts for greater sustainability.

vii. Endeavor to work together with the local community.

viii. Offer interpretative programs to educate both its employees and tourists about the surroundings natural and cultural environments.

ix. Contribute to sustainable local development through research programs.

A study for determining the location of ecolodges and nature-based lodges in countries was done (Bricker et al. 2004). 60 countries were chosen based on their high concentration of nature-based lodges, their developing ecotourism industry, and their

32

location in an area of high biodiversity and significant natural attractions. Of the total 5,459 lodges mapped (another 1,059 lodges could not be plotted because location was unavailable), Indonesia has the largest concentration of lodges (758) seven hundred fifty eight, followed by Costa Rica (590) five hundred ninety, Thailand (468) four hundred sixty eight, Peru (356) three hundred fifty six, Ecuador (345) three hundred forty five, Guatemala (322) three hundred twenty two, Mexico (304) three hundred four, Sri Lanka (277) two hundred seventy seven and Tanzania (259) two hundred and fifty-nine. Of the lodges mapped in all 60 countries, 84 percent are in biodiversity hotspot areas, as defined by Conservation International. The highest concentration is in Mesoamerica (1,157 lodges) one thousand one hundred and fifty-seven, followed by Indo-Burma (543 lodges) five hundred and forty-three. Of those ecolodges that completed the in-depth surveys, 60 percent are located within or on the periphery of an established protected area, and 39 percent are located within a private reserve.

2.4 Design Criteria for Accommodation

The criteria for designing components of built environment within the framework of ecotourism for example eco-lodge, parks and hotel and those development and operations. This has been driven by market-demand and growing consumer interest in responsible travel especially the growing concern to reduce use of fossil fuels to generate electricity and the resulting impact on global warming. New demands are being placed on facilities that wish to be considered environmentally friendly (Enhancing Sustainable Tourism 2008). Ecotourism Ireland (2015) has developed ecological best practice guidelines for construction and refurbishment of dwellings also known as accommodation. The aim of the standard or those guidelines is to establish sustainable criteria for design, construction and travel for tourism infrastructure. Each project assessed in a holistic fashion, so that each aspect of the project is not viewed in isolation. For example, a very "green" building located in a rural landscape, may not be as sustainable as a conventional building in a town, where public transport is available. On a technical level the standards of sustainability should be assessed in terms of CO2 emissions in tones per year. To determine this for each project would take a substantial amount of time and resources. Therefore, a system that is more "general" and "rule of thumb" rather than strictly scientific. To put ecological design and construction into perspective, it must determine sustainability. This is a word often used and misused and

33

there are many definitions. One that is widely used is that adopted by the Bruntland Commission "the ability to satisfy our basic needs without prejudicing the ability of future generations to do the same". This suggests that we must use our resources efficiently. Thus, the houses that we design, build and renovate should respond accordingly and last for future generations. The criteria for design, construction, operation and maintenance will be based on following

    i.   Design and Architecture

   ii.   Local involvement

  iii.   Energy use

  iv.   Transportation

   v.   Construction and Materials

  vi.   Water

 vii.   Land use and Ecology

viii.   Health

  ix.   Pollution

   x.   Sustainable Technology

  xi.   Accreditation

2.4.1 Design and Architecture

For proper design, environmental and social impact assessments of site should be conducted, with local stakeholder involvement ensuring plan is appropriate for local biological, geographic, climatic and cultural features as well as potential client expectations. Architecture and infrastructure should 'integrate harmoniously' with surrounding area, for example by using natural materials and low structures to be minimally visible.

2.4.2 Local Involvement and Conservation

Accommodation should provide sufficient information to tourist on cultural do's and don'ts. Also, should consult with local people regularly to help them and solve problems created by tourists. Accommodation should give work opportunities to nearby villagers and should support the community and school. Accommodation should provide information to the tourist about nature and wildlife and should not sell any wildlife product to tourist.

2.4.3 Energy use

The use of energy in a building is probably the most significant in terms of sustainability and is usually the easiest to do something about. This means avoiding air conditioning and other electric devices that use too much electricity. Renewable energy sources such as solar, wind, small hydro and biogas and low energy consumption is the goal. So, the energy used should be:

i.   Off-the-grid
ii.   Passive ventilation & lighting
iii. Solar hot water and photovoltaic panels
iv.   Bio-gas
v.   Insulation, thermal
vi.   Lighting timers, compact fluorescent bulbs
vii. Efficient appliances
viii. Kerosene lamps & candles
ix.   Ice boxes & insulated coolers

2.4.4   Transportation

The issue of sustainable transport systems is significant in terms of sustainability and one that is poorly addressed in rural areas. Developments that avail of public transport systems will be viewed more favorably as will efforts to minimize energy use in transportation.

i.   The accommodation should be within 1 kilometer of public transport
ii.   The accommodation development should arrange for group transportation from a town or village and support community transport.
iii. Vehicles such as electric cars, electric bikes and cable cars should be promoted
iv.   Maximize the use of bicycle

2.4.5   Construction and Materials

The various materials used in construction require energy to produce and transport. This is called the embodied energy of the material. This aspect of energy in buildings is becoming more significant as energy in use reduces. For example, locally sourced timber reduces energy use due to less transportation and the use of local timber. Following should be used.

i.   Labor intensive -local employment

35

ii. Natural, renewable, sustainably harvested materials

iii. Lead-free and no-or low-VOC paints

iv. Use recycled materials such as glass and cement

2.4.6 Water

Water is a natural resource that is poorly used. It is often taken for granted and misused or wasted. The water we drink requires expensive treatment and its availability of quality effects the quality of our lives. Now that water charges are likely to be implemented the conservation of the resource will become an issue for everyone. For conservation and reuse of water following can be used.

i. Water saving (low-flow) faucets, showerheads & toilets

ii. Rain water storage

iii. Grey water reuse: for gardens and toilets

iv. Use filtration techniques to remove chlorine, lime and organic chemicals and bacteria from incoming water

2.4.7 Land use and ecology

The type of land use developed influences the overall sustainability of the project. For example, development of green field sites results in the displacement of wildlife and effects the immediate ecology, however, the land has an amazing ability to recover and sympathetic landscaping can lead to regeneration and attracting new wild life. The use of greenfield sites reduces the ecological footprint. The refurbishment and renovation of existing buildings particularly old cottages and outbuildings should be encouraged.

i. Indigenous species of trees should be preserved and planted

ii. Should conserve native hedges, flora and fauna to encourage wildlife

iii. Use natural materials in hard landscaping, paths and driveways around the accommodation development

iv. Conserve the surrounding environment and should not harm ecology

2.4.8 Health

An ecological property is a healthy property which sustains the health and wellbeing of the occupants. In modern construction materials are often treated with chemicals which can be transferred into the building and effect occupants. The paints used to decorate

dwellings can be highly toxic, petrochemical based and effect health. Timbers are often treated with chemical based preservatives which in many cases are unnecessary and ultimately affect the occupant's health. Radon can be a problem and should be minimized to acceptable levels, as determined by the appropriate Building Regulations. In some cases, the effects of harmful gases can be counteracted by using plants. Daily activities that can reduce the impact of the surrounding natural environment are:

i.   Limited disposables

ii.   Biodegradable cleaning products and personal care products

iii.   Chlorine-free/biodegradable/recycled paper products

iv.   Incorporate native species for landscaping, avoid exotic

v.   No pesticides, herbicides or synthetic fertilizers

vi.   Locally produced and natural products

vii.   Source organic food for guest's meals, onsite organic gardens

viii.   Plant trees and use indoor plants

2.4.9 Pollution

Some of the issues in relation to pollution have already been dealt with under Health, but this section deals primarily with external pollution. They should be Reduced, Re-used, and Recycled

i.   Onsite wastewater treatment

ii.   Compost for use onsite or for local food producers

iii.   Link sewage treatment and foul sewer to the town mains

iv.   Incorporate sustainable methods such as wetlands or reed-beds for sewage treatment installation

v.   A dry-system such as composting toilets should be used in the sewage treatment installation

vi.   Waste from the house should be separated and recycled

vii.   Open fires or stores should be restricted to using seasoned timber as fuel and suitable storage for drying of timber should be provided

viii.   Boiler or heat source should regularly be maintained and recorded

ix.   Use non-ozone depleting in manufacture and composition (avoid UPVC based insulations) in insulating materials used in the construction

2.4.10 Sustainable technologies

The use of sustainable technologies obviously helps ecological design and construction achieve more sustainable projects but they must be viewed in an overall perspective along with the other areas of design and construction previously discussed. For example, a dwelling with UPVC windows, insulated using expanded polystyrene with a concrete driveway and solar water heating panels on the roof is not in any way ecological. However, solar water heating along with some of the other criteria already discussed in previous sections, would be more ecological. The main source of energy for heating in the development from sustainable technologies such as one of the following:

    i.   Wood pellet Boiler

   ii.   Wind generation

  iii.   Photovoltaics

  iv.   Hydro turbine

2.4.11 Accreditation

The assessment and accreditation for the 'Ecological Best Practice Guidelines' of properties will be based on the above criteria. It should be noted that these criteria are not conclusive.

2.5 Design Criteria for Homestay in the context of Thailand (ASEAN 2016)

For all over the ASEAN region including Thailand, the homestay program is a form of alternative tourism in which tourists are given the opportunity to experience the way of life in a typical village with local community. In contrast to mass tourism, the homestay program should preferably be low scale, low density, flexible and spontaneous. More importantly it should be owned and operated by the local communities so that the economic benefits go directly to them. With many of the world's international tourists looking to ASEAN countries for rural tourism, a more systematic development of homestay will be crucial in creating a 'new brand' of tourist experience, showcasing the rural way of life, offering an affordable form of holiday that contains a high degree of cultural and educational elements. The selling point of the homestay program is not the physical entity of the village but more towards the total village experience. Here are the mandatory guidelines for homestay accommodation for Thailand and ASEAN community (ASEAN 2016).

38

2.5.1 The House

    i.   The structure of the house shall be in good, stable and safe condition such as roof, walls, doors, floor, etc.

    ii.   The design and building materials shall reflect the vernacular architecture and local identity.

    iii.   The homestay provider shall provide a guest bedrooms that is separated from the other bedrooms in the house.

    iv.   There shall be a minimum of one bathroom/toilet for the guest either inside the guest room or inside the house.

    v.   It is recommended that the house shall have electricity supply.

    vi.   The house shall have adequate and clean water supply made available always inside the house.

2.5.2 The Bedroom

    i.   It should provide basic amenities and furnishing in the guest bedrooms such as fan, desk, mini cupboard, mirror, electric socket, mosquito net or coil etc.

    ii.   A maximum of four of the total number of bedrooms in the house, which are not being used by any member of the homestay provider/host shall be allocated to homestay guest.

    iii.   It should provide standard and appropriate type of beds such as single beds and double beds with comfortable mattresses and pillows.

    iv.   If necessary, windows should be fitted with a mesh frame to keep out mosquitoes and other insects.

    v.   Bed linen shall be changed as needed; and following the departure of each guest, a fresh set of clean bed linen shall be provided to the next guest.

2.5.3 The Toilet/Bathroom

    i.   It must be tight and safe should be provided within a nearest range of bedroom

    ii.   It should provide either sitting or squatting type of toilet inside or outside close to the house.

    iii.   It should provide basic toilet and bathroom facilities including doors with locks in all toilets and bathrooms.

    iv.   Adequate and clean water shall be provided always.

2.6 Empirical Studies

2.6.1 Pamela A. Wight (1997): Ecotourism accommodation spectrum: does supply match the demand

This paper studies the general ecotourism from the perspective of experienced eco tourists, reveals that a range of accommodation is preferred, form many types of fixed roof to no-fixed roof. General consumers, experienced eco tourists and the ecotourism travel trade were surveyed by telephone and mail. The study found that a range of accommodation may be appropriate for ecotourism and that demands ranges along this spectrum.

However specific preferences may vary with specific ecotourism market: general consumers interested in ecotourism as part of their vacation may exhibit a preference which is at the softer end of the spectrum, while experienced eco tourists may prefer the middle or harder end of the spectrum. Destination areas and operators need to understand this range of accommodation desired, and to math their accommodation supply to the current and shifting market preferences, considering the local community preferences and environmental constraints.

2.6.2 Vittichat Soonthonsmai, Somsri Siriwaiprapun & Kedsarin Imlek (2008): The development of tourism potentiality, strength and sustaining of homestay, the community based tourism project a case study of Tambon Tapong, Rayong Province, Thailand

This paper studies the sustainable development of homestay business as a viable means to promote their ecology to gain better understanding of the current state of management homestay, and the business environments at Tambon Tapong. The study considers a working model for the development of homestay as to increase its potentiality, strength and sustainability.

The study is qualitative research with open-ended questionnaire and an observation record sheet, the important finding of the study is the cleanliness and securities are the key strengths of homestay as well as hospitalities of the family members who serve as lodging staff. However, the lack of service standard, customer needs and the proactive management should be concerned. They need to improve proper marketing strategies and the English communication skills to develop to service to visitors.

2.6.3 **Vitul Lieonrungruang and Nantawan Muangyai (2007): Cultural Landscape Analysis of Doi Suthep-Pui National Park, Chiang Mai, Thailand**

This paper studies the cultural landscapes of Doi Suthep-Pui National Park, Chiang Mai, Thailand through analyzing site history and existing condition. It is a place of biodiversity where endangered and rare species can be found. This site is a good place to visit because of natural and cultural attractions, especially Phra That Doi Suthep Temple, a highlighted destination. This study also focuses on cultural aspects of ancient Hmong hill tribes and their lifestyle. The main objectives of this study were to give the brief introduction of built environment and cultural landscape of the study area, to analyze the cultural landscape of the site by analyzing site history and existing condition and recommend conservation strategies for Doi Suthep-Pui National like vehicle accessibilities, parking lots, location for shop stalls, on-site people movement, interpretation center, restaurants, restrooms, waste management, and electricity and water supply. The study was started with the analyzing of oral histories, written sources and visual sources. After knowing the primary information, the area is thoroughly analyzed by its physiographic, cultural and historical context. Site history and existing conditions was analyzed using two key features. First is landscape characteristics and cultural units (It includes natural systems and features, spatial organization, land use, cultural traditions, topography etc.) and second is landscape characteristics and historic, cultural context (It includes settlement themes and chronological settlement patterns). Evaluation of significance of cultural landscape was done after knowing its existing conditions then recommendation was given for conservation and overall site management.

Figure 2.3 Picture from the related previous study (Lieorungruang and Muangyai 2007)

2.6.4 Abbas Maharvan (2012): Ecotourism and its Architecture, a Methodological Framework for Assessing Progress towards Sustainable Development

This paper proposes a composite framework for the evaluation of the environmental impact of tourism development on host destinations. In this study, the environmental impact of tourism is considered as a social-ecological phenomenon that can be categorized into the two aspects of natural and social-cultural impacts. Ecotourism is introduced as a type of sustainable tourism in that its policies and principles for development are based on conservation of environmental heritage (including natural and cultural heritage) via engagement of local people and communities in the tourism development process. This study involves three main subjects: sustainability, ecotourism and architecture. Since sustainability is considered as an umbrella that covers all human activities and products, in this thesis sustainability and its policies and principles for sustainable development are considered as factors that make a link between ecotourism and its related architecture. This study intends to discover new knowledge about the integrated cultural, ecological and economic characteristics of ecotourism and its architecture. It can be considered as the study that has proposed an integrated method that sets the ecological, cultural and economic characteristics of a phenomenon (such as ecotourism and architecture) in a holistic frame to measure their influences on each other through sustainable development. The research begins with a literature review that introduces sustainability, ecotourism as a sustainable type of tourism, and sustainable architecture as one of ecotourism's products. The literature explains the main principles that dominate sustainability and how these might be used as objectives to make a framework for the development of ecotourism and its related architecture. Second step is finding the knowledge gap that exist between ecotourism and architecture through sustainable development and third step is answering the research question and for that qualitative approach is used as methodology. Proposal for a comprehensive framework for sustainable ecotourism and its related architecture to measure and set its environmental, cultural and economic footprints in a holistic framework to explore their influences on each other. Quantitative methodology that is to be developed and tested in this study. This methodology will be used to answer the key research questions. To achieve this goal, the research structure is planned to clarify the information gained from the literature review.

2.6.5 **Kathryn Early (2011): Eco-Tourism Resorts, a Case Study of Best Practices at the Hamanasi Resort in Belize**

This paper presents the case study of best practices at the Hamanasi Resort of Belize located in Central America. Tourism is a mainstay of the economy and it represents the number one foreign exchange earner in the small economy, followed by exports of marine products, citrus, cane sugar, bananas, and garments. Some threats that exist in the country that could also have a negative impact on the tourism industry include a growing involvement in the Mexican and South American drug trade and high crime rates. The Hamanasi Adventure and Dive Resort is in the small fishing village of Hopkins, Belize. Situated directly on the shores of the Caribbean Sea and adjacent to the Maya Mountains, Hamanasi provides an intimate boutique resort experience with the environmental benefits of sustainable practices. The property includes 21 rooms, a restaurant and bar, a freshwater infinity pool, beach access, lush gardens, full service snorkel and dive center, a gift shop of local and regional artists, rainforest and reef adventure packages, and Garifuna dancers and drummers. An eco-resort, Hamanasi manages the property following guidelines for best practices of sustainability. Some of these practices include the trio of reduce, reuse, recycle, the completion of eco certification programs, constructing the property to preserve trees, composting food scraps, donating to local charities, and educating guests about preserving the environment.

The objective of this research was to investigate best practice initiatives of sustainability involved in the successful development and management of Hamanasi Resort, an award winning eco-tourism resort located in Belize. Before traveling to Belize, critical definitions concerning tourism, eco-tourism, and sustainability are defined and background research into the country of Belize and the Hamanasi eco-resort is conducted. While at the eco-resort, the research is to be conducted in four phases: Phase one includes hands-on research through shadowing in different hotel departments, observation of management practices in Hamanasi, interviews conducted with employees, and questionnaires administered to guests; Phase two begins a study of the business and organizational model of Hamanasi along with an examination of the critical issues encountered during the start-up phases; Phase three is a SWOT analysis of Hamanasi and a market analysis of other properties that compete with the eco-resort; Phase four investigates ecotourism promotions and policies in Belize and Hamanasi, and examines

the different eco certification practices. Overall this paper strives to provide the background research gathered along with plans for the proposed research to determine the best practice policies of Hamanasi, a model eco-resort.

2.6.6 Vincent Fischer-Zernin & Steven Schipani (2005): Designing and operating an ecolodge in the Lao PDR: Suggestion for local and international investors

This paper suggests guidelines for designing ecolodge in Lao PDR and its operation for the international investors. In Laos, warm hospitality, traditional architecture, local food, handicrafts and an unspoiled environment are the things that make the country attractive and interesting to tourists. As more and more people decide to visit Laos the demand for good quality guesthouses, hotels and restaurants is also increasing and presents a good opportunity for investment. What the typical international tourist and a growing number of Lao people that lives in cities prefer is a clean, well-managed small hotel or guesthouse located in a quiet natural area that is built of wood and bamboo. They prefer to eat local food and sleep in a room decorated with Lao handicrafts and furnishings. Also, most international tourists are very environmentally conscious and want to stay in a place that does not negatively affect the environment. Designing and operating this type of accommodation, an ecolodge, is the focus of this study. This paper defines ecolodge as a small hotel or guesthouse that incorporates local architectural, cultural and natural characteristics, promotes environmental conservation and produces social and economic benefits for local communities. As the study, construction materials should be local, such as bamboo, rattan, wood and locally made bricks or stone. Some of the guidelines are

    i.   Minimize the use of energy, this means avoiding air conditioning and other electric devices that use too much electricity. Should install solar energy to meet some power needs, such as lighting and hot water.

    ii.   Use local products and minimize the use of chemicals in daily operations, this means using local food products (not canned imported products), locally produced bed sheets, table cloths and other items in lodge.

    iii.   Should not buy chemical bug sprays, poisons or toxic cleaning fluids when there is a suitable substitute. Install screens to keep out the bugs, use non-toxic rat poison (or have housecats) and use simple soap and water for cleaning to save money and environment.

44

iv.   Minimize and manage waste, this means not using things that make a lot of waste, such as disposable water bottles, canned foods.

v.   Recycle and reuse items when possible, especially glass and plastics.

vi.   Minimize negative impacts on nearby villages, should provide information to tourists on cultural do's and don'ts. Should also speak with local villagers regularly to learn to help them and to learn if there are any problems created by tourists that staying at lodge.

vii.   Employ local people and support their community, should give work opportunities to nearby villagers. Should support the community by helping with activities at a nearby school.

viii.   Support conservation of nature, this means giving information to guests about nature tourism of the area. Should not sell any wildlife products and support the conservation activities in a protected area nearby. Should protect the trees around and prohibit hunting.

This study also suggests strategies for construction and operations such as use comfort and safe design elements with proper functions, select natural and forest setting site nearby mountain and river, use wood, bamboo and cheap natural and local building materials, provide double room bungalows, dormitories, tree house or multi room building like a guest house for group of people, construct restaurants nearby scenic views and use local materials, combine natural local materials with Lao style for interior decoration, use plenty of water, plants and trees for gardening and landscaping.

Figure 2.4 Pictures from the related previous study (Fischer-Zernin & Schipani 2005)