

# SIGNIFICANCE OF MEANINGFUL BUILT ENVIRONMENTS IN SUSTAINABLE DEVELOPMENT WITH SPECIAL REFERENCE TO AYURVEDA-ECO TOURISM IN SRI LANKA

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## ABSTRACT

*Scarcity and the rapid decline of earth's natural resources is an outstanding global issue in the present context. Construction industry is highly responsible for utilising these resources at large. Therefore Eco-friendly Sustainable approach has become a key consideration and a current trend in present day Construction sector. In this arena, the words Green, Sustainable, Eco-friendly, Environmental, energy efficiency, Carbon-zero, Climate responsive and so on are interchangeable. All in all, the ultimate motive is to raise the living condition of our lives and protect the earth for today and tomorrow. In uplifting the living condition, physical aspects as well as psychological aspects often play significant roles. At present, professionals involved in construction sector are very much concerned about physical sustainability achieved through green technology and often tends to ignore psychological sustainability that could be achieved through conceptual or meaningful architectural approach.*

*Therefore, this paper focuses on the Architects approach to sustainable development through creating meaningful built environments. This is approached by relating architectural theories such as Psychology of Sustainability, Sensual Architecture and Conceptual Architectural theories to selected case studies. The selected case studies would focus on the current development projects in Sri Lanka, related to Ayurveda-Eco Tourism.*

**Keywords:** *Ayurveda-Ecotourism, Conceptual Architecture, Meaningful Built Environments, Psychology of Sustainability, Sensual Architecture.*

## 1. INTRODUCTION

Among many significant global challenges identified at present in the construction industry, achieving sustainable development is significant and outstanding. The concept of Sustainable development is vast and has many dimensions. Although it is criticised for being too vague, there is a considerable agreement among different scientific fields that it should remain the main aim to be pursued in the management of natural and human resources. This management is known to be in two folds such as technical and non-technical. Many professionals in the construction industry mainly address sustainability through technical solutions such as the use of a wide variety of Green technology and tend to ignore non-technical humanistic approach.

According to Mirilia Bonnes (2002), sustainability is a trans-disciplinary concept which calls into question issues that are central in several social and human sciences and disciplines, ranging from economics, legal

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sciences, philosophy, psychology, etc. In this regard, within social and environmental psychology in particular, some authors have recently proposed the term "psychology of sustainability" or "new ecological psychology" (Bonnes and Bonaiuto, 2002). These terms identify those theoretical and empirical contributions aiming at better understanding the psychological processes involved in the development of a positive environmental awareness and concern in people's use of natural resources.

Having come out of the thirty year civil war, Sri Lanka is heading towards rapid development in many numbers of spheres. Contributions made by the Construction industry in to this development are crucial and outstanding. Development of a country would be holistic if it caters not only to the physical environment but also to the human factors. Therefore it is the responsibility of professionals involved in the construction industry to detect and address issues and needs relevant to the wellbeing of not only the physical built environment but also its users.

## **2. SUSTAINABLE DEVELOPMENT THROUGH PSYCHOLOGY OF SUSTAINABILITY**

Though most people who are concerned about environmental issues and sustainability understand that the Environment is not something "out there," a significant number of people think of "the environment" as a separate entity, like "the moon" or "the trade deficit" (Manning, 2009). Therefore it is crucial to make the humanity aware of the fact, that the environment is not something separate from us; but humans are an integral part of the environment.

Alice Jones(1996), a pioneer in field of Psychology of Sustainability, expresses her personal views on the subject as follows; "I call it loosely 'the psychology of sustainability', and it has to do with the very personal, individual, and sometimes conflicting experience of talking the talk of sustainability and then trying to walk the walk. My take on this is that we can't have a meaningful discussion about a national sustainability policy, or even a community sustainability policy without explicitly considering the very personal nature of what is implied".

The focus below is to follow Alice Jones with respect to the 'very personal nature of what is implied', which denotes the hidden or disguised humanistic version of perceiving sustainability. Therefore the emphasis here is on understanding how any ability to act in the environment in a sustainable manner is intimately dependent on the ability to act in a sustainable manner with respect to one's own internal psychological environment. Indeed it could be argued that unless experiential understanding of one's psychological environment consciously embodies analogous cyclic patterns and processes, it is unlikely that social behaviours with respect to the environment will themselves be sustainable- however strong the declarations of intent or the initial commitment to sustainable patterns of action. The built environment holds immense responsibility in providing this personal experiential understanding of the cyclic patterns, processes of the natural ambient environment and thereby align it with the inner psychological needs in order to achieve optimum equilibrium in sustainable development.

## **3. NEED OF MEANINGFUL BUILT ENVIRONMENTS IN SUSTAINABLE DEVELOPMENT**

One of the side effects of our modern stressful and hurried lives is that we tend to lose track of the things that make living meaningful and significant, such as our connections to close friends and family or our desire to make a difference in the world. Rushing through our days on autopilot, not really thinking through the impacts of our decisions, we sometimes do things that we later realise are incompatible with our values(Manning, 2009, p.20). In the context of reframing environmental messages, Kaplan (2000) has suggested emphasising deeper values and reminding people how sustainable actions (or sustainable living) can contribute to things like being needed by connected to others, making a difference in the world, being competent, and creating a good life. At least two separate areas of research confirm this link between activated personal values and sustainable behaviour, particularly when personal values are ecologically friendly. First of all, in a series of studies investigating the values and motivation, Verplanken and Holland (2002) found that people preferred ecologically friendly options if their personal environmental values had been primed. In a second set of studies, Vohs and colleagues (Schmeichel and Vohs, 2009) found that people who took a moment to reaffirm personal core values were better able To practice self-control in a

consumer task compared to people who were not prompted to think about their values.

Reflecting on the above research findings, it would be acceptable if said that the built environment people live in has direct influence on stimulating, motivating and promoting the above mentioned aspects of environmental values and personal core values. In the field of Architecture, built environments of this nature are broadly titled as ‘Meaningful Architecture’. This nature of built environments emerges if they are appropriately approached from its early inception stages. Therefore concept formulation could be considered as significant in this regard. There are many approaches in creating Meaningful Architecture, and selected two are;

- Sensual architectural approach (more contextual)
- Conceptual architectural approach (theme, function)

Sensual architecture is more context related, where human senses are enhanced through forces of nature. This is learning from nature. A similar theory was discussed by Alice Jones and Steven Gordon (1997) on understanding the cyclic process of nature in order to promote sustainable storm water management. The point of doing so is to obtain an intimate sense of what is important to one's psychic well-being in such processes that may then give new meaning to caring for processes in the external environment. Few example activities Jones and Gordon dictate in this regard are as follows;

- wind, wind storms - possibly in the light of experience with sailing and hang-gliding
- water, waterfalls, rain, rivers and flooding - possibly in the light of kayaking and white water rafting
- earth, dust, sand and landslides - possibly in the light of gardening, rock climbing, and caving
- wildfires, volcanoes - possibly in the expectation of light sailing

Conceptual architecture responds mainly to the function or the theme of the project and communicates the ‘big idea’ of the project through the composition of design elements. This is significant in conveying a message to the building user and thereby changing the mode of behaviour and line of thinking appropriately. Authors believe that when sensual architecture and conceptual architecture are combined, the built environment becomes meaningful and effective and thereby could easily achieve the intension of sustainable development. In order to achieve this ‘Architects Thought Process’ during the work stages of inception, concept formulation and designing stages are significant.

## **4. AYURVEDA-ECOTOURISM**

### **4.1. UNDERSTANDING AYURVEDA**

Ayurveda translates into English as the Science of Life (Ayur - life, veda - science). Ayurveda, originated in India, is the oldest and most developed life science of natural healing in the world. Life is the outcome of the union of body (Sharir), sense organs (Indriya), Psyche (Mana) and Soul (Atma). Ayurveda is not merely a system of Healing, but an entire way of life that aims to bring about the perfect balance of the entire personality - body, mind and spirit. Ayurveda is based on theory of tridosha of the three Biological forces - Vata, Pitta and Kapha. Disease arises when there is an imbalance among the three Doshas and aim of the therapy is to bring about the required equilibrium.

Ayurveda not only refers to the positive health of individuals but also the protection and balancing of universal masses. Response to the five basic elements of the earth (Panchamahabuth) is one such principle in Ayurveda. These elements are; Air (Akasha), Space (Vayu), Fire (Theja), Water (Jala), Earth (Pruthvi). Therefore Ayurveda promotes universal balance by responding to the forces of the earth. It is a medical system which emphasise that all being comes out of nature. That we are integral part of a whole universe and therefore have a responsibility to our source. It is a system which recognise that the five elements comes together in each individual in different combination and proportions marking each person unique in their composition of elements with their own path to balance. These differences need to be recognised and honoured, and live in harmony with the environment in order to maintain health and wellbeing in a holistic

way. Healing ensures by the grace of the absolute acting through the law of nature. Many benefits could be drawn if people assist nature by living a life of balance in accordance with her law. The massage of Ayurveda is to bring about harmony between the individual and nature from which he or she arises.

The concepts which are used in Ayurveda by contrast do not originate from scientific concepts or experiments, but comes from 'direct observation of nature'. According to the wisdom of Ayurveda the mind-body has the intelligence to heal itself. The same intelligence which operates in the nature which governs the yearly migration of birds, the changing of the seasons, the flow of the tides, the orbits of the planets, also operates at the functioning of the human physiology. It is the sole function of Ayurveda to promote the flow of this great intelligence through each and every human being and the universe as a whole.

#### **4.2. DEFINING ECOTOURISM**

Ecotourism is defined by The International Ecotourism Society as "responsible travel to natural areas that conserves the environment and improves the well-being of local people" (TIES, 1990). Ecotourism is about *uniting conservation, communities, and sustainable travel*. This means that those who implement and participate in ecotourism activities should follow the following ecotourism principles:

- Minimise impact.
- Build environmental and cultural awareness and respect.
- Provide positive experiences for both visitors and hosts.
- Provide direct financial benefits for conservation.
- Provide financial benefits and empowerment for local people.
- Raise sensitivity to host countries' political, environmental, and social climate.

#### **4.3. THE CONCEPT OF AYURVEDA-ECOTOURISM**

As discussed previously on the concept of Ecotourism, it is broadly connected with conservation and sustainable development. 'Conservation' could be considered as a key point in ecotourism, where environment, bio diversity and local communities are protected and positively developed. In the arena of development, Green Economy is becoming the outstanding income source of many developing countries, where flora and fauna are used to generate money and wealth. Herbal plants are one such group of flora that plays a significant role in the green economy. If this green economy is not managed properly it would harm the bio-diversity and the universal balance of the nature.

Many numbers of Herbal plants with numerous astounding medical values are found in tropical forests of the Asian region. Sri Lanka is one such region with a vast variety of identified and unidentified medical plants. At present these herbal plants are exploited in large scale for local and international industrial purposes without proper supervision and management. Scientists and naturalists' research indicate that many plants of great value are endangered and are heading towards extinction unless taken immediate action to conserve. Therefore conservation of Herbal plants and thereby the biodiversity as a whole has become not only a national concern but a global concern.

After the three decade war, Sri Lanka is heading towards rapid development and has become an attractive destination to many international tourists. Among many reasons for being a popular tourist destination, Sri Lanka is internationally well known for the Ayurveda medical treatments. These treatments are organic and herbal plants are widely used. Therefore, the time has come to combine Herbal Plant Conservation with Ayurveda and Ecotourism and orientate development towards sustainability through the concept of Ayurveda-Ecotourism.

Along with the present day Sri Lanka National Development Policy, Ministry of Indigenous Medicine and the private sector investors are promoting many development projects that are aligned with the concept of Ayurveda-Ecotourism. As discussed in the section 1.0 above, it is important to respond to these projects

not only through physical sustainability but also through psychological sustainability. The projects discussed in the section 4.2 below are viewed in this perspective.

## 5. CASE STUDIES

Above discussed ideas and concepts are explored through two case studies- two ongoing Architectural projects as described below:

- (1) Development at Bandaranaike Memorial Ayurveda Research Institute, Navinna, Sri Lanka  
Client - Ministry of Indigenous Medicine, Sri Lanka
- (2) Ayurveda - Herbal Park Tourist Centre at Habarana, Sri Lanka  
Client - Dr Rohan Karunarathne, AKK Engineers (Pvt.) Ltd., Battaramulla Sri Lanka

Both projects are about promoting awareness on Ayurveda and healthy living, while addressing commercial revenues and sustainable development. Architects involved in these projects have concerned the sustainable approach from the inception and the concept formulation has played a significant role in this regard. Further the projects are sensitive towards the Psychology of sustainability and therefore more focused on the primary and secondary users of the project. In both projects meaningful architecture is approached through the combination of Sensual and Conceptual architectural concepts.

### ***5.1. CASE STUDY 1: DEVELOPMENT AT BANDARANAIKE MEMORIAL AYURVEDA RESEARCH INSTITUTE, NAVINNA, SRI LANKA***

The site Navinna is in close proximity to the city of Colombo, Sri Lanka and reflects urban characteristics with a mixed development. The site is 15 Acres in extent and is lush green with a rich variety of Herbal plants. The existing Ayurveda Research Institute (under the Ministry of Indigenous Medicine, Sri Lanka) was first established sixty years ago on this site and is functioning today with a small hospital and research laboratories. In the year 2010, with the new national development policy a proposal was made to reface this institute in response to ‘Ayurveda-Ecotourism’ concept.

Scopes of work of the project are as follows:

- A. Entrance gate development
- B. Development of the foot paths/landscaping
- C. Development of the pond and Buddha statue
- D. Meditation Pavilion
- E. Development in and around the existing main administration building
- F. Development in and around the hospital
- G. New five story hospital building

In response to the above discussed theories on creating meaningful architecture, Architects had put lot of effort to formulate an appropriate concept that focus on the psychology of sustainable development. The Architects “thought process” in this regard is as follows;

#### ***STEP 1***

Task interpretation:

- Promote awareness about Ayurvedic and Indigenous medicine (Enhance imagery)
- Promote research on Ayurvedic and Indigenous medicine (Provide facilities)
- Promote good habits in people and uplift health (Physical and psychological)
- International attraction

## **STEP 2**

Define the project aims and objectives:

- a) “Ayurveda for All”
  - Futuristic approach to Ayurveda
- b) “Urban oasis”
  - Located amidst densely built busy urban context.
  - Proposed development to cater to recreational and spiritual needs of urban residences.  
(morning exercise, yoga, family walk, etc.)

## **STEP 3**

Function, user and context analysis:

It is very important for the designer to have an ample knowledge on the function, user and the context of the project. In this case, the architect studied and gained a good knowledge on basic principles of Ayurveda and its involvement in the society. Further, the Architect conducted a survey on the intended primary and secondary users of the project derived an insight to the ultimate needs of the society. Physical context was analysed in terms of the sun path, wind direction, level differences, existing plants, potential views, etc.

## **STEP 4**

Inspirations and analysis of Precedence;

- a) The theory of five basic elements - Panchamahabutha (refer section 4.1.1 above)
- b) Traditional buildings in Sri Lanka (court yard houses, ancient monastic architecture, etc)
- c) Green buildings in the world
- d) Monumental modern buildings in the world
- e) Function specific buildings (Ayurveda buildings, spas, meditational pavilions, etc)

## **STEP 5**

Understanding the Architectural qualities to be achieved in the project:

- a) Fusion of tradition and modern characteristics (sentimental yet attractive/impressive to new generation)
- b) Stability, long term effect and mysterious qualities of Ayurveda
- c) Reflecting/symbolising five basic elements (Panchamahabutha)
- d) Sensual architecture that evoke sensational experience of the user

## **STEP 6**

Concept formulation:

After going through the entire thought process above the Architects main concept was to create architectural qualities that reflect ‘Ayurveda’ with the fusion of water, fire, earth, air and space and create an attractive place with intimate spatial qualities that make a positive impressions on ‘Ayurveda’.

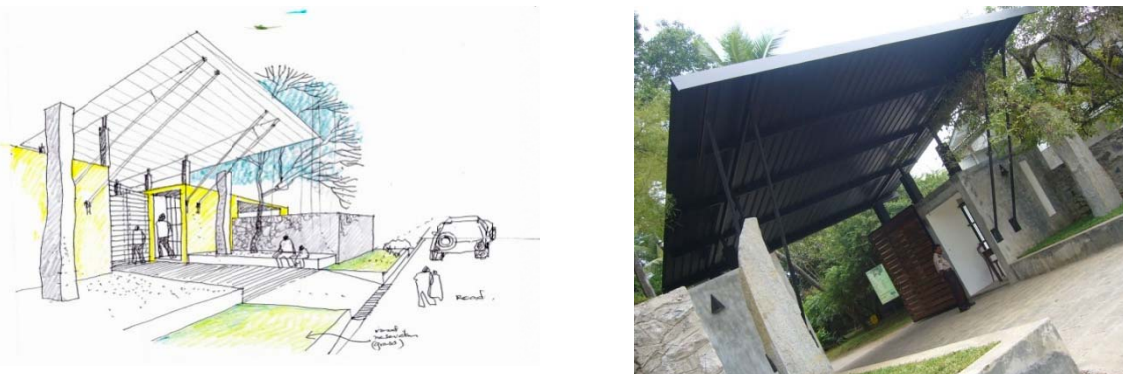


Figure 1: Entrance Gate of the Bandaranaike Memorial Ayurveda Research Institute, Navinna

The entrance gate shown in the Figure 1 above, reflect the above mentioned concept through the composition of design features. They are as follows;

- Air and space(Akasa, Vayu) - Lightness of the roof structure and its composition to embrace air movement
- Water (Jala) - The water cascade behind the ticket counter (internal courtyard) catches the attention of the approaches through the noise of falling water
- Earth (Pruthvi) - The stone pillars on the either sides of the gate reflects the heaviness, long lasting effect and the stability of Ayurveda
- Fire (Agni) - Engraved Copper plates (Ayurveda scripture) embedded on to the timber (Kumbuk) strips on the gate reflects heat and light

Further, the overall composition of the entrance reflects the fusion of traditional and modern elements. The design not only visually communicate with the user but also address all the other senses such as the touch (variation in textures), hearing (falling water), Smell (Aroma of herbal plants), etc. Therefore, the message of Ayurveda is communicated through each and every component of the design in a holistic way.

Likewise this concept is reflected in other sections of the development to communicate the total idea of the significance of healthy living style.

## **5.2. CASE STUDY 2: AYURVEDA-HERBAL PARK TOURIST CENTRE AT HABARANA, SRI LANKA**

The second project is located in the dry zone in close proximity to the world heritage sites of Sigirya-the rock fortress and Polonnaruwa- the ancient medieval capital of Sri Lanka. The 14 Acre land is covered with lush greenery and has access to natural spring water during the wet season. This site has a rich biodiversity with a variety of dry zone fauna and flora and is close to an Elephant corridor.

The proposed project has three sections such as; a) Herbal park, b) Spa and Boutique resort with seven Cabanas and c) 18 room hotel.

The project is invested by the private sector with the intention of responding to concept of Ayurveda-Ecotourism. The project not only aims to obtain financial benefits but also the holistic sustainable development in the country through the wellbeing of individuals intact.

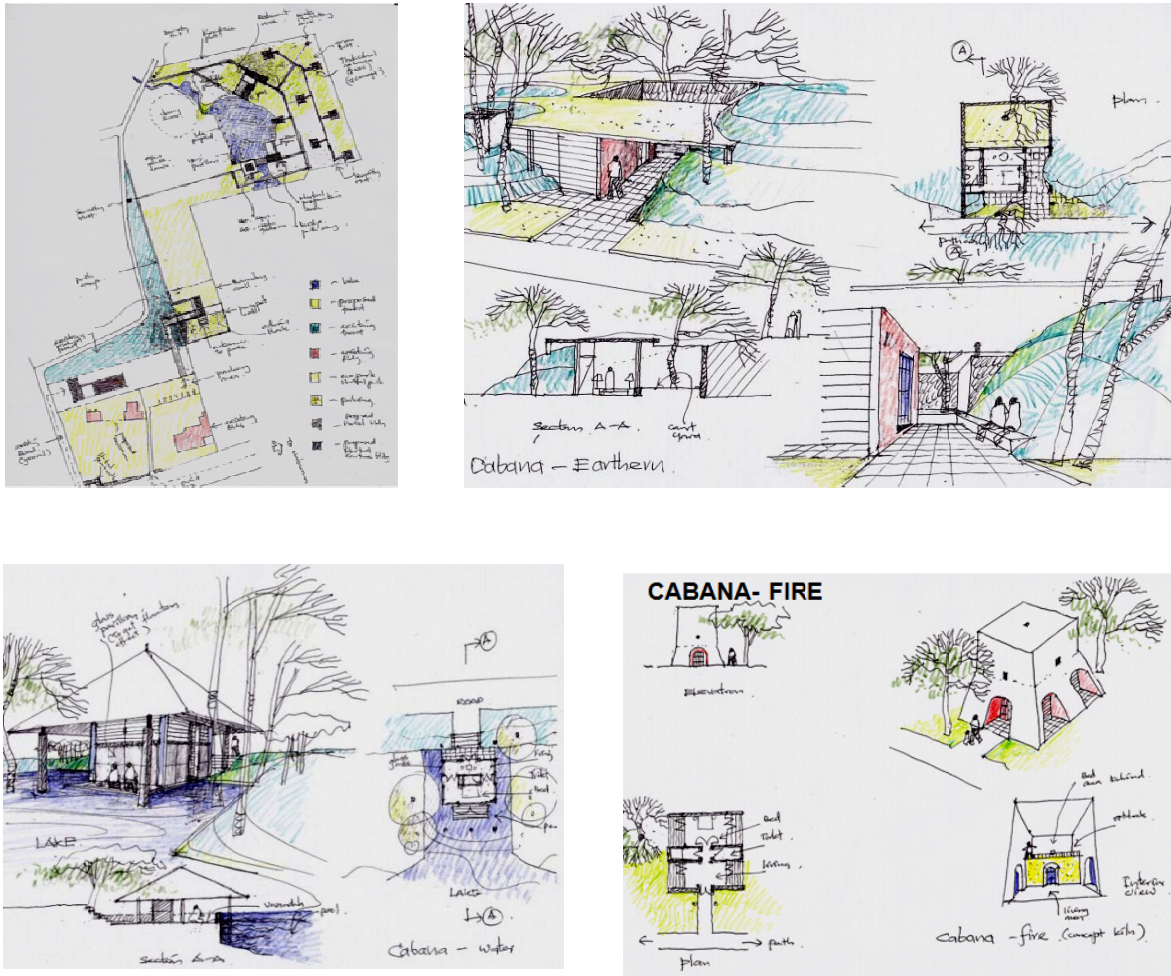


Figure 2: Habarana Site and the Proposed Master Plan

This paper would focus only on the entrance to the spa and the cabanas. Similar to the above discussed project in 4.2.2, this project also had made lot of effort to explore an appropriate concept that would make a positive impact on user psychology and on the sustainable development as a whole. Therefore the Architects thought process in this assignment was very much similar to the previously discussed project.

In addition to the inspirations drawn from the previously discussed Panchamahabuth, this project drew inspirations from the activities in the ambient environment. Few examples are as follows;

- Watch-huts on tree tops
- Elephant Kraals to keep out elephants
- Dambulla cave temple- drip ledge and the water caldron
- Kumara pokuna, Polonnaruwa – bathing pond





Figure 3: Proposed Entrance to the Spa and Boutique Resort was Inspired by the Spatial Qualities in the Cave Temples at Dambulle, Sri Lanka

The sound created by water drops falling in to the caldron, the cave vault, low lighting levels with mysterious qualities, unique aroma, etc found in the Cave temples of Dambulla inspired the designing of the entrance. The entrance is designed in such a way that it addresses all the four senses of the user and evokes the inner conscience that brings ultimate harmony with the ambient environment.

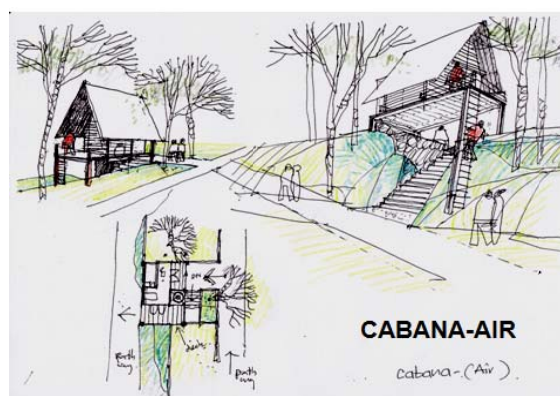


Figure 4: Theme Cabanas Representing Panchamahabutha Principle

Cabanas were designed to provide a variety of experiences to the user and were drawn inspiration by the five basic elements in Ayurveda.

Reflecting on this project proposal, it could be said that in this project, sensual architecture and conceptual/ theme architecture were combined to create a meaningful built environment.

## 6. CONCLUDING REMARKS

Meaningful built environment is significant in the process of sustainable development. This is mainly because when the created environment is meaningful and thought provoking it changes the behaviour of its user towards not only the physical sustainability but also the psychological sustainability. The creation of meaningful built environments emerge during the very early stages of inception and Architects thought process in formulating a concept plays a significant role in this regard.

This idea is explored in two on-going Architectural projects that communicate the concept of Ayurveda-

Ecotourism. Both case studies reflect the Architects approach to sustainable development through creating meaningful built environments, which demonstrate effective application of architectural theories such as Psychology of Sustainability, Sensual Architecture and Conceptual Architectural theories.

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