SPIRITUAL PRACTICE AND ITS INFLUENCE IN ARCHITECTURE: The Design of a Meditation Centre in Chatsworth

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DECLARATION

I hereby declare that this dissertation is my own unaided work and carried out exclusively by me, except where otherwise acknowledged. It is being submitted to the School of Architecture, Housing and Planning at the University of KwaZulu-Natal, in partial fulfilment of the requirements towards the degree of Master in Architecture. This dissertation has not been previously submitted for any examination or degree at any University.

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Signed 20th March 2012

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Note: All the illustrations within this document are by the author unless acknowledged otherwise. All photos were taken by author during the years 2010 and 2011.

DEDICATION

I wish to thank my parents first and foremost, because without their unfailing love, faith and support over the past years, I would never have accomplished what I have. To mum, words cannot express the gratitude for everything you have done for me; you have been a pillar of strength.

Most importantly, I wish to humbly thank by expressing my reverence and love to my spiritual Master, His Holiness Swami Paramananda, for his guidance on this blissful journey. This work is truly dedicated to you, Gurudeva.

ABSTRACT

The purpose of this dissertation is twofold. Firstly, it investigated the issues inferred by the topic, as how spirituality influences architecture, and secondly, through a critical analysis of a literature review with suitable precedents and case studies, it has set guidelines for the design a meditation centre for spiritual practices in Durban. The importance of such a centre was established by analyzing the architectural qualities that contribute in making a spiritual environment as stated in the hypothesis. Problems regarding the topic were identified as being the lack of architectural character and identity of spirituality. A sense of segregation was felt at various levels in socio-cultural groups through religion and race. Architecture is seen to be a medium to establish a dialogue among these groups by adhering to the need of self-education in terms of spiritual knowledge and practice. The key questions posed were the key elements to the secondary research that included an in-depth literature review based on appropriate architectural theories and concepts leading to a list of architectural design considerations. The theory of phenomenology was addressed by concentrating on the qualities that would evoke and invoke the essence of spirituality in an environment. The study attempts to understand the functional, physical and experiential qualities that contribute in making the spirit of a place. The connection between social and cultural groups was analysed under the theory of critical regionalism that also discussed the presence of nature, apart from culture, in creating an identity. The holistic nature of place and sacred architecture has been an essential area of research in an aim to discovering the metaphysical, symbolic and tactile qualities that enforce the pragmatic functional requirements of the centre. The need for an understanding of the science of meditation and self-education was beneficial in identifying the spatial, functional and spiritual requirements of the place. Symbolism, geometry, form and order informed the desired qualities that are driven by the cosmological science of Vastu Shastra in fuelling the space with positive energy. The relationship between man and his environment was further studied in terms of natural and sensory experiential qualities that would form a serene atmosphere. Precedent studies were carried out in different continents to extract similar aspects among various spiritual institutions. Primary research consisted of case studies where buildings were analyzed on specific criteria. Interviews were carried out with experienced members of the institutions for a better understanding of the spiritual practices conducted and the environment. The outcomes of these interviews were

critically and theoretically analyzed. The data collected through interviews and empirical studies revealed some pragmatic requirements of a spiritual environment. The study concludes that man cannot be separated from his environment - he is part and parcel of it. The study concluded that architecture is instrumental in binding man with nature whilst the understanding of the inner self and his senses enables him to become aware of his surroundings. The spirit within connects him with the spirit of the place established when suitable architectural design principles are applied. A holistic environment is then created and is suitable for spiritual practice. Such a place evokes a sense of spirituality.

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

Architecture is a phenomenon that defines the quality of the built environment whilst accommodating various functions. The quality of the spatial and functional arrangements in a given dimension provides character to a place (Norberg-Schulz, 1980: 8). Pallasmaa points out that architecture is multi-sensory bringing the users closer to things. The experiential value of architecture is serene and is accentuated with the interaction of the senses through movement and action in an environment (Shirazi, 2011). Norberg-Schulz (1980), states that architecture relates to the spirit of a place – an environment where man engages for his daily activities. Such a place can be defined by cosmic, spiritual and natural qualities such as light, sound, air, water bodies, green landscape, open-to-sky spaces and climatic conditions. Spirituality and architecture are interlinked where different layers lead to the creation of a holistic environment. The tactile and sensory nature of architecture enables man to integrate with the built environment physically, psychologically and visually (Pallasmaa, 2005: 31-32). These qualities of architecture can be expressed as space that evokes and invokes spiritual responses in people. These qualities can therefore be used to establish a spiritual place.

Durban is a multi-cultural city. At various events, people integrate socially and culturally. However, there is a lack of spiritual engagement in the environment (Ethekwini Municipality, 2011). Spirituality is aimed at all cultures and people of all communities are approached to embark on that journey. Spiritual architecture therefore serves the wider community in that all cultures come together at one place to conduct spiritual practices. According to Swami Paramananda (2005), spiritual practices are undertaken by an individual to develop his inner and divine qualities to attain eternal happiness and bliss. They are carried out to increase one's spiritual growth towards the experience of a state of Godliness. The post-apartheid era has weakened society at large with failures at different levels resulting in a malfunctioning world. A spiritual awakening is important so that people become aware of their actions. Meditation is a means by which such transformation in an individual is possible (Swami Paramananda, 2005: 2). Therefore, architecture is not limited to space and functions only; it also addresses various aspects such as culture, nature, society and people.

Analyses of aerial maps of Durban reveal a lack of spiritual centres in Durban; most of these institutions are found on the outskirts of the city and in remote areas causing

problems of inaccessibility (Google Maps, 2011). Hence there is a need of a spiritual centre in Durban to bring awareness through spiritual practices at individual and regional level.

1.2   MOTIVATION/JUSTIFICATION OF STUDY

Spirituality has been a major interest in the life of the author from a younger age. As a spiritual seeker, the author has embarked on the spiritual journey that has led to a profound understanding of the mind, body and senses. In this research, the intention is to discover the connection between architecture and spirituality. Spiritual knowledge is critical in understanding oneself and others in an environment. Architecture deals with spaces, people and their engagement in a place. Spiritual architecture is serene as it allows man to engage in nature and its immediate environment but with a strong sense of awareness of what he is surrounded with. However, my experience reveals a lack of built space conducive for effective spiritual practice. In spiritual architecture, there is a sense of order, discipline, geometry, proportion and simplicity. These qualities can be seen in the works of Tadao Ando who attempts to create a space that unites the body and spirit (Wu, 2006).

The proposal for a meditation centre is to assemble people of different backgrounds to tread on an inner journey to discover their inner potentials, strengths, weaknesses - in fact being self-educated. With the influence of the material world, man has detached himself from his own roots and values. There is a need to understand the architecture of one's body and how each organ operates to function better in the individual and how the body responds to the outside world. The result of meditation is proper reasoning, appropriate actions, refinement of one's qualities and rational thinking. Meditation is a science on its own to study (Swami Paramananda, 2005: 2). Architecture not only induces the essence the spirituality, but it also creates a spirit of the place. Architecture may lead to an appropriate expression of identity of spirituality.

South Africa is a country of historical and cultural background. There is a multiracial community in a democratic society (Ethekwini Municipality, 2011). There exists a cultural mix of people who are not only engaged in religious practices but many of them are seeking beyond for personal spiritual connection. The existing spiritual centres in

the country are proof to that (Google Maps, 2011). Spirituality is a universal doctrine and not community or religious-based. Spiritual knowledge can only be imparted through an enlightened spiritual master who will devise appropriate spiritual techniques for the individuals (Swami Paramananda, 2005: 2).

The topic of spirituality offers an opportunity to explore various architectural approaches in the research study. The existing architecture is less associated with spirituality, in general. However, sacred architecture is based on spiritual qualities of elements that will enhance the spirit of place. This study will identify the qualities required to create a suitable place to conduct spiritual practices. Issues and problems will be identified with a thorough study to bring out possible recommendations towards a design solution.

1.3   DEFINITION OF THE PROBLEM, AIMS AND OBJECTIVES

1.3.1   Definition of the Problem

With a country of high cultural mix, there is hardly a place that accommodates people of different cultures under one roof for one common interest, as in spiritual practice. Architecture could afford the opportunity for cultural and social groups to be united. Currently these groups function as smaller community groups rather than as a wider community of mixed socio-cultural groups and there is still a sense of segregation that occurs through religion and race at various levels. Architecture could become a medium to mediate and encourage a dialogue between different cultural and social groups.

The problem arises out of a need for self-education towards creating a sane society devoid of conflicts and ills that have been the outcome of the abuse of education, lack of tolerance and respect for one another. The issues faced are determining the spiritual qualities that architecture can bring to create space for the engagement of socio-cultural groups. These spaces must be designed to accommodate the pragmatic requirements of spiritual practices by embracing the socio-cultural and environmental context.

Most places are not necessarily designed to induce the essence of spirituality. Spiritual practices require distinct environments where the metaphysical, physical, psychological and visual aspects form part of the design. Places of spiritual well-being lack architectural character and are similar to any other places. Consequently, there is no

sense of identity of spirituality in architecture. Architecture has the potential to express the spirit of place as well as to invoke and evoke spiritual responses in people.

1.3.2   Aims

The aim of this dissertation is to research the qualities of architecture that will influence the human physiological, psychological and spiritual well-being towards establishing architectural guidelines that will facilitate spiritual practices such as meditation and yoga. These guidelines will be extracted from concepts, theories, precedents and case studies, leading to the formulation of a brief.

1.3.3   Objectives

- The main objective is to examine the spiritual qualities of the architecture that are required to design a meditation centre.
- Apart from functional and spatial arrangements, social and cultural aspects will be investigated.
- The sacred aspects of architecture will be analyzed with relevance to nature and context.
- Sensory experiences in architecture will be studied to understand the relation of man and his environment.
- Landscaping elements, geometry, proportion, symbolism and aesthetics will be areas of investigation to understand the factors required to reinforce the quality and enhance the character of spaces created for human occupation.

1.4   SETTING OUT THE SCOPE

1.4.1   Delimitation of Research Problem

Since spirituality is a universal doctrine and this project is catering for multi-cultural groups, it becomes difficult to cater for every different believer. However, the main challenge is looking for architecture that is appropriate for all religions. This research will focus on the architectural discipline as applied to develop a brief for a meditation centre in the context of Durban. The study will determine the challenges faced by people when they engage in and with the environment. The major areas of study will

include the architectural qualities that are necessary in creating a spiritual environment. The centre will accommodate spiritual practices influenced by the Indian meditation principles which accommodate both passive and dynamic techniques. This approach is open to a vast community as it offers a balance in techniques – the traditional and the modern. The principles of Vastu Shastra will be studied in this dissertation. Religious aspects will be discussed briefly in this document. Political and financial issues, being beyond the scope of this research, will not be dealt with. The focus will be more on the metaphysical, experiential and symbolic aspects of architecture.

1.4.2 Definition of Terms

Chakra: any of the seven main areas of spiritual energy in the body

Enlightenment: the highest spiritual state that is achieved

Mandala: plan that represents the cosmos symbolically and metaphysically

Mystic: someone who practises or believes in God by directly praying or meditating

Practitioner: someone who indulges in spiritual activity

Self-Education: process of being given insight and knowledge of the inner self

Self-Realization: process of understanding the inner self

Spirit: relates to the various levels of truth and depth about people. Spirit can be referred in terms of individuality or a connection within a group.

Spiritual Master: a teacher par excellence in the field of spirituality and who has attained Enlightenment

Spiritual Seeker: someone who is researching in the spiritual field towards self-realization

Vibration: spiritual energy in an environment

1.4.3   Stating the Assumptions

Durban is a colourful city with an abundance of culture and religion on its shores. A spiritual upliftment brings harmony to a place. As a whole, a community will benefit from the well-being of spirituality. Architecture is an indispensible tool as it serves to enhance the mental, physical, emotional and cosmic states of the individual.

1.4.4   Key Questions

(i) What are the essential qualities of architecture required to create an environment conducive for spiritual practices?

(ii) How do the human senses and experiences contribute to the spirit of a place?

(iii) What are the social and cultural attributes of architecture in terms of space and symbolism?

(iv) What contributions do natural elements provide in creating a sacred environment?

1.4.5   Hypothesis

The founding statement of this dissertation is that spirituality influences architecture. The physical, psychological, symbolical and tactile qualities of architecture are essential in creating an environment conducive for spiritual practices.

1.5   CONCEPTS AND THEORIES

This research will be based on an in-depth study of certain philosophies, concepts and theories that will address the issues and problems stated earlier in this document. As a result, a literature review will comprise these issues that will be critically analysed and strengthened with appropriate precedents and case studies. The experiential aspects and tactile qualities that enhance a place are discussed in the theory of phenomenology. The natural environment will be investigated in relation to qualities that affect man physically, mentally and spiritually. The relationship between man and his environment will be analyzed.

1.5.1 Phenomenology of Place

Existence is composed of people, animals, flowers, trees, earth, stone, water, houses and civilizations. The sun, moon and stars are the other natural elements. The landscape is believed to be a complete phenomenon. Place is an integral part of existence that is composed of materials, shapes, textures and colour (Norberg-Schultz, 1980: 6). A place has character; it can have functional and spatial arrangements with a given dimension. Cultural and environmental conditions affect the properties of a place. Phenomenology is therefore conceived as the 'return to things' where it is linked with psychology, ethics and aesthetics. Another aspect of nature is that it is a symbol of growth and blossom (Norberg-Schultz, 1980: 8).

Phenomenology is regarded as a multi-sensory architectural doctrine by Pallasmaa who pointed out that the architecture of the senses brings the users closer to things and also drives them within. The interaction of the senses – movement and action – is essential as one is then able to identify scales, see a direction and enhance perceptions by experiencing. He stressed on the complete experience with a building rather than to concentrate partly on visual perceptions (Shirazi, 2011). The understanding of the concept of spirituality is critical in this study leading towards its application in architecture.

1.5.2 Spirituality

The word 'spirituality' derives from 'spirit'. Spirit is often considered as opposed to matter. 'Spirits' are immaterial beings without a body. So in this sense, what is not material would be something without a body and would be considered spiritual, according to Casaldáliga (1994). Something is spiritual if it has the presence of spirit in it. Spirituality is said to be a dimension that is vulnerable to certain measures. People can be truly spiritual if there is a sign of a marked activity of spirit in them (Casaldáliga, 1994: 1-3). The soul has the potential to attain consciousness after being through innumerable animal and human lives. The process of cleansing the mind from all impressions, wrong education and habits is called the spiritual practice. The latter enables the individual to live eternally as a spirit. This state can be achieved if one lives in harmony with the laws of nature (Swami Paramananda, 2005: 1-2). Apart from the

sensory and individual experiences, the context has to be considered in terms of climate, topography, nature and culture. These aspects are explained in the theory of critical regionalism.

1.5.3 Critical Regionalism

The main concept of critical regionalism is that it integrates aspects of a global civilisation relating to the needs of a place. It is based on preserving a self-conscious programme. The associated factors are topography, the tectonic of the environment and sources such as light. Culture is perhaps the backbone of this hypothesis. It is referred to as world culture since it combines the disciplines of a universal civilisation. Place-form usually deals with space where humans integrate. Critical regionalism initiates a dense form and resonance in architecture where cultural density predominates (Jencks, 1997: 97-98). Critical regionalism is directly linked with nature. The culture of the region is influential in creating a form. The engagement of culture and nature can be used to illustrate the poetic essence of place in the form of light and art. Ventilation strategies also reflect the nature of the local culture (Frampton, 1981). Kenneth Frampton states that the governing principle of architecture is the tectonic rather than the scenographic. He stresses on the way form is expressed in structure - in a poetic way that combines the material, craftwork and gravity (Jencks, 1997: 99). Nature consists of the five main elements: air, water, fire, sky and earth. Vastu Shastra is an Indian science of construction that makes use of cosmology and these elements to create a place vibrant with positive energies.

1.5.4 Vastu Shastra

Vastu Shastra is usually associated with sites and buildings that would be designed to create an energy flow. The principles are laid down by the rules of cosmology: 'the sun's path, the rotation of the earth and magnetic field. Vastu Shastra propagates the creation of energy and positive vibration, flow of balance and harmony are necessary to create a holistic environment. It leads to a successful and stabilized life. It is a medium that links the outer and inner spaces. Prasad (2007) says that it defines one's path which is free from any obstacles by building a positive connection between the microcosm -

the individual and the macrocosm – the outer world (Prasad, 2007: 17-19). The topography of the plot is important as it has direct impact on the life of the occupants. According to Reddy (1999), in selecting a site, it is advisable to select a site that has a square or rectangle shape. Angular shapes are avoided as they do not allow direct energy flow. There is much happiness and prosperity if a site is spacious. A slope towards the north or east is blissful to the occupants. An elevated land on the west or south edge equally brings prosperity (Reddy, 1999: 54-56). Apart from the four main cardinal points: north, south, east and west, the four intermediate cardinals: northeast, northwest, southeast and southwest, are more important in Vastu since the directions converge to make an angle. The cardinals have symbolic meanings. Reddy (1999) writes that nature consists of the five elements: sky, air, fire, earth and water. Vastu is a means to capture the positive bountiful power of the three elements; earth, water and fire in an appropriate and proportionate manner along with air to create peace and prosperity of human beings and the world at large. These elements of nature help in creating a holistic environment by ensuring a balance between man and the material. Reddy states that the main characteristic of the elements: sky, air, fire, water and earth are sound, sense of touch, shape, taste and sense of smell respectively, according to Vastu (Reddy, 1999: 14-16). The mandala is a plan that represents the cosmos symbolically and metaphysically. In the Hindu cosmology, the surface of the earth is represented by a square with four corners that refer to the sunrise and sunset, the north and south direction. The Vastu Purusha Mandala relates to the ancient Hindu architecture that is based on Vastu Shastra. Vastu refers to the physical environment while Purusha refers to the energy and soul of the cosmic man. Vastu Purusha Mandala therefore incorporates the heavenly bodies and the supernatural forces (Lakshmi, 2000: 107). The Vastu Purusha Mandala is usually in a square form. There are various types of mandalas depending on the way in which the main square is divided. The central space of the mandala is called the Brahmasthana where major construction should be avoided. The zoning of functions is determined by the position of Gods in the mandala. The idea of a northeast alignment is to maximize light which in metaphor represents the sun that is a source of knowledge, consciousness and ultimately spiritual enlightenment. Further studies will be on the various architectural qualities that form sacred architecture.

1.5.5   Place Theory and Sacred Architecture

Place theory is based on the assumption that the characteristic of a place is also accompanied by the human response. The physical quality of space has an addition of meaning given by the users. For instance, trees in the grassland may serve as a council place for meeting of the local people. The trees can be associated with a kind of sacredness since it projects the image of human events (Crowe, 1995: 76-77). Humans are versatile creatures; they adapt to the different conditions of environments – physical, social and spiritual. Man lives in an environment of beauty that he seldom acknowledges owing to human arrogance. Natural beauty induces reverent feelings about the spirit. The human spirit can be a vessel in transcending influences to shape and nourish individual environment. Currently the world is stirred by social disharmony that causes stress, psychological and hormonal imbalances that propagate illnesses. Beautiful places are ecological in nature and foster good health. These places are plenty of 'integrity, wholeness and balance'. The spirit of a place can be experienced when given a measurable value (Day, 2002: 111-113). Sacred architecture which is believed to be the Kingdom of God on earth is actually that of proportion. Nowadays, its elements and form have been reduced to minimalist architecture. Cosmic architecture is associated with a variety of forms. The divine order requires geometric expression to relate to its earth nature (Day, 2004: 110). The psychological and social aspects of the bond between man and place will be analysed; the relation between the senses of the human mind and architecture. The research will also look at order, proportion and geometry and their association with cosmic architecture.

The research study leads to a systematic approach in terms of research findings and methods that are appropriate to the topic. A list of research materials will be established

1.6   RESEARCH METHODOLOGY

1.6.1   Research Method

Research methods have been explored to provide the basis of collection and analysis of data which was deemed necessary in satisfying the objectives of this study. A systematic method of collecting and analyzing information was established to recommend solutions to problems and issues inferred by the topic. The methodical

approach of this study concentrated on site investigations. The main objective of this study was to:

- examine the spiritual qualities of the architecture required to design a meditation centre.

In addition to the main objective, the following secondary objectives were proposed:

- Investigate the social and cultural issues apart from functional and spatial arrangements,
- Analyse the sacred aspects of architecture with relevance to nature and context,
- Examine the relationship between man and his environment through sensory experiences in architecture,
- Make recommendation accordingly to reinforce the quality and enhance the character of spaces created for human occupation.

1.6.2   Research Technique

The research methods consisted of an empirical and qualitative data by observation of space and the way people engage in the environment. An empirical method is an unscientific method that is based on experience in gathering data. A scientific research method is a structured way of solving problems. In this research, a qualitative research approach was used. This method was based on the analysis of behaviour, attitudes and experiences (Dawson, 2009: 23). Primary research consisted of interviews which were qualitative since they attempted to explore an in-depth opinion from the participants (Dawson, 2009: 14-15).

Qualitative research can be analytical, descriptive and experimental. Analytical research comprised of historical research that dealt with events that already occurred with a focus on organisations, built environments and people. With a descriptive research, the focus is with status. An interview is descriptive whereby questions were rephrased and additional ones were asked to clarify responses to secure more valid results. Although interviews could have been done over the phone, face-to-face interviews were carried out for clarity of answers. Since descriptive research is structured, it was chosen in considering all variables and in answering the objectives of this research study (Bryman

et al, 2007: 81). Descriptive research also comprised case studies that were conducted in South Africa in the Durban context. The local case studies included the Sivananda International Cultural Centre at La Mercy, the Umgeni Temple and Hare Krishna Temple in Chatsworth. Case studies also included the Prashant Ashram and Lao Tzu Meditation Centre in Mauritius. The aim of this research was to provide detailed information about the institutions. Case studies formed part of primary research that included investigations and analyses where site visits comprised photographs, measurements and review of architectural drawings.

Interviews are well-known research techniques for collecting primary data. The interview method was chosen because it aimed to seek accuracy and truth of facts by carrying out primary research through which observation of people's behaviour in an environment led to an analysis of the researcher's interpretation (Ghauri *et al,* 1995: 57). Personal interviews were face-to-face where verbal communication was established. Here, the interviewer attempted to obtain information, opinions or beliefs from the interviewee (Ghauri *et al,* 1995: 65). An interview is a method that is designed to project a vivid image of the participant's perspective on the research subject. Here, the respondent was seen as an expert and the interviewer was considered as a student. The researcher interacted with participants by asking questions in a neutral manner, listening attentively to the responses and asking probes on those answers. Interviews are beneficial as they contain in-depth responses and there is an interpretative approach from the respondent based on what he perceives as a belief, event and phenomena. Therefore interviews were appropriate when sensitive issues and subjects that involve feelings, experiences and opinions were dealt with (Mack, 2005: 29-30).

The qualitative research technique looked at variables in the natural setting in which they were found and they were studied in all their complexity. The technique also analysed various aspects of behaviour and how they led to decision making. Qualitative data allowed the researcher to understand the holistic description of events, procedures and philosophies occurring in natural settings to make accurate decisions (Sekaran, 2002: 32). Qualitative research draws data from a variety of sources (Cooper *et al*, 2008: 162) that included the following:

- People (groups or individuals),
- Institutions or organizations;

- Texts (published/virtual);
- Environments and settings (visual, sensory or virtual)
- Events and happenings

1.6.3   Research Tools

The secondary research consisted of the review of literature that was based on the concepts and theories stated in the previous section in order to address the research questions. The collection of data was carried out using the following resources: libraries and related resources, the computer and related resources, measurements techniques, statistics and communication tools. The literature review consisted of a critical analysis from which recommendations and solutions for the research problems would be extracted.

The research tools comprised references that were sourced from books, journals, articles, papers, electronic articles, precedent studies, raw data from interviews and questionnaires. The research problem and the selected case study were studied comprehensively as per the observations made. The collected materials were in the hard copy format that includes images, diagrams, photographs and sketches. Techniques of measurement were also applied to determine specific data. Substantial measurement was mostly used for objects and things especially in measuring lengths of an enclosed space.

1.6.4   Data Presentation and Analysis

In this research, a semi-structured interview was carried out. The interview was structured in terms of sequence and words. The interview format, usually called a semi-structured interview, was designed to be identical to each respondent so that the variations existed between the respondents (Perumal, 1988: 120). A list of architectural considerations was extracted from the literature review and precedent studies. Specific topics were addressed for a better understanding of the case analysed. The interview questions were derived from the list of architectural considerations and were aimed to be specific and elaborative. The questions were written in a simple language to facilitate the respondent to understand them. Probes were added in the conversation by the

interviewer to obtain detailed information. The interview was set to be brief and concise so that it was carried out in a minimum time considering the availability of respondents. The location of the interview was set in a silent area so that a better understanding of the questions and interpretation of the answers were established for an efficient interview. The interview information was captured with the use of audio recording equipment. The latter allowed a complete record of recording for analysis, including what was said and interaction between interviewer and interviewee. Hence, the interviewer could concentrate on listening to what the respondent was saying. Data was later transcribed into words.

The respondents were those who had been closely involved with the institution analyzed in the case study. They are experts in the field and could respond based on their personal experience. A validated letterhead of the University of KwaZulu Natal was produced introducing the study, outlining the research objectives and encouraging relevant respondents to participate. This letter was handed to the respondents beforehand personally or via email so that an appointment for an interview could be set. The respondents chosen were a member of the managing committee, a full-time residing inmate and a devotee at the Sivananda International Cultural Centre – the main case study. The aim was to ask the same questions through the interview and analyze the data critically thereafter.

Research data was considered where philosophical and historical background information of the case study would be required. The qualitative research method not only allowed a better understanding of the exterior environment but also helped to grasp the quality of the inner spiritual space. The outcomes would recommend better solutions for improvements (Zami, 2010: 28). The collected research materials would form a background and analysis of the chosen site. The main focus would be how to incorporate architectural qualities in space whilst considering its contextual setting, the historical framework and the social activities that would take place within the site, cultural implications and the influence spirituality would have on the built environment.

1.7   CONTRIBUTION TO KNOWLEDGE

There is little sensibility about the topic of spirituality currently in society. Architecture is an instrument via which a dialogue can be established between man and his environment. Architectural qualities can be applied to create the spirit of the place. The research is twofold comprising spirituality and architecture. Both aspects are studied in relation to one another. Research on cultural and regional context has helped to understand the fragmentations that exist. Architectural principles are applied to synthesize ideas that will aid in creating a harmonious environment. Social and urban issues are viewed alongside psychological aspects. One of most important aspect of study is that of the human body whose functions are less known to people. A spiritual insight of the different layers of the human body and the human senses was brought forward. The current living society has failed in terms of education as a result of which all sorts of ills are present. The need for self-education is therefore important as it contributes towards changing the mindset of individuals. Architecture is pivotal by designing responsive environments whereby the users engage harmoniously in space and with one another. This research study contributes towards establishing awareness of architectural design when applied in a spiritual environment.

1.8   STRUCTURE OF THE STUDY

The dissertation document is comprised of various chapters and is structured as set out below:

Chapter One introduces the topic and the issues related to it in the architectural context. The problems and questions are stated with the statement of a hypothesis. Concepts and theories are researched and analysed in terms of a literature review in the following chapters.

Chapter Two includes the phenomenology of place and the genius loci. It also deals with spirituality and religion. Natural elements in the environment are also discussed.

Chapter Three analyses the theory of critical regionalism in terms of the cultural, regional and climatic aspects that relate to a sense of place and identity.

Chapter Four discusses aspects of place theory and deals essentially with the different aspects of sacred architecture including geometry, proportion, order, symbolism and numerology.

Chapter Five consists of analyses of international buildings from different continents in terms of architectural and spiritual qualities. These buildings are thoroughly and critically analysed in this section.

Chapter Six involves the analysis of case studies using appropriate research methods and materials. A deep understanding of the case studies is sought through personal visits, investigations and experiences on site.

Chapter Seven consists of the analysis and discussion of the data gathered. This section summarises the whole research carried out. A theoretical critique is made on the case studies explored.

Chapter Eight includes a conclusion of the research study in terms of issues dealt and recommendations are proposed to check whether the research has answered the questions set in the initial stage of the document whilst proposing further research for areas that may help profound investigations.

Chapter Nine deals with the development of a design brief with the requirements of the client informed by the critical analysis of literature review, precedent and case studies. A schedule of accommodation will be prepared to include the typology of spaces and size required.

Chapter Ten presents site selection criteria where possible sites will be picked and a suitable one will be best chosen for development of the project. A site survey and analysis will be conducted together with an urban design scheme.

Chapter Eleven concludes this document with a design resolution of this project. Conceptual and urban frameworks will be established. Environmental and technical resolutions will also be considered in this section.

1.9   CONCLUSION

Architectural qualities are important to improve and enhance a place towards establishing a holistic environment. Man cannot be isolated from his environment which he is part and parcel of. The essence of spirituality focuses mainly on the quest to search for the true self where man engages in a process to discover the real nature of consciousness. The true self has a profound identity as compared to that of the outer world which is ever changing. The tactile nature of architecture is of major importance in creating a place marvelled by the individual's interaction and experience. The socio-cultural, environmental and physical issues will be tackled in an attempt to find the appropriate design principles that will lead to the conception of a brief. Concepts and theories will be thoroughly researched and critically analysed in order to extract suitable recommendations for the research questions posed in this study. The following chapter deals with a literature review that addresses the related theories and concepts that are supported by appropriate precedent studies.

CHAPTER 2

PHENOMENOLOGY OF PLACE AND

NATURAL ELEMENTS IN ARCHITECTURE

2.1   Introduction

This chapter firstly aims at investigating issues of spiritual practice and its benefits to the individual. A thorough research is carried out to understand the relationship between spirituality and architecture. The phenomenology of place relates to the consciousness level that one experiences internally and externally in an environment. The notion of the genius loci or the spirit of place will be studied to understand the attributes of existential spaces. Spirituality is strongly linked with nature and religion. An insight of that connection will aid to understand the need for self-education and how a holistic environment can be created. The second part of this chapter includes the influence of natural elements in architecture and the influence of natural landscape in architecture. Natural elements and forms are the pillars of spiritual architecture and have symbolic meanings in creating an experiential place. Spiritual aspects will be investigated in the built form. Symbolic meanings will be identified and various examples will be looked at to understand the functional, spatial, aesthetic, environmental and socio-cultural aspects. The natural landscape will be explored in terms of the natural forms that they provide to the environment.

2.2   Phenomenology of Place and Genius Loci

Founded in 1900 with Edmund Husserl publication, phenomenology challenges many historical assumptions about the split of the mind and the body usually referred to as the Cartesian Dualism formulated by René Descartes (Ots, 2011: 167). The rationalist and intellectualist approach suggests that ultimate truths can only be discovered by sitting motionless in a dark environment and trying to reflect deeply. However, phenomenology proposes a contrasting method that encourages an active engagement with the world. The body is not seen as a barrier between the inner and outer world. However, Maurice Merleau-Ponty states that one has to go to the depth of reality (Ots, 2011: 167). Christian Norberg-Schulz advocates that the spirit of place becomes effective when there is activity in an environment where a harmony is established among the natural resources, local climate and traditional building methods (Ots, 2011: 167). The language of this doctrine consists of the perception of space, the sensory qualities of light, sound and temperature without neglecting the tactile quality of materials. The philosophy is ultimately presenting solution from the experiences lived

and adopting them into the built environment and meeting the needs of users (Ots, 2011: 167-168).

Edmund Husserl mentioned that truth is influenced by the human mind. He attempted to discover truth which he said is not reducible to psychology (Husserl, 2011). On the other hand, Friedrich Nietzsche argued that knowledge is relative to something and cannot be associated to one particular viewpoint only (Husserl, 2011). According to Husserl, phenomenology is a scientific approach of understanding the important compositions of consciousness. He excluded the unnecessary elements from it and gathered the basic aspects that constitute consciousness. Husserl viewed phenomenology as intentional where consciousness was directed to something – an object. The phenomenological approach is different from a natural viewpoint which is the ordinary day-to-day state of affairs where Husserl's focus was on the consciousness of things. After a decade, his work encountered a shift from intentionality to the nature of consciousness. In the 1930s, the theory was given a new dimension. It shifted towards the practical aspect. It concentrated on the 'existential dimension of human knowledge' (Husserl, 2011). However, Martin Heidegger displayed an anti-Cartesian approach as opposed to Husserl (Heidegger, 2011). His method discarded any dualism that existed between the body and the mind, and any separation from consciousness, experience and the mind. Heidegger's philosophy was based on a sense of 'own-ness' – a personal validation. He utilized the word 'Dasein' that means 'being there'. On a deeper level, it represents a unitary phenomenon of not being in the world but instead it refers to the nature of 'being'. The notion of Dasein therefore acknowledged that the self is inseparable from the body's existence. Therefore Heidegger's philosophy extended to an existential phenomenology (Heidegger, 2011). Heidegger added that consciousness is non-essential in comparison to the pre-eminence of one's survival. In this regard, the mind is merely an effect rather than the cause of existence. His perception was more psychological. He expanded the phenomenology theory so that it incorporates the understanding and experience of 'being' – the doctrine was therefore based on the study of 'being' (Heidegger, 2011).

Husserl (2011) used the intuitive nature of the phenomena to extract the most important experiences – his work was called the 'transcendental' phenomenology. Eastern philosophies of the Zen Buddhism and Taoism were loosely linked to Heidegger's thought (Husserl, 2011).
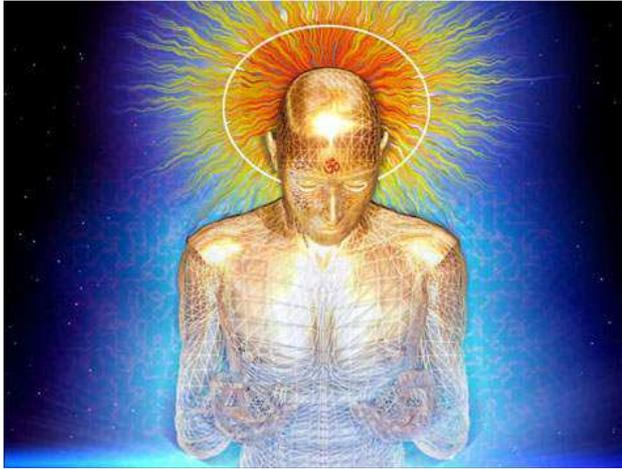
Plate. 2.2-1 illustrates the consciousness level in man; an aura illumines the mind when full consciousness is reached (Swami's Daily Schwag, 2010).

Assumptions existed as a base to the knowledge of essences, regarding an external world. Only essential constitutions of consciousness (Plate. 2.2-1) were applied by reducing the whole. The leftover was termed as a pure 'transcendental' ego. Therefore, 'transcendental' phenomenology is mainly the study of the prime structures that are left in pure consciousness (Husserl, 2011). In contrast, existential phenomenology rejects the notion of the 'transcendental' ego. Heidegger (2011) is of the opinion that a conscious being is present in the world as opposed to what Husserl states when he claims that the world is transparent before the conscious. Transcendence is part of existential phenomenology as it is the source from which the world arises, including the natural and scientific ways of ontology. Heidegger's philosophy was more fundamental than scientific, which is based mostly on everyday knowledge. Hence, his approach was a metaphysical ontology where the main focus was on 'being' (Heidegger, 2011).

Norberg-Schultz (1980) states that, a place has character; it can have functional and spatial arrangements with a given dimension. Cultural and environmental conditions affect the properties of a place. Phenomenology is therefore conceived as the 'return to things' where it is linked with psychology, ethics and aesthetics. Another aspect of its nature is that it is a symbol of growth and blossom (Norberg-Schultz, 1980: 8). Phenomenology is regarded as a multi-sensory architectural doctrine by Pallasmaa who pointed out that the architecture of the senses brings the users closer to things and also drives them within (Shirazi, 2011). He criticized the approach that was looking at phenomenology from a distant perspective and advocated for a phenomenology from within. Clearly Pallasmaa had his thoughts rooted in sensory architecture which he

emphasized on its experience. The interaction of the senses – movement and action – is essential as one is then able to identify scales, see a direction and enhance perceptions by experiencing. He stressed on the complete experience with a building rather than to concentrate partly on visual perceptions (Shirazi, 2011).

Pallasmaa suggested an approach that should be used to understand architecture in detail since it affects the senses and the body as a whole (Shirazi, 2011). This mode of interaction creates nearness and appreciation. He condemned the one-dimensional image-based approach and gave importance to a broader picture; one must experience an object in its context. His peripheral perception therefore converts the retinal images as an experience of space and the body. His ideology is called fragile architecture as it is contextual, multi-sensory and responsive to the experiential interaction. Reza Shirazi (2011) therefore termed Pallasmaa's approach as fragile phenomenology whose focus is on lived experience and an enriched body engagement. However, Shirazi identified the weaknesses of this doctrine. The 'near' attention does not include architecture at a macro level, hence isolating it to a particular place rather than a larger scale environment or region. Norberg-Schulz's Genius Loci is excluded from Pallasmaa's phenomenology which considers only the building in detail (Shirazi, 2011). Another drawback is that the theory is not continuous. Pallasmaa simply hinted at the broader ideas but has no convincing evidence, according to Shirazi (2011).

The poststructuralist movement had opposing views to phenomenology (Stoller, 2009: 707-737). It considered experience as 'ahistorical' when it is not associated with space and time. In contrast, Heidegger's Dasein is an example of the historical aspect of experience (Stoller, 2009: 707-737). The same point is seen in Husserl's phenomenology. Another critique of phenomenology by poststructuralists is that the perception of any object can be experienced in an immediate way. It is assumed that perceptions are not influenced by the subject and the perceptual experience is unmediated. The poststructuralist critique says that objects of experience do not appear immediately and experience does not occur in an unmediated way. The immediacy of experience is regarded as the intentionality of experience in phenomenology. Intentionality is referred to as the basic characteristic of experience where a given something is always experienced as something. Poststructuralism is of the opinion that an experience has always been interpreted; that experience is an interpretation itself. Phenomenology agrees on this point and emphasizes on the fact that experience is never

separate from interpretation but instead it is formed at all times with a sense of experience (Stoller, 2009: 707-737).

Husserl pointed out that experience required an activity. An experience is related to a field of experience (Stoller, 2009: 707-737). Similarly, vision stipulates a field of vision although everything may not be visible since the visible part is surrounded by the invisible part. A simple example is what a person sees when he opens his eyes. If the view is forward, he cannot see what is behind and has to turn around. Hence the vision requires a sense of intervention from the viewer. Not all objects are visible at the same time or on the same manner (Stoller, 2009: 707-737).

The genius loci in the eighteenth century symbolised the transition of concepts pertaining to the site as a place that would represent a whole consisting of space and its integration in the context. The spirit and nature as a whole are referred to as the genius that governed the place. Surface and hidden beauty were distinct in relating to figure and form. The figure was considered as an element that was available to the senses – shape, colour and weight. Form was of a hidden nature and usually referred to the intuition and imagination. Genius loci are basically identified as the stability of a site that changes with its inconstant qualities (Leatherbarrow, 1993: 53-55).

The genius loci, often termed as the spirit of place, refer to a deep understanding and awareness of the place. The concept originated from the Roman mythology where guardians in the form of angels called the genii give life or spirit to a place or people. The term is now referred to as the distinct characteristic of a particular site in the modern world. The spirit is governed by the notion of inspiration. The genius is the essence of the place (Ots, 2011: 188-189). In the classical Roman civilization, the genius loci were referred to as the 'protective spirit of a place'. In the contemporary age, it is denoted as the atmosphere of a particular place. Norberg-Schulz (1980) explains this ideology by stating that man is able to inhabit a space when he has the aptitude to control his inner self; feelings and conditionings, and consequently associates himself with the outer environment. He affirms that a place is a space that has character. The genius loci are a state of reality that man engages in his day-to-day endeavours in life (Norberg-Schulz, 1980).

Norberg-Schulz (1980) indicated that places are qualitative in nature since each component relates to one another where the place is experienced as a whole. Therefore,

a place is regarded as a complete phenomenon and it cannot be further reduced to its elements, for example spatial linkages (Norberg-Schulz, 1980: 8). The quantitative aspect of place consists of spatial distribution and dimensioning. However, functions occur in different ways, for instance sleeping and eating. Therefore, the functional side varies with different cultures and environmental conditions. Hence, there is a particular identity associated with any function (Norberg-Schulz, 1980: 8).

This identity as defined by the genius loci evokes a distinct character. For example, it could be 'festive, solemn or protective' in the case of buildings while landscapes can be 'fertile or threatening'. Character is given definition by the construction methods applied and varies with time (Norberg-Schulz, 1980: 14-15). An environment has character through which people formulate a perception that consolidates an orientation and a sense of security. Norberg-Schulz confirmed Lynch's (1960) works, by saying that a system of orientation is developed in each culture and it leads to create an environmental image. He found that orientation has been hugely influenced by natural elements. As a result, orientation and identification are interlinked and are meaningful experiences in architecture (Norberg-Schulz, 1980: 20).

In the architectural language, Norberg-Schulz describes that place making should have a spiritual attribute and not concentrating only on creating a physical place (Ots, 2011: 188-189). The genius loci can therefore be considered as any quality that defines the experience of a place. Usually the genius loci will consist of a unique and impressive natural landscape (Ots, 2011: 188-189). The spiritual nature of place is very important to understand. The next section describes spirituality and its associated practices.

2.3   Spiritual Practices

Spiritual practice needs to be undertaken by an individual on his inner journey to find his inner self. However, this endeavour is not achieved during few minutes, few days or few months. It is a continuous and daily meditation or devotion practice that would eventually lead to the ultimate peak of experience. Swami Paramananda (2004) points out that the universe has been created for this purpose (Swami Paramananda, 2004: 94). There are different methods that are used on the spiritual journey leading to the same goal at the end. The science of meditation is a major route that the individual can

embark on. This doctrine is a holistic and universal approach of mind transformation that leads to the expansion of consciousness (Swami Paramananda, 2009). The word 'spirituality' is stimulated as a conception of mystery, sects and disciplines in many people. Spirituality is the greatest adventure that can be undertaken by the human mind. On a global level, spirituality is a tool that can enhance a living environment. Spiritual architecture is used to deliver the message of the inner self and inner peace. On an individual level, spirituality is the ultimate resolution to know about the self to attain oneness, if not it is the meeting point of human and nature at a subtle medium. Spirituality is believed to be the ultimate solution to all problems. It has been the endless and tireless efforts of spiritual masters to bring about awareness of spirituality in the world. Their efforts have been recognized by scientists who admit that their efforts seem to fail before the laws of nature. The nature of pure spirituality has been distorted and therefore people have negative attitudes at those who are supposedly spiritual. To really know, an individual must be brave to experiment and study. Swami Paramananda (2005), an enlightened spiritual master, describes spiritual practice as the process of liberation of the mind which has been engulfed by numerous impressions, wrong education and habits. Hence, spiritual practice aims at making the individual realise and experience that he lives eternally as a spirit (Swami Paramananda, 2005: 2).

Plate 2.3-1 illustrates the seven chakras in the human body (Swami Paramananda, 2004: 1).

The seven chakras (Plate. 2.3-1) which are the energy pools in the human body need to be activated to attain that purest state of awareness. One does not need to believe in anything or in any religion. One is accepted as a human being irrespective of his origin, race, religion, beliefs and social status. The main genesis of all the ills affecting human beings is the unconscious layers that have thickened with time in the mind. The practice of meditation can aid in attaining cosmic consciousness or enlightenment (Swami Paramananda, 2009).

The latter is a state of pure and unlimited awareness, ineffable peace, infinite creativity and virtue. Meditation is the science par excellence that is geared to bringing an intrinsic transformation of the heart and the mind. The aim is to give birth to a new individual who is free from the veil of ignorance, madness and conditions that currently dominate the twenty-first century. There are various techniques that are given by a spiritual master to practise in a certain era; some are passive and others are active methods. Rebirth therapy is a dynamic meditation technique that can transform the heart and the mind if practised on a regular basis. It is basically a second birth: a new start to have a fresh, light and healthy body. This technique develops the mental faculties and expands awareness of the self. Usually it is practised in an open air environment amidst nature. It is a group meditation technique to create mass positive energy in the atmosphere (Swami Paramananda, 2009).

Spiritual retreats are common and part of the practices. Usually they occur on consecutive days where the devotees have to observe strict disciplines before and while conducting the techniques. They have to cleanse their body; refrain from wasting sexual energy, use the latter to boost the energy from the base to the third eye and enter the state of consciousness, practise vegetarianism and yogic exercises to keep healthy, light and fit. Satsangs are sessions presided over by the spiritual master who imparts his knowledge, wisdom and experience of the mystic order to the spiritual seekers and devotees (Swami Paramananda, 2009).

Techniques are numerous on the spiritual path. Each spiritual seeker must be advised and guided by the spiritual master. The spiritual seekers, in turn, share their experiences after they have practised the techniques. It is a long life practice to reach the ultimate aim of oneness. (Swami Paramananda, 2009).

Plate 2.3-2 illustrates the energy flow in the body upon meditation; the chakras are activated - energy explodes and expands to the crown chakra (Swami Paramananda, 2004: 16).

Swami Paramananda (2009) writes that hatha yoga is an exercise to 'train the body to stay motionless for long period of time' to allow the senses to become calm. Activity should be carried out to arouse the unconscious layers and spark off the chakras (Plate. 2.3-2) in an aim to transform them. It is advised to start any spiritual practice during the early hours of the morning because at that time there is a great waking energy of the whole nature. Unlike the morning, the night is not conducive for spiritual practice. One needs awareness to start the day and face the challenges ahead. However, sleeping is not only to rest the body but also to refuel the energy lost during the day - meditation is the refuelling mechanism (Swami Paramananda, 2004: 97-99).

The concepts of human nature, personhood and spirituality are associated. The expressions that come out from human beings are usually a combination of the mind and body with needs that are rational, spiritual, emotional, physical and social. Spirituality is a metaphysical force while personhood is an outcome of the human actions. Hence spirituality can also be considered as the root of the possibility for man to progress (Ponomareff, 2006: 71). Spirit is the name of the deepest dimension of a quality than man possesses. It is that same personal depth that allows humans to vibrate, be inspired by life and experiences, and understand the mysticism of the cosmos. Spirituality is therefore a measure of humanity. On another plane, it is most profoundly humane since people are the image and likeness of God (Casaldáliga, 1994: 5). Spirituality refers to a reflexive process – the individual needs to be attentive towards one's attention or being aware of one's awareness. Spirituality is about relationship and can be referred to as 'relational consciousness'. An embodied spirituality transcends the biological state. The individual lives no longer by duty and obligation but experiences freedom and joy. Spirituality is said to be fluid and always in the making. It underpins curriculum and the contemporary world associated with the mystical metaphysics that can only be acquired through solitary spiritual experience or an original vision which marks the point of reference for self-education (Ota, 2007: 117).

2.4   Spirituality and Religion

The word 'spirituality' is derived from the term 'spirit'. Spirit is often considered as opposed to matter. 'Spirits' are immaterial beings without a body. So in this sense, what is not material would be something without a body and would be considered spiritual, according to Casaldáliga (1994). The concept of spirit and spirituality descends from the Greek culture and mostly Western. However, the spirit is referred to as evil in the Bible. In addition, spirit is not something outside matter or body but within. It can also be termed as light, strong, flattening and unpredictable as the wind or like the breath that allows life to continue (Casaldáliga, 1994: 1-2).

Plate. 2.4-1 illustrates the different symbols of different religions – spirituality is universal and not attached to a particular religion (Religions, 2010).

Spirituality was traditionally a part of religious doctrines (Plate. 2.4-1). It was an aspect that was seen as religious experiences. Some people see spirituality in the same plane as religion. Secularism in spirituality has led people to view spirituality as a personalised issue which is less structured and is hardly open to new ideas. On the other hand, atheists are sceptical about the supernatural beliefs and existence of the spirit (Casaldáliga, 1994: 1-2).

Yet, they see spirituality as the thoughts and emotions that have been cultivated to be in harmony with the universe. Although religion and spirituality have the same aim, they are both considered as different entities. In many cases, religion provides the form in society in which spirituality can be attained. One major difference is that religion is an external form of quest while spirituality is a search within oneself (Casaldáliga, 1994: 1-2). Swami Paramananda (2000) states that "a map (Plate. 2.4-2) is not the destination; a plan is not the house; a sign post is not the town – similarly religion is not God". A map or a symbol must be read and understood by an expert – a building is read by an architect, engineer or contractor. Similarly religion is a map and is read and explained by an enlightened being (Swami Paramananda, 2000: 1).
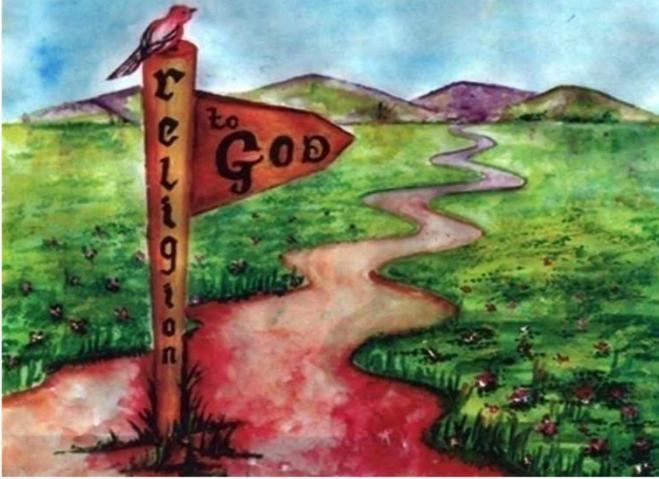
Plate. 2.4-2 illustrates a depiction of the journey leading to spirituality (Swami Paramananda, 2000: 1).

An enlightened being is one who has known the truth that Man, God and the Universe are three aspects of one reality, and thus he is part and parcel of the Divine. His inner nature is pure consciousness filled with love, silence, bliss and other virtues. The enlightened being knows that his centre is immortal and free from all forms of sorrow, though it resides in a mortal body.

Today, an enlightened being is a rare gem. Religion has two aspects: the gross and the subtle. Symbols, parables, scriptures, rites and rituals reflect the external and the gross form of religion. They are concrete, while inner divine feelings, prayer, worship, devotion and other experiences constitute the abstract and subtle form of religion. Enlightenment or the experience of Truth or God is beyond all these (Swami Paramananda, 2000: 1).

Swami Paramananda (2000) maintains that religion is not God, but the understanding of religion can guide the seeker to a direction that leads to God. Man has mistaken the map for the destination which is his greatest delusion. Man is therefore responsible for this state of affairs. The solution to the problem is within him. Buddha affirms rightly when he says that he is pointing at the moon and the individual is looking at his finger – only a fool will assume that the signpost is the destination (Swami Paramananda, 2000: 1). However to behold the moon, it is critical to look at the finger, yet it is important to go beyond religion to attain God. Spiritually, it means that one must use religion as a means and transcend it. Unfortunately people are stuck with the means and the end is utopia for them. However, this is an illusion not the reality.

Nearly all religions in the world advocate the pilgrimage to a sacred place. It is an invitation to the inner world, yet people go elsewhere to perform the rites mechanically. For example, in some religions the devotee goes seven times round the temple without questioning the symbolism that underlies the rite. In actual fact, going round a temple means he is actually on the first round of the ladder but the purpose is to attain the seventh sky within him. Religion needs to be sought beyond and deeply under the

guidance of an enlightened being who has experienced God and he only, can provide the key to the inner door (Swami Paramananda, 2000: 1).

However, with the sophistication of communication and transport, the world suddenly appears small. Interdependence of the likes of trade, business, leisure, tourism and other activities has bridged barriers of race, colour, sex and language. People have become conscious that they cannot live and progress in isolation. Hence the world is now seen as a global village, built out of needs. In ancient times, civilizations were separated geographically where there were barriers of culture, language and religion. The teachings of enlightened beings were initially confined to certain parts of the world, to then reach the global mass when they departed from earth (Swami Paramananda, 2000: 7). By adopting a universal language (Plate. 2.4-3), one may avoid conflict and chaos. The outcome of an awakened mind is harmony, love, sharing, peace, human rights, wealth, understanding, respect and love for one another.

A paradise can be built with the abundance of wealth and sharing spirit on earth. People have to transform their greed, anger, lust, jealousy, and hatred, into love and peace. There needs to be an institution where the basic instincts of man can be transformed; here it is referred as a school or learning laboratory where people can learn the art and science of transformation. (Swami Paramananda, 2000: 7). A deep observation of human achievement shows that the human mind is ready for a quantum leap (Plate. 2.4-4).

Plate. 2.4-3 illustrates a sketch of the global unity required in order to create a better world (Swami Paramananda, 2000: 7).

These can be seen in the marvels of the Eiffel Tower, The Great Pyramid, the Roman Pantheon, the architecture of the Roman Empire, the nuclear bomb, technological advancements in the field of information, telecommunication and transport (Swami Paramananda, 2000: 5).

Yet there is a lack of distribution of wealth in this rich world. Psychology says that the mind is divided and as a result, desire, tension, repression and frustration occur. Swami Paramananda (2000) wrote that the same science also suggests that if the mind is not divided, it is homogeneous and the outcome will be perfect tranquillity – which is supported by spirituality. The division of mind is said to be illusory by mystics at a superficial level (Swami Paramananda, 2000: 5).

Plate. 2.4-4 illustrates a sketch that depicts the step of man to the world of the unknown, his quest of discovery takes shape when he merges with existence (Swami Paramananda, 2000: 5).

When the homogeneity is experienced, a great transformation occurs. Subsequently, one no longer sees the waves only, but also beholds the sea as oneness from which virtues are born. Quantum leap is therefore from being completely material to fully spiritual (Swami Paramananda, 2000: 5). Spirituality involves an education of the self and it can only be sought from an enlightened spiritual master. The following section reviews the need of such an education.

2.5   The Need for Self-Education

Education has a global misconception where everyone thinks it means solely acquiring academic education. In fact, it has a profound meaning of discovering and knowing the ultimate possibility of human existence. There have been more than fifteen thousand wars since the last fifteen thousand years. The amount of violence is uncountable due to its increasing magnitude – one reflects if that is really education. Unfortunately, it is the result of the unconscious layers of the mind. The term education is regarded as a panacea, if it was, then surely the world would have been a paradise. In most countries, national unity and peace are the prime issues, yet people are still divided and conditioned, although much has been stressed on the democratic nature of societies (Swami Paramananda, 2009: 1).

Swami Paramananda advocates that the fruit of education gives birth to "inner peace, love, mental freedom and a natural sense of responsibility as an inhabitant of the planet" (Swami Paramananda, 2009: vii). Education should primarily begin with the individual to focus on his self. Man is an extrovert creature: he merely seeks outside, out of ignorance while his real nature is subtle, invisible and within. He is therefore unconscious of his inner potentials that could possibly benefit in refining his behaviour. An observation reveals that confusions and conflicts exist at various levels in society. Man has gone side-tracked and is lost in the web of illusion and chaos, if not overpowered by materiality. A solution to this current imbalance in society is self-education.

Self-education can lead to the blooming of mankind via a sound body, an amorous heart and a conscious mind. Health has a deeper meaning as it is the harmony that is established at all layers of our being and the state of being centred within oneself. Education in its current form is merely a tool of academic knowledge and know-how in forming a comfortable material life. However, it fails in identifying man's potentials and his worth, how he can attain peace, love, fearlessness, immortality and freedom from his sufferings and sorrow. The science of self-education creates a mental revolution to perfect the future (Swami Paramananda, 2009: vii-viii).

In a broader context, spiritual education is an effort to promote the development and flourishing of spirituality through transcendence and raised awareness or consciousness. However, this practice is performed without any materialistic values in pursuit of 'self-transcending goals, a sense of meaning and purpose in life, perseverance and resilience in the face of hardship, being virtuous, the capacity to feel curiosity, wonder and awe in everyday life and openness to relations' (Ota, 2007: 77). The shift from rural to urban life in the now globalized movement has misled the real attempt of communities to serve as a persuasive 'hidden curriculum' for people's spiritual education (Ota, 2007: 78). Spirituality should be an inclusive concept in academics. Spiritual development is open to everyone and is not confined to any religious beliefs or practice of a particular faith. It is the focus of abilities that can be developed and are uniquely human (Ota, 2007: 114). Although self-education occurs in an individual level, the spirit of a place is governed by architectural qualities that create a harmonious environment. With such an education, humans are more aware of themselves and the surroundings they engage in.

2.6   Spirit and Place

Day (2002) states that 'humans are versatile creatures'; they adapt to the different conditions of environments – physical, social and spiritual. Man lives in an environment of beauty that he seldom acknowledges owing to human arrogance. Natural beauty induces reverent feelings about the spirit. The human spirit can be a vessel in transcending influences to shape and nourish individual environment. Currently the world is stirred by social disharmony that causes stress, psychological and hormonal imbalances that propagate illnesses. Beautiful places are ecological in nature and foster good health. They are plenty of 'integrity, wholeness and balance'. The spirit of a place can be experienced when given a measurable value (Day, 2002: 111-113).

Architecture is a medium through which experiences through space become pleasurable. Hence architecture cannot be isolated from its environment. Its components become the whole environment of the inner space it creates inside a building, while on the exterior it represents part of the surroundings. Some buildings show their dominance on nature. Others follow a contour; the path or field boundary. As such, buildings create boundaries in space. If forms, shapes and lines are accentuated with the qualities of movement, life, harmony and dynamic forces, the place can have an influence on the human mind (Day, 2004: 9-10). In a deeper perspective, human consciousness can be shaped by the place having positive effects on health, social and personal evolution. Day (2004) affirms that architecture is a medium that can be wisely developed to minimize ecological damage and pollution. Aesthetic measures do not relate simply to the sensory and visual experience but also build the essence of the spirit of place (Day, 2004: 13). The latter is characterised by various architectural qualities that make that space serene. A deeper understanding of a holistic environment is explained in the following section.

2.7   Holistic Environment

A holistic and spiritual approach to architecture may be seen in the works of Louis Kahn (Jencks, 1997: 236). He explains that silence is not quietness but he sees it as 'lightless' and darkness. His statement describes that light gives birth to the presence of

the material that is enhanced by a shadow cast. Light and silence works in hand as they complement each other and inspire the users. Moreover, language is a medium to express art which has an everlasting value. The essence of silence therefore creates a sense of commonness that will last (Jencks, 1997: 236-237).

Health and well-being have always been associated with the body spirit (Pearson, 2000: 49). Sickness is considered as an imbalance in life in the oriental civilization. Therefore, balance and harmony are vital and need to be restored in the body. In architecture, one can observe this awareness dominant in the Scandinavian countries and Germany. There is a spiritual sensitivity that combines with ecological values to create a healthy building. Frank Lloyd Wright said that "buildings, too, are the children of Earth and Sun" (Pearson, 2000: 49). One of the most important strands of healing design is organic architecture which was advocated from the Arts and Crafts, and Art Nouveau Movements. Pearson (2000) wrote that Frank Lloyd Wright was a pioneer of organic architecture where his designs became an underlying inspiration for future generations. Louis Sullivan also employed vegetative designs in his works as a means of decorations in his buildings (Pearson, 2000: 50). Wright's buildings are intimate with nature and they are strongly connected to the ground. He reflected the asymmetrical attributes of nature in his works. Forms and spaces are balanced dynamically to create a sense of enjoyment. His concept was to move from a closed area into a light and open space – as one would emerge from a dark forest into a sunny field. Architecture is experienced by the human movements in space. Moving into a building can be pleasurable as dancing.

Plate. 2.7-1 illustrates the Falling Water stating the expression of spirit of the land and sense of place (Pearson, 2000: 77).

This notion involves human behaviour and feelings (Pearson, 2000: 50). On another plane, organic architecture is symbolic of an expression of freedom. It could be used to renew traditional values. The influence of form, space and colour of mankind has resulted in a spiritual ecology that needs to cater for all species in the environment (Pearson, 2000: 52). The Falling Water (Plate. 2.7-1) was designed to be in harmony with nature.

It is surrounded with trees and water swirls underneath. The intention was to make the waterfall part of the living environment. The materials used have distinct texture and finish to make it part of its context. Romantic architecture is the term coined by Wright's famous work (Aromalram, 2010).

Plate. 2.7-2 illustrates the interior spatial character of the Falling Water (Decorating Flair, 2010).

The floor finish was of on-site stones whose rough texture could be seen coming out from the ground in the interior space. Clear glass creates a transparency, thus allowing the exterior quality of nature to flow into the interior space (Plate. 2.7-2). The concrete surface has an ochre colour which resembles the 'rhodendron' leaf (Aromalram, 2010). These elements combine together to create a holistic environment that induces spiritual consciousness. Fundamental solutions have been sought to allow a harmonious living with the land and nature. Nature is composed of interwoven ecosystems which are 'continuous, interconnected and sustainable'. Nature is a self-sustained source. A building can cause damage to that ecosystem space if it does not have a rightful place (Pearson, 2000: 72-73).

2.8   Natural Form and the Sensual Experience

D'Arcy Thompson (1971) stated that there are physical forces that exist between growth and form (Thompson, 1971: 269). Organic form is directly attributed to nature where the term morphology comes into place and describes forms as conditioned by space matter. The shape of an object is defined scientifically or mathematically; usually it entails a historical aspect. D'Arcy (1971) pointed at the form of the earth, of the raindrop and the path taken by a stone thrown in the air – they have been translated into shapes that define a sphere, catenary or parabola. Form has a set of precision with regards to mathematical order. For instance, an ellipse gives way to the various types of

ellipses, or the cone defines a better concept while a curve may be conceived of a higher order (Thompson, 1971: 269).

Humans possess the skill to design and construct. The fact that human culture is believed to have existed for thousands of years, it means that humans are cultured species. From nature's observation, one can look, listen and learn (Tsui, 1999: 4). Every object in space and nature has an identity, a unique form and structure. Human creativity has its roots in nature from which man is inspired. Form and function work in hand with the whole environment to create active and reactive connections to the organisms of the surroundings. Function is usually applied to give value to a relationship of the environment. Architecture may be termed as the planning or generation of creative thoughts from nature (Tsui, 1999: 8-9). Nature is made up of the geometry of organics. The outer design influences the inner design and vice-versa. Architecture with nature challenges the senses and the mind since it aims at achieving a reasonable, real and simple approach where there is 'a reduction of means, renunciation of tools and the focus is mainly on the essential' attained with the use of natural materials. The conscientious selection and treatment of materials brings a qualitative integrity to the space and environment. A natural building material can be transformed into a cultural oeuvre with architectural techniques. Additionally, an aesthetic awareness may be promoted towards nature in that process. When a material is treated with interest and creativity, a playful lightness and grace may be created so that an expressed sensory aesthetics is experienced. A harmonic design consists of the outer and inner relationship (Blaser, 2002: 6-7).

Moreover, Rudolf Steiner incorporates nature in his spatial development where necessities become substantial aspects of his designs (Blaser, 2002: 8). Architecture is informing, educating and being responsible towards life. It starts from the outside to the inside. He describes that self-oblivion occurs when one starts listening to oneself. There is a need for beauty that will link to the sensual and spiritual experience. Nature is a source of inspiration that has enabled architecture to last with the use of technology. Steiner points out that creation makes man creative and nature is the model to follow. His architecture was a synthesis of numerous evolving elements that had a humane attribute to them. His architectural style is referred to as a 'reawakened art nouveau'. His approach is seen to be close to nature in developing a symbolic design with a sensual creative concept. The buildings became monumental yet invoke simplicity. His

task has been to create the spiritual notion of place with appropriate orientation and scale in relation to the sensual attributes of man. The buildings therefore showed human warmth with simple and elementary designs (Blaser, 2002: 8-12). The visual aspect of organic architecture is associated with the process of becoming, growing and passing away. A dialogue with nature is essential to make a building unique with its integration into the landscape. Architecture is therefore the link between sensitivity and sensuality. It becomes an art. Personal emotions allow the building to evoke a sense of spirituality. The latter is comprised of forms of expression, aesthetic and natural forces (Blaser, 2002: 111-112). Hence architecture consists of various qualities that can be embedded to create a peaceful environment.

2.9　Serene Qualities of Spiritual Architecture

The twenty-first century was presented without guidance in style of architecture. The built environment was left undefined especially when there has been a need to find a spirit in an architectural form. Tadao Ando has had a vision for this era where his works showed his response to time in defining the future of the built environment (Jodidio, 2007: 6). His influence has been the simplicity of the Modernism movement. His architecture expresses materiality that is represented by concrete walls that set a limit. Although solid and robust, the walls present a sense of tactility – soft to the touch. Moreover, there is an emptiness that leaves a mark behind. This is achieved with the interplay of light and space (Jodidio, 2007: 6).

His aim is to create a transcendent space, much as that created by the Pantheon in Rome. The outcome is the simplicity of perfection. The non-geometric and irregular nature of his buildings is sourced from the traditional Japanese architecture, much related to its natural environment (Jodidio, 2007: 6). Temples and churches designed by Ando have a processional demarcation. For example, the Church of Light is a rectangular box angled by a bisecting free-standing concrete wall that directs the visitors into the chapel (Figure. 2.9-1), (Plate. 2.9-1).
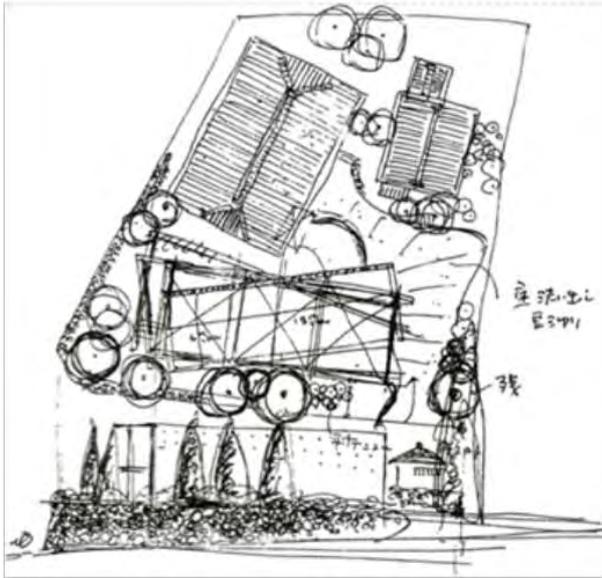
Figure. 2.9-1 illustrates a sketch plan of church with bisecting wall (Jodidio, 2007: 128).

Plate. 2.9-1 illustrates a 3D view showing the wall as it pierces through the rectangular box (Jodidio, 2007: 128).

The interior (Plate. 2.9-2) has rough textured dark finish planks used for flooring with off-shutter concrete walls of the rectangular box. The altar is at a lower level with its backdrop wall having vertical and horizontal openings intersecting to form a cross that is the main source of light in the space (Jodidio, 2007: 8).

Plate. 2.9-2 illustrates natural light as an integrated feature of a holistic atmosphere in the interior space of the Church of Light (Jodidio, 2007: 126).

Ando believes that the aim of all religions is the same, but there exists different ways to achieve it. But his architectural work expresses spirituality which is neutral, to all seekers of spirituality and not particularly of a given religion. Spiritual architecture is accompanied by an experiential feel into the space. An example of that is the Water Temple (Plate. 2.9-3) designed by Ando. On arrival to the temple, the visitors are confronted with a vast open area led by white pebbles terminating against a high concrete wall. It is the gate that one physically has to pass (Jodidio, 2007: 8).
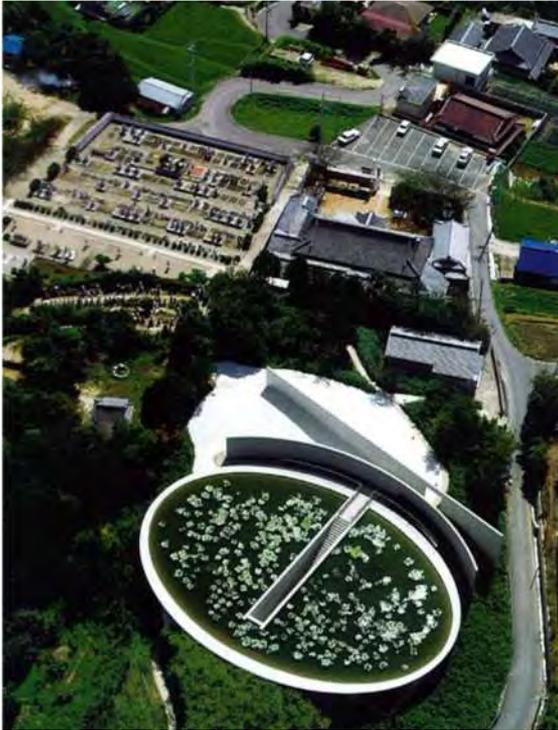
Plate. 2.9-3 illustrates the lotus pond of the Water Temple with a central staircase leading to the shrine beneath (Jodidio, 2007: 338).

It has one opening through which one enters a passage bounded by a curved wall. Beyond it, one overlooks an oval lotus pond with dimensions of forty by thirty metres. It is bright blue and reflects the sky. There is no temple in sight. The intention is to not disclose everything at the point where one enters. Instead the visitor is paused to think where he is; he embarks on an experiential journey where his senses are activated and becomes aware of the environment (Nitschke, 1993: 77-83).

The lotus is a symbolic spiritual representation in Asia. It signifies the channel of origin of all life in the Indian cosmology and is the symbol of self-creation or enlightenment in Buddhism. A central walkway leading to a descending staircase is seen in the pond. The visitor has to descend down the lotus pond through a staircase to get to the temple beneath. It is an experiential process and an act of cleansing since water represents purity. The exterior space is vast and open to the sky (Nitschke, 1993: 77-83).

Plate. 2.9-4 illustrates the Radiance of the natural light at the shrine of the Water Temple (Jodidio, 2007: 345).

In comparison, the inner space is enclosed and dim. Light floods behind the shrine through an aperture that brightens the space with a reddish colour from the texture of the shrine elements. The visitor therefore cleanses himself before entering the temple shrine (Plate. 2.9-4) which is underground (Jodidio, 2007: 8).

The shrine is surrounded by vertical grid of red wood. The shrine glows and reflects a space of inspiration with vibration of pure energy (Jodidio, 2007: 8). The temple planning consists of two square mandalas that represent the transparent wisdom while the womb-like oval shape signifies a phenomenal experience (Nitschke, 1993: 77-83). The mandala expresses a spiritual power. Mandalas were used originally to design castles where gates were positioned at the four cardinals. Ando forces the visitors to walk through the spaces and be within them three-dimensionally. The design is an experiential union of the transparent and womb-like worlds. The architectural style is adopted so that meditative and intuitive spaces correlate the human experiences – in essence they are all of the same order and source of creativity (Nitschke, 1993: 77-83).
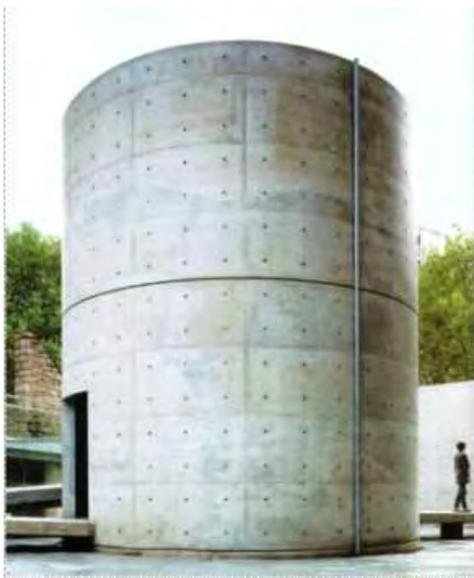
Plate. 2.9-5 illustrates the Meditation Space in a cylindrical enclosure occupying 33 m² (Jodidio, 2007: 144).

Plate. 2.9-6 illustrates the light in the Meditation Space 6.5 metres high (Jodidio, 2007: 147).

The Church of Light and the Water Temple were influenced by Christianity and Buddhism. However, the Meditation Space designed in the UNESCO premises was a neutral design (Jodidio, 2007: 9). The concrete cylinder (Plate. 2.9-5) has no doors but two openings through which light emanates. A narrow skylight strip floods light from atop the sculpture to create a sense of spirituality. A calm space yet powerful is defined of its structure. The openings (Plate. 2.9-6) allow natural ventilation through the breezes while the space is enclosed by strong walls and light from the sky – symbolically from the heavens – is represented by a floating concrete disk. The simplicity shows that 'little is required to attain basic goals (Jodidio, 2007: 9).

On another project, Sarosh Pradhan (2009) wrote that architect Lek Mathar Bunnag engages with the play of shadow and light in his building - The Barai at Hyatt Regency at Hua Hin in Thailand (Plate. 2.9-7). The architect is playful when it comes to architecture. According to Lek, the Barai is an eastern notion of meditation which he refers to as the profound sense of the word spa (Pradhan, 2009: 119).

He describes that the journey into the spaces is experiential. That journey (Figure. 2.9-2) is long and quiet all along. He mentions that as one proceeds inwards there is less light, less noise and the silence increases. The tall enclosed walls are plain with no detail to reduce the focus on them.

Plate. 2.9-7 illustrates the exterior night view of the Barai (Pradhan, 2009: 119).

In fact they help the visitors in becoming more aware of the solitude and awareness. This is the architecture that Lek wanted to express. Not only the guests but also the staff members have to observe silence while performing their tasks (Pradhan, 2009: 120).
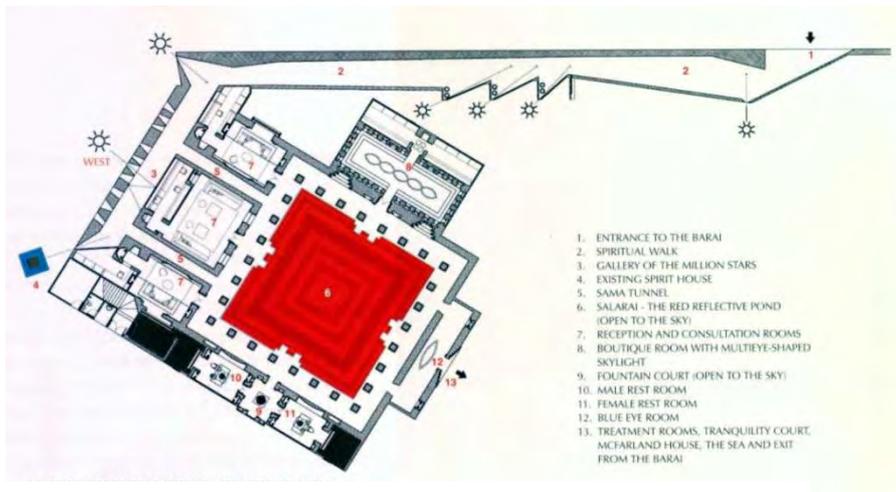
Figure. 2.9-2 illustrates the plan of the Barai (Pradhan, 2009: 121).

Light is the essential natural element in this project. Light and shadow are used to convey a meditative experience. Coloured glass is used to express this notion. Some colours are beautifully and visually sensitive when they are expressed in the dark. No windows are situated on the outside; the individuals are exposed to the skylights in place. Vegetation on site has been preserved and integrated with the architecture of the

building. The existing trees (Plate. 2.9-8) were worked around architecturally (Pradhan, 2009: 120).

Plate. 2.9-8 illustrates the existing trees and landscaping elements (Pradhan, 2009: 121).

Plate. 2.9-9 illustrates the tunnel of light with light penetrating via roof structure (Pradhan, 2009: 122).

These trees have spiritual meanings and their existence bring life to the place and purify the atmosphere (Pradhan, 2009: 121). Passages are dark and narrow arriving to courtyards that contain fountains which have a subtle effect on the human mind. These passages lead to a big court of absolute tranquillity. From that point, one can see the sea beyond with its horizon (Pradhan, 2009: 120). The tranquillity court has enclosed walls on each side with an opening to the horizon – creating a harmonious environment with nature (Pradhan, 2009: 121). The Barai building, on a flat land, has a sea frontage of sixty-one metres. That frontage is described as a tunnel of light by Lek. It is an experiential walk undertaken by the visitor in a tunnel (Plate. 2.9-9) punctuated by light infiltrating in the shadows of the stars. The movement in the tunnel is spiritual since it gradually focuses on the sense of arrival to something beyond and much subtle (Pradhan, 2009: 122).

Lek stressed that the natural elements have to be appreciated: sun, rain, moon, breeze, shadow and water. Architecture is made using these elements to create a sense of serenity. Lek wanted to achieve solitude and stillness while preserving a peaceful environment. He states that these are the qualities necessary for meditation (Pradhan, 2009: 126).
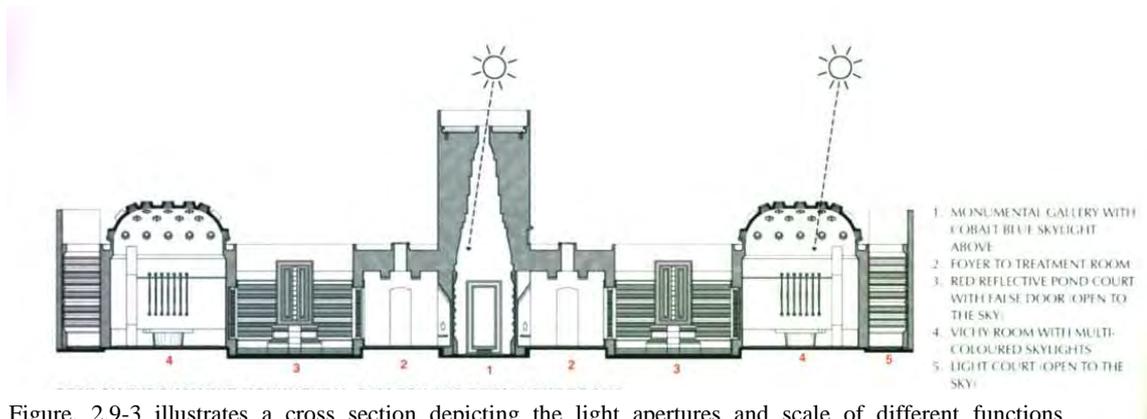
Figure. 2.9-3 illustrates a cross section depicting the light apertures and scale of different functions (Pradhan, 2009: 126).

Light and shadow bring character to a place by brightening its beauty. Pradhan (2009) says that the mysterious and delightful qualities create a sense of wonder; surprising the visitor at each juncture to inevitably establish a sense of place.

Plate. 2.9-10 illustrates passage ways: on the left, it is an open outdoor enclosure with a natural surrounding; on the right, an interior wall is punctuated with star shapes having interplay of light and shadow (Pradhan, 2009: 130).

The space conforms to the engagement with nature: water elements are put in place to instil calmness and stillness, a sky or cosmic connection is established through roof light apertures (Figure. 2.9-3) and the sense of nature is consistently seeping into the mind. Lek refers to it as a cleansing process (Pradhan, 2009: 130).

Architecture, he says, has become 'a sense of theatre' where there is an echo of calmness at every point. Lek was inspired by culture to design the 'steep sways of the curves, framed views and cornices'. Passageways (Plate. 2.9-10) are designed to enliven the spiritual journey (Pradhan, 2009: 130). The Barai therefore illustrates the sensory and spiritual experiences created by architectural elements. These experiences are further discussed in the next section.

2.10   Sensory Experience and Spatial Experience

The size and quality of space is affected by visual and sound elements that are influenced by changes in temperature, texture and smell. When a space is seen visually, the entire body becomes active and starts to move, not only the eyes. Nitschke (1993) states that phenomenologically that colour and texture are physical in essence. In contrast, the hearing process in a space has a passive quality physically. Sound reaches the ears and leaves its source to fill the space. Hence humans are moved in space passively in terms of sound. The depth of the senses is structured aurally in a natural environment where there exists a continuous whispering splashes of a waterfall or rhythmical sounds created by bamboo seesaw hitting a stone and allowing water to flow. These elements are seen in a Zen garden (Nitschke, 1993: 41-43).

The design of the Rokko Church by Tadao Ando in 1986 shows the manipulation of traditional spatial techniques and its incorporation in a contemporary context (Nitschke, 1993: 43). The spatial experience starts with the notion of being elevated physically at the top of Kobe Mountain with views to the sea and the essence of floating in the clouds. The visitors are encountered with the experience of a long dim passage much like a mouse hole with view to tree branches that suggest that the destination is not much far ahead. As the passage steps down, one has an oblique view of the Church; however views to the sea are blocked. The site appears to be larger although it is small. Along the way, there are different experiences; stops and platforms. The composition of space is marked by an empty grass area with tree edges. The space is framed with different geometric volumes, different textures and contrasts of light and space. The long passage is an unusual spatial experience with milky glass panels on the sides and roof withdrawing the sight of the Church from the visitor. The passage is rather a light tunnel, with green light at the bottom and white light descending from the top. The tunnel leads to the garden rather than the Church. At a right turn, one can see an opening along the way which gives a glimpse of the sea. Here Ando emphasizes on the space and sensory experience which is on the outer level rather than inside the building. He brings the spiritual essence through the journey before entering the Church. The latter is stepped down with a flooded light interior. The space is introverted, buried inside after having been lifted above eight hundred metres. The views are downwards instead of being upwards (Nitschke, 1993: 43-47). A deeper understanding of space and

form are analysed in the following section where spiritual meanings of architecture will also be reviewed.

2.11   Space, Form and Symbolic Meanings of Spiritual Architecture

The simplistic appeal and boxlike nature of Ando's spiritual buildings have given birth to a new definition of aesthetic (Furuyama, 1993: 12). The latter was usually associated with ornamental decoration and colourful patterns. However, spiritual architecture is subtle. Minimalist approach can indeed create a wonder and invoke the spiritual essence of a place. Furuyama (1993) stated that Ando's works are of pure space and simple form, referring to the minimalist nature. The notion of applying simple forms is basically to reduce the tension posed by form in space. This allows the individuals to experience the profound emotional connection. Here, the walls define the spaces in that deepest meaning. The column which has known new dimensions is no longer a mere column. Actually, it is a wall that functions as a column. The idea is to create a constructed and continuous space with the walls left unpainted to define its role as a pure symbol (Chung, 2007).

Comfort has been left out when designing spiritual buildings as the Churches of Ando (Furuyama, 1993: 15-16). Yet, the buildings reflect a deep level of comfort experienced by individuals. The openness in space design allows the building to breathe and contribute to a positive psychological experience. In addition, sensory elements are met with the presence of acoustic values in space created by thick walls. The principle element is the incorporation of light that provides interplay with the natural characteristics of the materials used. The concrete walls have a reflective surface onto which light shines and enlightens the interior spaces. This is seen in the Church of Light. Water is utilized in a similar way. Its reflection under the vast sky is part of an experiential journey by individuals. The transparent nature of water and glazed façade at the altar in the Church on Water bring a spiritual quality to the space. The latter is also designed for the reflection of sound by the enclosure of concrete walls on the sides. Beyond that is the aspect of natural landscape and views. The aim was to capture the essence of nature that would initiate the spiritual quest in the seekers (Furuyama, 1993: 15-16).

The spiritual notion is not only based on the ideology that God is omnipresent, omniscient and omnipotent, but it is also denoted by the fact that humans are the image of God in miniature. Therefore to attain that pure state an environment has to be conceived. In this way, people are confronted with pure spaces in which they conduct their practices. The nakedness of spaces induces a freedom to contemplate on the inner self. An example of space, form and symbolism in spiritual architecture is Norman Foster's Palace of Peace and Reconciliation in Kazakhstan (Foster, 2009: 49). The Peace Pyramid (Plate. 2.11-1) by Norman Foster is sixty-two metre high.

Plate. 2.11-1 illustrates the Palace of Peace and Reconciliation with a symbolic pyramidal form (Foster, 2009: 51).

It serves as a global centre for religious understanding, renunciation of violence and the promotion of faith and human equality. The building is located close and axially to the Presidential Palace in an administrative centre. The building form is said to be non-denominational and dates back to the ancient Egypt. The form represents a 'symbol of amity' for the future (Foster, 2009: 49).
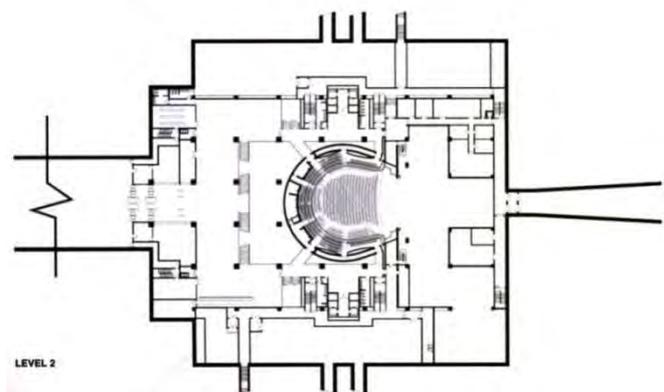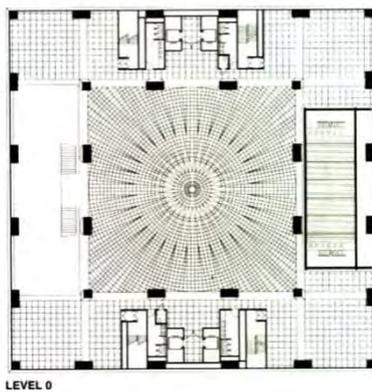
Figure. 2.11-1 illustrates the lower plans of the building spatially arranged around a central atrium (Foster, 2009: 49-50).

The building accommodates a venue for the Congress and has an opera house for fifteen hundred seats, a university faculty, meeting spaces and a national spiritual centre. The pyramid is used as a pure shape with a square base length of sixty-two metres. The building is arranged around a central atrium (Figure. 2.11-1). The assembly chamber is

elevated at the top and supported by inclined pillars – representing the hands of peace. Lifts are placed at the incline of the walls where delegates are led to a reception area marked by vegetation – hanging gardens.
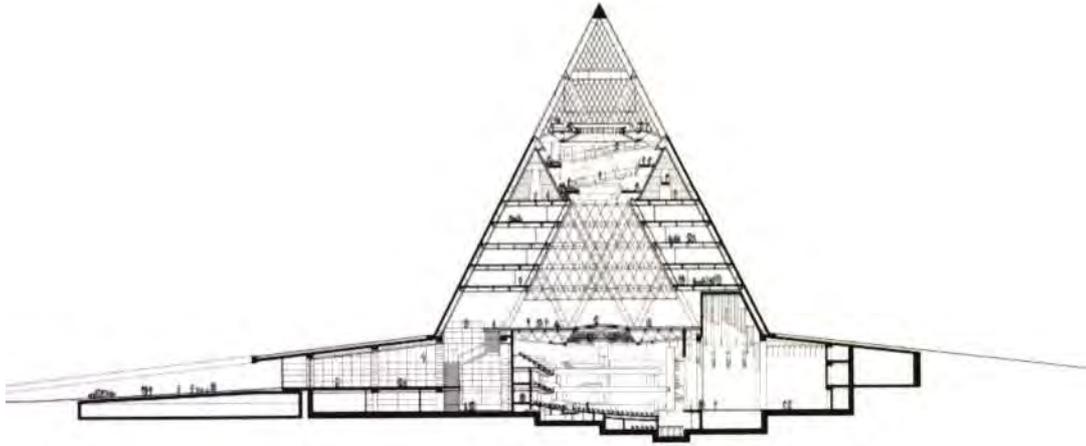
Figure. 2.12-2 illustrates the cross section of the pyramid with the central core and the assembly chamber at top (Foster, 2009: 49).

The floor at the atrium level is finished with a glass lens that casts light in the auditorium of the opera house below (Figure. 2.11-2). The aim was to have a vertical continuity from the bottom to the top – linking the various spaces (Foster, 2009: 58).

Plate. 2.11-2 illustrates the interior space of the assembly chamber (Foster, 2009: 51).

The exterior façade is clad in a lattice of stainless steel with pale grey granite triangular inserts. The apex of the pyramid is made of stained glass and symbolizes peace (Foster, 2009: 49). The same principle of cladding occurs in the interior space (Plate. 2.11-2), illuminated by natural light from the apex into the volumetric space. The design has symbolic meanings. The pyramid as a simple design translates the objectives of the Congress. The form indicates a return to the basic principles architecturally but it signifies 'the advancement of values of tolerance and the renunciation of violence' (Foster, 2009: 58).

The stained glass represents a transcendental and transforming system; hence it indicates the spiritual essence of architecture. The colour blue is associated with peace

and tranquillity. It is the colour of universal peace. The building represents a bridge between water and the sky. The white colour of light represents purity, faith and humility. In addition, it is the colour of the truce flag, hence delivering a message to the people (Foster, 2009: 58). The next section discusses the elements that create a pleasurable landscape.

2.12   Landscaping Elements in the Environment

Naturalness includes vegetation, water or mountains. There is a human approach to vegetation or water as it involves care and pleasure. Vegetation may consolidate the imageability of elements. Planting along a path reinforces the image and the experience along water edge or parks and it can be memorable adventure (Nasar, 1998: 62-65).

Plate. 2.12-1 illustrates an open micro-cosmos as a water feature in an outdoor space (Ueyama, 2007: 178).

Natural features have gradual change; their shape and colour degrade continuously (Nasar, 1998: 62-65). The natural state of the environment is considered as the base of life. The earth is a vital element in architecture: its treatment is critical as it may provide structural benefits to the site depending of the existing shapes and patterns. Zami (2010) points out that the exterior space can be seen as infinite; the design can reach the horizon up to the sky. The outdoor spaces (Plate. 2.12-1) should not be limited by structural and fabricated elements. They should be accompanied by natural materials in the raw or refined level. Hard landscaping elements (Plate. 2.12-2) constitute of 'pavements, street furniture, mountains, rocks, sculptures and monuments' (Zami, 2010: 63-64).

Plate. 2.12-2 illustrates benches moulded and sculpted and placed in green parks (Ueyama, 2007: 45)

The main construction materials used are concrete, brick and stone to create hard landscape forms. Usually, hard landscape can be used as a catalyst for social activities (Zami, 2010: 64-66).
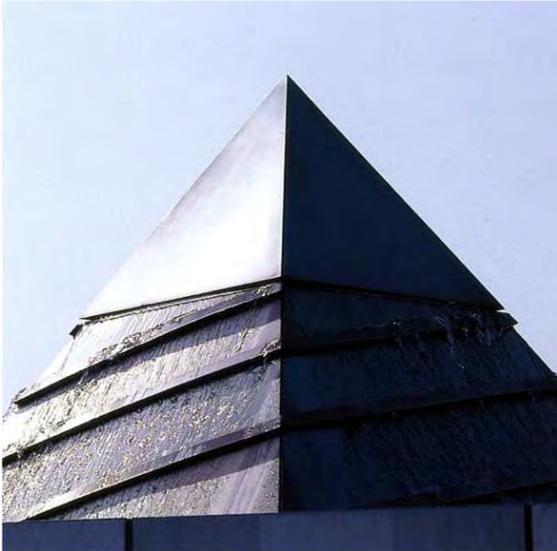
Plate. 2.12-3 illustrates a pyramid water chute that attracts visitors to an object of light and water (Ueyama, 2007: 197).

Plate. 2.12-4 illustrates a meditation plaza at a lawn plaza – the fountain symbolizes peace (Ueyama, 2007: 104).

For instance, pedestrian pathways or covered walkways can be used as an alley of interaction between the users. Moreover, street furniture such as benches provides a similar engagement with lamp posts, plant boxers, and signboards enhancing that space. Monuments (Plate. 2.12-3) and sculptures are concentrated to attract users in a space that can be linked to educational knowledge especially about history or they are symbolical (Zami, 2010: 64-66). Open-air activities can be carried out in the outdoor spaces that are designed with hard landscaping (Plate. 2.12-4). For example, walls can act as a solar control element and provide shade during a certain period of the day for those activities to take place. In addition, massive walls absorb heat during a hot day and release it at night when it is cooler; hence a night activity can be effective as it provides human comfort as well (Zami, 2010: 67-69).

This is extended to walls that act as wind barriers creating enclosed outdoor spaces. High and thick walls can reduce noise level to create a comfortable zone in the landscape. The natural forms are considered as soft landscaping in the environment. They are mainly the vegetative materials that exist or have been designed to enhance a landscape. Trees, hedges and grass form part of soft landscaping that includes water elements as well. Trees are used to provide shade apart from the benefits of refreshing

the atmosphere. Grass is used as lawn areas that often become spaces of socialization and relaxation. Soft landscaping can be used to create framed views from an interior space. Some may provide a visual link from one space to the other while others define a hierarchy from public to private areas (Zami, 2010: 69).

Colours, textures and smells of the soft landscape (Plate. 2.12-5) are beneficial in terms of psychology. Plant growth depends on various factors such as climate and topography that defines the shapes and sizes required in space. Hence, a pattern is established when these plants are positioned to have an adequate array of light and shade. Landscape forms are important as they also determine the appropriate scale for a human comfort zone (Zami, 2010: 71).
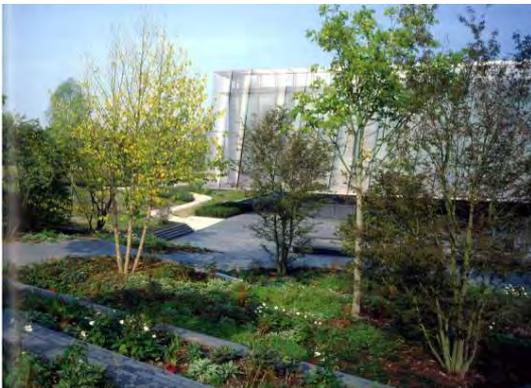
Plate. 2.12-5 illustrates a soft landscaping wrapping the FIFA building in Zurich (Hanke, 2007: 163).

Plate. 2.12-6 illustrates a mini amphitheatre in a park (Ueyama, 2007: 61).

Landscaping design has its origins in the history and traditions of a place. The first human remains and tools that were discovered in Africa are proof to the beginning of human civilization. Agriculture and trade were the first major economic activities. Settlement began around place where resources were available. Trading allowed the formation of religious groups in various regions. Islam was brought in the African continent via such trades. Zami (2010) wrote that a humanized landscape is a social expression of nature.

Green landscape (Plate. 2.12-6) is largely used as parks in the urban districts for social interaction. Parks are places of human integration. Spiritual practices can be performed in that kind of an environment where nature, fresh air and quietness are necessary (Zami, 2010: 78-79).

2.13   Conclusion

Spiritual practice is broad and it has a range of meditation techniques attached to it. However, those methods are different when undertaken under the guidance of a spiritual master. Each master has his own methods which can be passive or dynamic or both, depending on the time of evolution. Spiritual practices are best performed in a natural environment. The influences of natural elements have positive impact on the human body and help to enhance the journey undertaken by the seeker. Phenomenology advocates the necessity of experience in a place and has defined the character of place with its environment. Further, a personal experience and sensory interaction with space allow the user to identify with the surroundings. A holistic place is created when natural elements are incorporated in the built environment leading to a harmonious living. The identity of a place evokes a character and that place has a dimension that can functionally and spatially be treated with architectural elements.

Growth and form are inseparable; nature's forms are existent in space matter with shapes that are designed scientifically and mathematically. Each object in space has a definite form and structure from which the human creativity is inspired. The architectural form has been moulded to a state where the seeker can find his spirit. The interplay of light and space, the visual appeal and tactile qualities of structures produce a transcendent space that is accompanied by an experiential feel into the space. Such an architectural endeavour marvels in simplicity and perfection with a minimalistic style which can be soothing and powerful in structure. The aim of such a design is to leave out comfort but rather initiate journeys of positive psychological and spiritual experience. The inclusion of landscaping with the built form strengthens the interaction of man with nature. Such an environment decorated by architectural elements is appropriate for spiritual practices. Architecture is also influenced by cultural and climatic factors that will be investigated in the following chapter.

CHAPTER 3

CRITICAL REGIONALISM

3.1   Introduction

This chapter analyses critical regionalism in terms of the cultural, regional and climatic aspects that relate to a sense of place and identity. Critical regionalism is strongly linked to culture and nature. The doctrine looks at how a universal system may be adopted where spatial expression can induce a new spirit of place. The doctrine also acknowledges traditional methods but aims at implanting them in a contemporary setting. Cultural identity is formed when the context, climate, topography and the cultural issues are dealt on a universal basis. The natural environment plays an important role to shape spaces for the requirements of human needs. Local resources are often used to enhance a place much more than for economic reasons.

3.2   Critical Regionalism and World Culture

Critical regionalism was introduced around thirty years ago to shift the focus of the postmodernism debate. The term regionalism was used to signify an approach to design that was marked by the identity of a particular dogma rather than a universal system. The concept of regionalism is accurate and explicit; hence it is critical in essence (Tzonis, 2003: 10). The modern society is universally conditioned by the technological advancements that restrict the development of urban form. Often, a compensatory façade is put up to hide the harsh realities of this universal system. However, civilization and culture had brought a general control on shape and urban fabric over the past decades (Frampton, 1981).

Critical regionalism is an architectural theory that deals with the issue of 'placelessness' and identity by considering the geographical contexts. It is a post-modern doctrine that acknowledges universal civilization. Kenneth Frampton (2007) affirms that the emphasis should be laid on topography, climate and light. It should involve a sense of touch in contrast to a visual sense. The main concept of critical regionalism is that it integrates aspects of a global civilisation relating to the needs of a place. It is based on preserving a self-conscious programme. Culture is perhaps the backbone of this hypothesis. It is referred to as world culture since it combines the disciplines of a universal civilisation. (Frampton, 2007: 116). Culture has been addressed to create a sense of expression that consists of the evolution of the being (Frampton, 1981).

Frampton (2007) discussed that critical regionalism also contributes to socio-economic and political independence to some extent. In addition, Harwell Hamilton Harris pointed out that all cultures are dependent on an inter-cultural exchange (Frampton, 2007: 116). He believed that a 'liberative' regionalism was the culture that should manifest since it was regional because it never occurred elsewhere. In contrast, Frampton's critical regionalism was between rooted culture and universal civilization leading to architecture of resistance (Frampton, 2007: 116). Critical regionalism is referred to as a cultural strategy to achieve that universal civilization. It imposed some constraints on the influence of industrial and post-industrial technology (Frampton, 1981).

The Bagsvaerd Church by Jorn Utzon in Copenhagen (Figure. 3.2-1) illustrates the synthesis between universal civilization and world culture. The building is set on a regular grid and consists of repetitive in-fill modules of concrete blocks and precast wall units. The universality of this method is the patent glazing on the roof that has been mediated. On the exterior it is framed in a modular skin while in the interior it is set in a reinforced concrete shell vault. Although it is an uneconomic construction method, the vault defines a sacred place and represents the multi-cultural aspects. The religious essence of the vault is expressed to secularize a sacred form (Frampton, 1981).
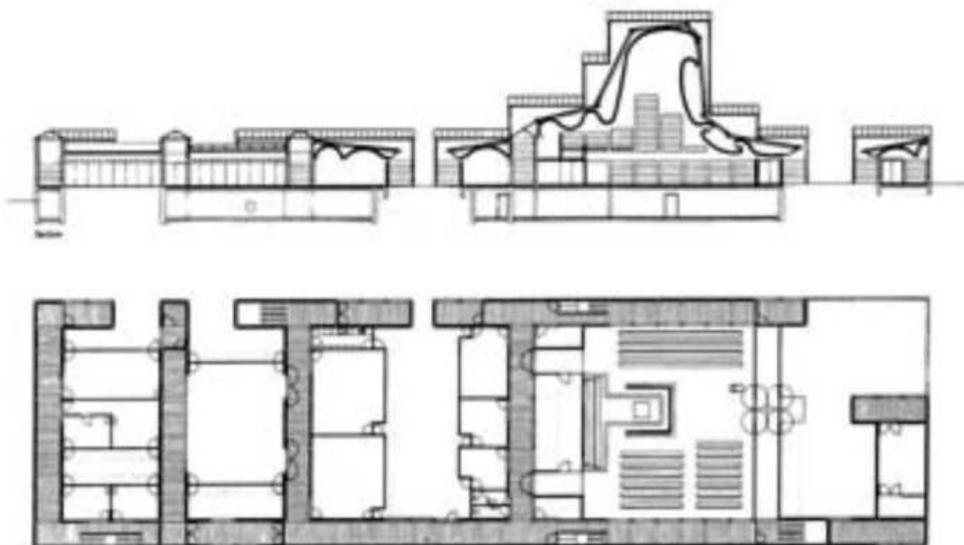
Figure. 3.2-1 illustrates the Bagsvaerd Church by Jorn Utzon; Section and Plan (Frampton, 1981).

The tactile dimension encompasses several perceptual sensory imprints in the mind like the intensity of light, darkness, heat and cold, the humid air and the aroma of material. An example of tactile sensitivity is showcased in Alvar Aalto's Saynatsala Town Hall.

The main route to the chamber is both visual and tactile. The main exterior stair is made entirely out of brick, even its risers and treads. The movement is experiential as the users are able to sense the friction of the steps in comparison to the timber floor of the council chamber. The chamber has a different experience of sound, smell and texture. Therefore, tactile is in fact described in terms of experience according to Frampton. He justified that critical regionalism complements the visual experience by considering the tactile aspects of human perceptions (Frampton, 1981). Place-form usually deals with space where humans integrate.

Plate. 3.2-1 illustrates the Saynatsalo Town Hall designed by Alvar Aalto in Finland. It tries to achieve a sense of belonging and community. It is a humanised approach and it creates an own cultural identity using local resources (Medlin, 2010).

Critical regionalism initiates a dense form and resonance in architecture, where cultural density predominates (Jencks, 1997: 97-98). Climate is a constant factor that is present in any landscape in comparison to socio-economic and political conditions that vary over time.

Alvar Aalto's building (Plate. 3.2-1) is a post-war design that favours a humane and sensitive approach to the identity of the people and site it is located (Lefaivre, 2003: 68). The building is designed to respond to the genius loci. It is absorbed in its surrounding landscape and creates a notion of romantic atmosphere with views to the neighbouring lakes (Medlin, 2010). A deeper analysis of the Satnatsalo Town Hall is done in the following section by describing its sense of place.

3.3   Alvar Aalto's Critical Regionalist Approach

The architecture of Alvar Aalto is an instrument that 'mediates all the positive influences and intercepts all the negative influences affecting man'. Aalto (1995) claims that a building can only be perceived as such when it is integrated in its surrounding environment. His architecture is largely derived from his native Finnish landscape. The latter has been described by Pallasmaa as a forest space (Weston, 1995: 122). Aalto's architecture relates to the particularities of place rather than the generic notion of space.

His buildings attempt to transform the landscape in a subtle way. In the modernist era, Clement Greenberg stated that the discipline is analysed using the characteristics that define the discipline to make it more competent (Weston, 1995: 122-124). Self-criticism in architecture leads to the focus of space primarily rather than any ornamentation. Hendrick Berlage in the early twentieth century defined the essence of architecture as the art of space (Weston, 1995: 122-124). The movement was marked by Le Corbusier's pilotis grid, the clear structure of Mies van der Rohe and De Stijl's floating planes. A new kind of space was created – the free, continuous and universal space within the partition walls. The free plan expressed a sense of freedom the social, cultural and physical constraints of the old order. New ideas demonstrated a response to the transformation of human experience according to Stephen Kern. The latter said that spatial expression was able to invoke the new spirit in terms of the building's scale (Weston, 1995: 122-124).

The Saynatsalo Town Hall in Finland is an example of sense of place. The municipal building accommodates administrative offices, a council chamber, public library, meeting rooms and local shops. The functions of the building are arranged around a central courtyard (Figure. 3.3-1) raised above the surrounding wooded countryside. Excavation materials have been reused for the foundations and to create the raised level where all the civic functions are placed. The materials used are mainly brick, stone, wood and copper. The building structure is load bearing and is made of brick mostly. The brickwork is raised above a concrete plinth for climatic considerations of snow and frost (Weston, 1995: 132-133).
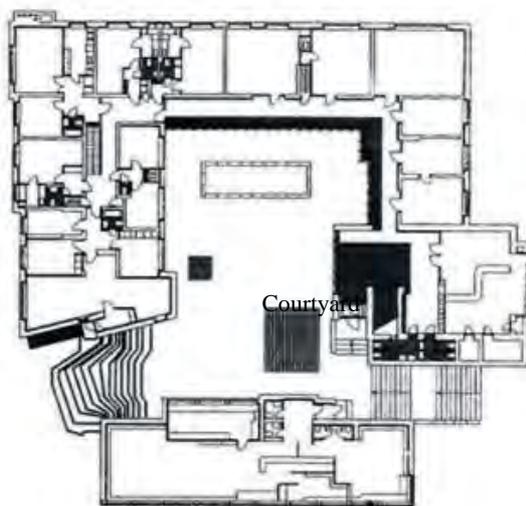
The openings are rhythmic on the facades. The use of timber screens as door openings around the public corridor enlivens the forest nature of the context. Natural light is entered through a large rectilinear opening. Light is filtered by wooden slats and reflected on the interior (Weston, 1995: 137).

Figure. 3.3-1 illustrates the plan at court yard level of the Town Hall of Saynatsolo (Weston, 1995: 137).

Ventilation is provided in an established system between the ceiling and the roof, efficiently enough so that both primary and secondary beams can easily cross each other perpendicularly (Weston, 1995: 137).

Aalto's use of the courtyard planning originated from the Greek and Roman buildings, and courthouses (Weston, 1995: 138). He believed that the essence of the courtyard designs had an inherited value. The design was aimed to accommodate all citizens although the seventeen metre council chamber was made of expensive bricks. The council chamber was referred to as the tower and was presented as a symbol of government. Its form was derived from the Italian hill towns. However, the roof designed reflected free, living and flexible forms. He used an asymmetrical butterfly roof for the council chamber. The planning of the buildings shows an organic creation that was used to facilitate the spatial organization (Weston, 1995: 138).
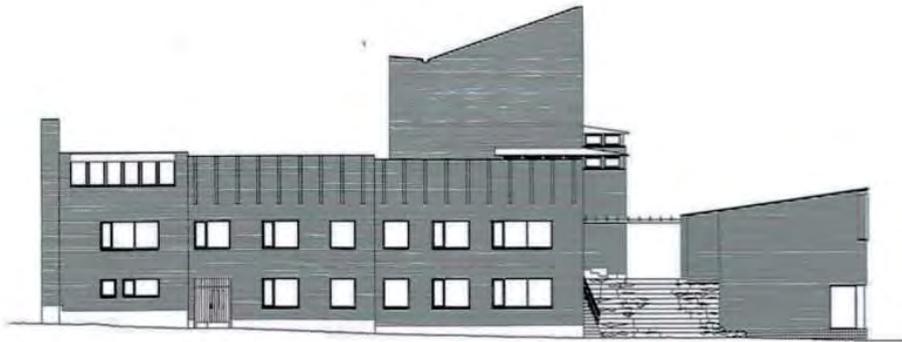
Figure. 3.3-2 illustrates the West Elevation of the Town Hall of Saynatsolo (Weston, 1995: 131).

The western wing (Figure. 3.3-2) was angled so that it expressed a contained space of the courtyard when one enters the space via the stairs. It allows a diagonal view into the space – a perspective view. The main entrance is marked by a scale factor of single-storey building and the solid mass of the tower. The procession to the chamber is experiential and symbolic of a ceremonial route (Weston, 1995: 138). Aalto's works were specific to its region and climate; hence the buildings marked an identity in the landscape. The next section explains the origin of regional architecture and how it has evolved with time.

3.4   Regions and Identities

Regional architecture can easily be distinguished since it has a specific identity and is often allied with a particular group. For example, the Greeks made use of architectural elements to represent the identity of a group in the political context (Tzonis, 2003: 11). The Doric, Ionic and Corinthian columns were significant to the regions and identities of groups. Vitruvius also advocated regionalist designs. The concept was given form in terms of physical impressions of the environment. He stated that climatic and physical conditions of the environment influence the building and therefore the individual. Natural conditions would dictate the type of building and positioning of roofs, if sloping. Hence these conditions affect and dictate the type of people in that particular region (Tzonis, 2003: 11).

Since the renaissance period, critical regionalism has been influenced by an exterior power: the international style – a universal architecture that architects wanted to bring about. However, Mumford's theory of regionalism was based on relativity; associated with a global context. In this sense, regionalism was evolved internally and sought out to engage globally (Lefaivre, 2003: 34).

Mumford mentioned that regionalism is not about utilising the available materials or copying the traditional styles (Lefaivre, 2003: 35). In fact, it meant adapting to the 'needs of the region'. Mumford shared Richardson's notion of adapting the local context to the use of new techniques and new materials. Mumford strictly refrained from traditional methods. In addition, aesthetic and spiritual benefits of landscapes were abandoned. Regional meant 'a place for personal touch' apart from the genius loci. He was in favour of restoring the balance between man and nature. He stressed on preserving the wildlife and forests (Lefaivre, 2003: 35-37).

His intention was to make use of technology to provide optimal and sustainable outcomes. For instance, ventilation is more efficient if the natural modes are used rather than the air conditioner. Yet, emphasis was laid on an ultra-modern infrastructure. Another aspect was the multicultural idea which he advocated and was convinced this notion would mark future development rather than the traditional mono-cultural communities. Mumford's approach of critical regionalism was a balance between the regional and the global. He supported the argument by stating that each culture regionally has a universal component attached to it and every culture is influenced by

other cultures and regions. Local resources are often utilized in their best ways when external ideas or methods are applied. So, Mumford strongly suggested that the approach must be open for a better experience. Identity and sustainability are the main outcomes of this theory invoked during the post-war era (Lefaivre, 2003: 38-39). However culture and nature were not omitted in the application of this theory.

3.5   Culture and Nature

Critical regionalism is directly linked with nature. It has a direct impact on nature than the other styles of architecture. 'Placelessness' can be achieved in a situation where technology is applied to a site's topography, for example in creating a flat land of an irregular site. However, the same site could be terraced for the erection of a building. In this case, there is an interaction with the site where the natural topography is retained. The act of terracing a site can be an engaging experience as it may actually be cultivating the site. The culture of the region is influential in creating a form. The topography can be used to enhance an existing urban fabric with the use of light and climatic conditions. These two natural forces can create a better environment. For instance, the window can be architecturally designed to define the character of the region and express the place it is situated. The engagement of culture and nature can be used to illustrate the poetic essence of place in the form of light and art. Ventilation strategies also reflect the nature of the local culture (Frampton, 1981). Contextually, the historical, geological and agricultural values are the cultural aspects of the site. The layering of the site therefore consists of various elements that embody the built form while allowing a transformation over a time period. The regional issues mainly include climatic factors where for instance glare may be extreme in certain conditions while in other cases it can be controlled with the use of sun breakers. Kenneth Frampton states that the governing principle of architecture is the tectonic rather than the scenographic. He stresses on the way form is expressed in structure - in a poetic way that combines the material, craftwork and gravity (Jencks, 1997: 99).
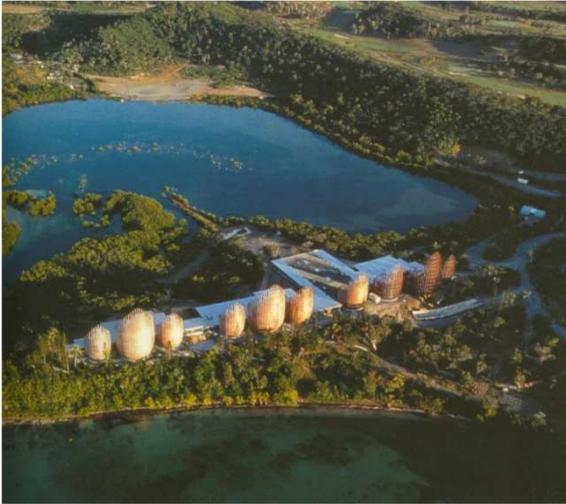
Plate. 3.5-1 illustrates the Tjibaou Cultural Centre in New Caledonia by Renzo Piano (Lefaivre, 2003: 83).

An example of regionalist architecture is the work of Renzo Piano at Tjibaou Cultural Centre (Plate. 3.5-1). The aim of the project by Renzo Piano was to allow the functional aspects of the Tjibaou Cultural Centre to reflect symbolically the Kanak civilization by embracing the elements of the local architecture. The design reinterpreted the huts of the local civilization and created buildings that had a double shell supported by wooden ribs. The beam structures were clad of Iroko wood which is the typical material utilized in the local houses. The building pays homage to a culture while respecting its traditions and history, past, present and future (Lefaivre, 2003: 83).

Figure. 3.5-1 illustrates the plan of the Tjibaou Cultural Centre (Piano, 2002: 24).

The complex comprising ten buildings has a height range from twenty to twenty-eight metres. It is situated in a green landscaped area surrounded by sea water (Figure. 3.5-1).

Plate. 3.5-2 illustrates the human scale compared to the building's structure (Piano, 2002: 27).
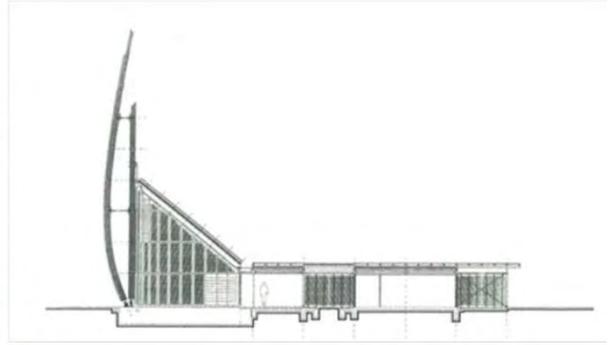
Figure. 3.5-2 illustrates a typical cross section of the Tjibaou Cultural Centre (Piano, 2002: 27).

Different functions occur in different buildings that include cultural activities such as conference rooms, library, exhibition spaces, offices, auditoriums for concerts and dance performances. The architect made an effort to balance the traditional with the modern style with the use of technology (Piano, 2002: 22). The building is architecturally comfortable; the scale of the enormous shell structure is brought down to a human height with the single storey structures (Plate. 3.5-2), (Figure. 3.5-2). Therefore, culture and place are interlinked as seen in this case. The next section explains more about this relationship.

3.6   Place and Culture

Kenneth Yeang believes that regionalist architecture should incorporate the spirit of the place in any design (Jencks, 1997: 146). Place and time are the driving forces of this doctrine that involves cultural and technical approaches (Jencks, 1997: 147). To make the experiences memorable, space, matter and time come to one dimension that relates to the consciousness of the body. One is able to identify himself with that dimension and space that are an integral part of human existence (Pallasmaa, 2005: 72). Any specific site needs to respond to the existing social, physical, economic and political context it is in. Regionalist architecture is the bondage of culture with technology. Kenneth Yeang advocates the urge of embracing a holistic approach concept aimed at innovating forms corresponding to the place and time, rather than sticking to a definite aesthetic appeal (Jencks, 1997: 146). One of the main attributes to this philosophy is the relation to the climatic conditions of the place (Jencks, 1997: 147). Each society with its

cultural heritage, values the importance of places it contains. The Egyptians lived with nature that was predictable with seasons that would allow them to plant and harvest. In contrast, the Greeks who were merchant traders interacted with different people in numerous environmental conditions (Crowe, 1995: 74). Their ideas and thoughts were different but an evolving one. The Roman phenomenon of the Genius Loci was a great influence in reflecting places of unique character (Crowe, 1995: 75). They believed that a place was governed by the spirit. The Genius Loci was symbolic of the energy it generated and its presence was felt in the landscape (Crowe, 1995: 75). The sense of place is then generated when man begins to engage in an environment.

3.7 Nature and Sense of Place

Architecture was used as a medium in the past to permit the coexistence of man and nature. Man and nature are an integral part of the ecosystem of earth. Architecture should allow the users to be able to listen to the music of the universe by recognising the spirit of rationalism and irrationalism. Humans are always interdependent with nature – the Universal Mother (Jencks, 1997: 113-114).

A sense of place is regarded as an environment that has become 'dimensionless and timeless'. Crowe (1995) is of the opinion that a sense of place can be felt without consciously recalling it. It indicates a holistic character. Such a place is unique, instantaneous and familiar to the user. This quality facilitates people to adapt to the environment. There is also a hierarchy in which people enjoy these places. The human bodies in general are related, orientated and bound to this particular environment (Crowe, 1995: 71-72). Hertzberger (2002) commented that the essence of spatiality gives rise to various aspects about architecture that include feeling and sensation (Hertzberger, 2002: 31). The sense of space is viewed as an experience in terms of images, sounds, materials and quality of light. Space as an experience is believed to allow the user to imagine a dimension (Hertzberger, 2002: 31-32).

Kenneth Yeang believes that vegetation should become part of the built environment and an integral part of the regionalist design (Jencks, 1997: 164). The relationship between the inorganic and the organic should be reinforced; the built structure and the organic materials. Transitional spaces such as verandahways and terraces were used in

traditional architecture for climatic benefits. Natural energy sources may be used to create a good interior environment by increasing opportunities for cross-ventilation and natural light (Jencks, 1997: 164-165). However, critical regionalism had one major outcome – cultural identity of the place.

3.8   Cultural Identity

Culture is a synergy of multiple generations. The roots from where humans came from are valuable. An identity emerges from cultural, environmental and social factors. Culture has the power to bind society together. Values are required to integrate in societies. Culture is linked to place and allows continuity in the living process. Language and lifestyle give meaning to space. Cultural factors are associated to climatic conditions and material resources to generate forms (Day, 2002: 147-148). The attempts of most designers have been to showcase architecture in the locality it belongs to establish the region's identity. Architecture creates an opportunity for social interaction to occur. Spaces dictate the ways people meet. A diverse spatial arrangement may allow distinct environment for various users. Form, materials and scale are the combining elements that may inculcate a sense of peace in architecture (Jencks, 1997: 154-155). Pearson (2000) stated that cultural identity is the amalgam of the past and present and this notion is further strengthened by Charles Correa who affirmed that "we have to know where we are coming to know where we are going" (Pearson, 2000: 121).

Mumford stated that culture and identity are conditional in their architectural expression (Eggener, 2002: 228). He stressed on the use of regional forms to meet the conditions of life in an aim to make the individual comfortable in his environment. Moreover, they reflect the conditions of culture in the region. Mumford's perception was modern and self-reflective whereas Frampton indicated something more than 'comfort, accommodation and reflexive expression' (Eggener, 2002: 228-234). On the other hand, Paul Ricoeur pointed out that the phenomenon of universality brings imbalance to the existing cultures. Frampton however described that critical regionalism was meant to challenge traditional forms and cultures in a modern conception. Ricoeur then stated that Frampton's critical regionalism was pivoted at a central contradiction when the theory suggested a modern approach but yet proposed a return to the sources (Eggener, 2002: 228-234).

However, Pearson (2000) said that tradition and modernity cannot be regarded as separate elements – they are the two sides of the same coin. Therefore they need to be considered concurrently. A building is not a rigid entity but a living and ecologic scheme that should emphasize on memory, experience and is the platform of invention. Hassan Fathy, the famous Egyptian maestro, was inspired by his country's tradition and buildings, so he attempted to preserve his culture (Pearson, 2000: 122). He utilized local materials such as mud-brick and traditional building forms. For instance, internal courtyards, vaulted and domed roofs were adopted as construction styles over thousands of years. Miraculously these structures evoked tranquillity and comfort in a harsh climatic landscape. He interpreted the natural environmental controls of water, wind and heat to employ in his works (Pearson, 2000: 122). A deeper critique of this theory occurs in the next section.

3.9 Architectural Context of Critical Regionalism

Frampton refers to Tadao Ando as a critical regionalist and uses this doctrine to describe Ando's architecture (Wu, 2006). However, Catherine Slessor views Ando as a concrete regionalist in the way he has adopted concrete to the local context (Wu, 2006). Although Frampton has parallel views on critical regionalism as Tzonis and Lefaivre, he advocates an immediate consideration to the placeless monotony. He seeks a direct interaction with nature (Wu, 2006).

Ando makes use of the same nature to give meaning to architecture through the use of light and terrain (Wu, 2006). An example is the Rokko Housing at Kobe (Plate. 3.9-1). The project is set on a steep slope. Instead of leveling the site, Ando preserved the tectonics of the mountains by placing the building quietly in the natural landscape.

Plate. 3.9-1 illustrates the Rokko Housing set on a terrain (Wu, 2006).

Frampton believes that Ando's work is critical since it opposes the urban development in Tokyo and is against the influence of consumerism of the modern city (Wu, 2006). Metabolism was a movement half a century ago and it was based on new urbanism for a change and renewal in the city. That movement led by Kenzo Tange was driven by technological advancement and prefabricated structures that would easily be interchangeable (Wu, 2006). Ando's work is different in that it creates space that is physically and psychologically separated from the outside world (Nitschke, 1993: 72). It is called a purified place where the users connect with one another. It is known as the shintai – the union of body and spirit. Shinto is an indigenous religion of Japan. There has been a shift to Buddhism that is turning inward for human consciousness. Rather than psychological renewal brought by Shintoism, one is now seeking spiritual rebirth with Buddhism. One leaves behind the trained priest and joins the journey led by an enlightened master like Buddha who is a guide in achieving a holistic experience from meditation (Nitschke, 1993: 72-73). Ando uses the wall as a territorial articulation of space (Wu, 2006). The wall creates a barrier between the purified place and the urban space. The aim is to establish a natural sacred relationship with the user, the building material and the context. The architect does not utilize vernacular techniques but instead creates an architecture that is revitalized with the interplay of light, material and detail. Yet, his architecture reflects a sense of tradition and sentimentality (Wu, 2006). Another fundamental aspect of this theory is climate which is discussed in the following section.

3.10   Climatic Response to Architecture

In his article on *"Charles Correa's poetry in concrete",* Ajanta Sen Poovaiah (2009) describes Correa as a universal architect whose works are consciously responsive to climate. Charles Correa states that a building has to respond to climate and meet the needs of the users (Poovaiah, 2009). Climate control is achieved by seeking alternatives apart from the use of sun angles and louvers. The section, plan, shape and heart of the building must reflect the consideration of climatic conditions. An example is the Fateh-pur-Sikri capital complex of the Emperor Akbar. Beyond the use of classical elements like scale, proportion, silhouette and material, the building has a cooler temperature on the inside than the outside – a margin of ten degrees difference. This has been achieved by use of open pavilions and courtyards that accommodate fountains and running water.

The evening sky is a sensational experience that an individual must personally experience to understand the deeper meaning. Correa refers to the architecture of deep structure that generates the form. He explains that luminosity, air movement and temperature are the main factors to focus on while establishing a micro-climate for the local context that serve the users of space (Correa, 1980: 87).

Correa (1980) refers to the Padmanabapuram palace (Figure. 3.10-1) located in a hot and humid landscape. The structure responds to passive breezes and light. The Royal pavilion is located on a plinth and forms a pyramidal structure. The King sits on the top of the pyramid while his courtiers are at the lower levels around him. The design is successful since enclosed walls are not required to protect from rain and sun.
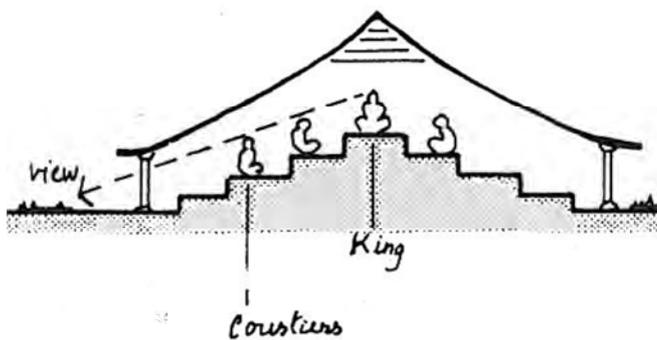
Figure. 3.10-1 illustrates the sketch of the Palace structure (Correa, 1980: 88).

At the King's position, there is a distinct line of vision without any obstruction to the courtiers and the cool grass patch which is therapeutic during a hot climate. Correa applied this concept in the Kovalam beach development to provide cross ventilation (Correa, 1980: 88).

The natural slope of the hill was used to create the plinth platform. Cross ventilation is essential where humidity is above ninety percent in Mumbai. Correa mentions that the church's form was mainly evolved from Europe where the climate is cold in comparison to the hot summer in India. The church design has always been a closed box intervention. In contrast, the Mosques in the East have a different setting of congregation. The Mosques in India and Pakistan have courtyards that are open to the sky and are defined by colonnades around. Charles Correa applied numerous courtyard spaces (Figure. 3.10-2) in the design of the Salvacao Church. The functions of the church occur either internally or externally.
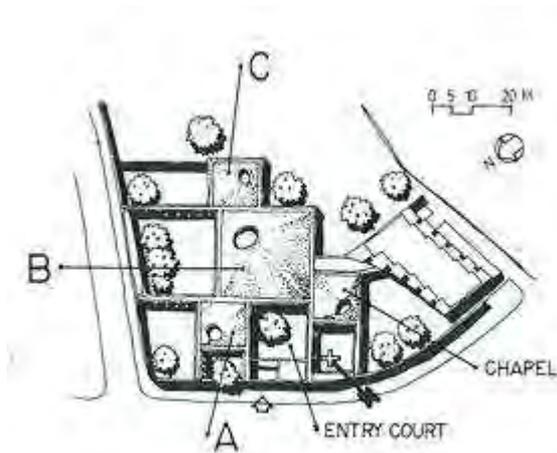
Figure. 3.10-2 illustrates the plan of the Salvacao church – a: baptismal font and confessionals, B: the pulpit and altar, C: the tabernacle (Correa, 1980: 92).
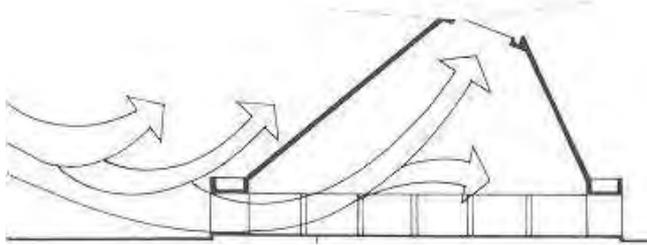
Figure. 3.10.3illustrates the section of the Salvacao church with ventilation routes of air flow (Correa, 1980:

The covered spaces are housed in concrete shells that allow hot air to rise and exit on a vent on the top. Fresh air (Figure. 3.10-3) is drawn by the courtyards into the interior spaces (Correa, 1980: 88-92). Poovaiah (2009) wrote that Correa's work respond to the metaphysical aspects that are ascribed to the cosmic space in relation to the Indian culture in a warm climate. The two principles of Correa are the 'open-to-sky space' and the 'tube-house' to which he acknowledges the need for the conservation of energy.

These two concepts are actualized in the plan and section of the building. In a warm climate, Correa aims to make the journey to the dwelling experiential rather than just an image-making process. He strengthens the experience by relating to the quality of light and the ambience of non-static air (Poovaiah, 2009). Correa therefore recommends that the natural elements have to be identified and recognized to feel their essence in space. Under warm conditions, energy can be conserved by disaggregating spaces. Architecture can be used to create the yin and yang, figure and ground configuration of spaces. For instance, sun rays can be blocked by closing the house to their exposure but the clever use of slope roofs may allow cross ventilation via air vents. The Ramkrishna House built in 1962 is an example of the tube housing (Poovaiah, 2009). The warm air rises to the ceiling and escapes through a vent at the top while fresh air is drawn into the building through the windows.
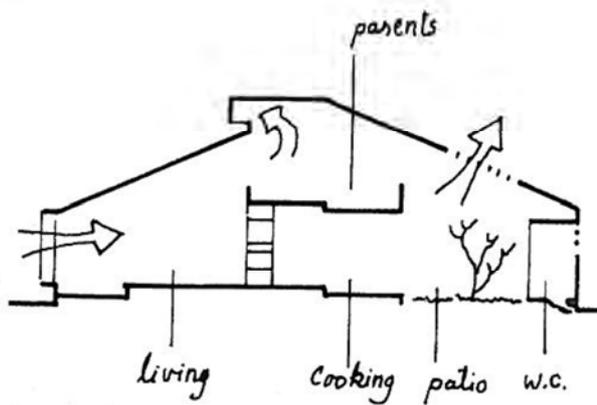
Figure. 3.10-4 illustrates the ventilation air flow in the Ramkrishna house (Correa, 1980: 96).

A natural convectional current is set up (Figure. 3.10-4). Correa designed two sections: summer section and winter section. During summer, a pyramidal space is created internally closing off the sky and is used during the late afternoons. The winter section is a reverse pyramid open to the sky. It is used during the cold season and is appropriate for summer evenings (Correa, 1980: 96).

The house is based on the concept of spatial and climatic conditions that allow a better living environment. The plan (Figure. 3.10-5) has a series of parallel load bearing walls that are accompanied by interior courts. The living area opens out onto the garden on the south; the building is situated on the northern end of the site to maximize the garden space (Correa, 1996: 242).
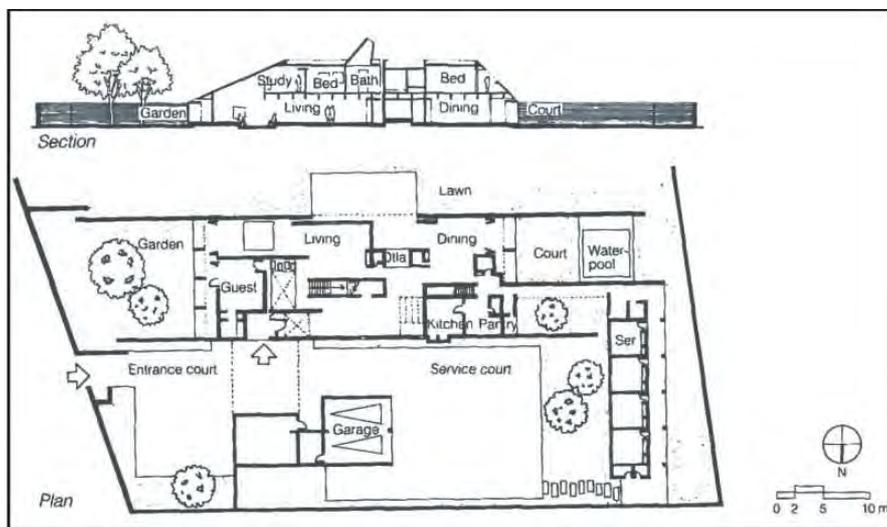
Figure. 3.10-5 illustrates the section and plan of the Ramkrishna house (Correa, 1996: 242).

Poovaiah (2009) appraised Correa's way of thinking which is analytical and experimental for a vision of the future. Correa is influenced by the teachings of Buckminister Fuller who is said to have instilled the drive for innovative designs (Poovaiah, 2009). An example is the Crafts Museum in Delhi that has a subtle approach. On one hand, the building houses the 'humble objects' of the village houses while at

another level a pathway is used to accentuate the experiential journey by surprising the visitors with the beauty of items displayed at bends and corners. Despite having a western education in architecture, Correa has adopted the western philosophies, yet applied them in the Indian context (Poovaiah, 2009). Correa's work can be compared to projects of Mies van der Rohe who never adopted the sky although his work was of pure geometry. The Mughal domes, in contrast, relate to the sky and create the yin and yang interplay with the sky. Le Corbusier also considered the sky dimension by implanting garden roofs in his designs (Poovaiah, 2009).

3.11   Conclusion

Critical regionalism is a doctrine that deals with the issue of 'placelessness' and identity by considering the context of the building. It is influenced by culture and nature of the place. However, a universal language was sought to be adopted with the introduction of this theory. The climatic conditions are strongly considered with strategies developed to create a better living environment. The architectural style is based on a regionalist approach where the architectural elements are employed to create an identity of place by catering for the needs of the region. Critical regionalism involves both the cultural and technological approaches. The objective is to embrace a holistic concept where innovative forms conform to the place and time. A cultural identity is established when people engage in a place for continuity in the living process – an amalgam of the past and present. This theory addresses the direct interaction with nature. A sacred relationship is formed between the user and the building in its context. Climate control enhances the inner experience with the built environment. A deeper understanding of the relation that man shares with the environment is studied in next chapter where various architectural qualities are discussed.

CHAPTER 4

PLACE THEORY AND SACRED ARCHITECTURE

4.1   Introduction

This chapter involves the methods through which man interacts in an environment. The main analysis includes the human senses and how they influence man engagement in space. At another level, this chapter discusses briefly and partly some aspects of the place making. A deep understanding of the human body and the various associated bodies will be reviewed. The human evolution will be another spiritual component to comprehend. The understanding of human behaviour is essential and will be combined with the social relevance of a place. The characteristics of a place will be analyzed to explore the defining elements of silence architecture. Next, the chapter deals with cosmic architecture, its constituents and the methods used to achieve it. A profound understanding of the Indian architectural principles of Vastu Shastra will be sought. The aim is to analyse the approach of the science of Vastu Shastra in designing a harmonious and holistic environment. Geometry, proportion and order are the main elements of sacred architecture. Forms and symbols combine to create harmony of shapes and symmetry in the universe. An understanding of their importance in sacred buildings will be required. The human body is a mini universe and its relevance to architecture must not be discarded. A thorough study of the human body, its anatomy and symbolic aspects is essential to examine the numerical properties associated.

4.2   Psychological and Social Importance of Place

Light is the root of colours. In the form of energy, colours can affect the mind and emotions. Colours therefore influence humans psychologically and physiologically. Red colours can worsen the pathological condition of an individual while green colours can enhance it. Colours of greater wavelengths are more arousing, for example red colour (Mahnke, 1987: 1-2). Colours are closely linked to beauty in creating a harmonious environment (Plate. 4.2-1). In contrast, glare is one of the drawbacks of design. It causes strain on the eyes. Window walls need to have colours of light magnitude to decrease brightness and matte surfaces are preferred on reflected surfaces to reduce glare. When illumination is at its peak people prefer a cool colour temperature and vice versa. Objects and surfaces have a common colour temperature under warm light at low intensity and under cool light at high intensity (Mahnke, 1987: 40-41).

Plate. 4.2-1 illustrates a depiction of colour and texture in the Indonesian Clinic and Library made from shipping containers (Meinhold, 2010).

John Ruskin viewed decoration as the outcome of art of the building. His philosophical approach showed that decoration was an essential portion of architecture (Hearn, 2003: 271). For instance, colour of the materials make up the fabric of the building. Ornamentation enriches the quality of the structure (Hearn, 2003: 272).

Human's emotional attachment to a particular place may be regarded as pleasant experience. Ancient cities are the locations where people find pleasure, since the urban spaces and streets were designed to invoke uniqueness and grandeur. Unfortunately, contemporary cities lack symbolic and historical backgrounds. All the ills of society have led to affect the physical and psychological health of space users negatively. In order to create workable civic spaces, more meaningful and liveable cities are necessary. The psychological and sensual effects of the urban form are more of a concern than the functional aspect. Orientation in space and time allows the observer to relate himself with the urban centre, with an emotional sense of how the present moment is linked to the past and future. This is marked by a sequence of experiences, directional lines that lead towards a landmark, spaces of significant form and character. The sense of familiarity and history is strengthened by the physical form. Warmth and attachment include the human care nature, the human scale which projects a comfort zone, enclosure creates a protective transition and signs of life are seen when there is human activity or the use of street furniture (Bullock, 1977: 221-222).

Behaviour is often observed in a natural setting, for example in animals, whereas human behaviour will be studied in their work environment. The psychological phenomena for instance sleep deprivation, has enabled to identify certain factors that have the cause-after effect on man. Changes in sound, light and pressure cause man to become sensitive upon his actions. These external factors need to be controlled in order to have a better human performance in any environment. However, a complete control is rarely

achieved owing to uncontrolled factors such as the temperature of the room and time of day that may affect a dependent variable (Bullock, 1977: 221-222).

Besides, stimulus and relaxation make environments pleasurable with the sight of activities. Sensual delight is 'the satisfaction of order, variety, rhythm and contrast through the senses'. It can be achieved by a quality of space that is invigorated with colour, texture, shape and proportion. Movement and views in a space create an enjoyment leaving strong impressions when one moves in transitory spaces. The clarity and unity of form may lead to less fatigue and ambiguity in sensing spaces. Spaces become more pleasant when they relate to one another. For instance, the use of texture may initiate rhythm, causing element to be in harmony or contrast. Odours have direct emotional effect on man and are linked to his memory. For example, the street passage may be punctuated by the smell of a flower, smoke, car or fumes. However, offending odours should be excluded and pleasant smell should be catered for. Natural sounds like leaves in the wind are rhythmical and have positive effects on the human mind (Zakaria, n.d).

Natural elements such as stone, brick and wood enable the ocular sense to examine the surfaces and become associated with their state of matter. Pallasmaa (2005) states that natural elements have an embedded age and history that surface out. He points out that matter subsists with a ceaseless time (Pallasmaa, 2005: 31). As a result, the experience of materials in the built form is enhanced. In comparison, machine-made materials such as glass panels, synthetic plastics and enamelled metals do not provide any indication of their age of material essence. Although the technological materials are produced towards an ageless perfection, they miss out the dimension of time. Transparency and the weightlessness structure is a contemporary feature of imagery that causes a sense of floatation with layers that give a sense of spatial thickness. The use of movement and light affect the senses. But it may have negative mental consequences as American therapist Gotthard Booth says that man is rooted naturally in the frame of continuity of time that aids him to undertake an experience (Pallasmaa, 2005: 31-32). Experiences are led by architectural factors such as image and identity generating the physical quality of place.

4.3   Image and Identity of the Built Environment

The identity of the human race is marked with a sense of belonging and orientation. Martin Heidegger believes that a shelter is a place where people can experience peace (Norberg-Schultz, 1980: 22). The process of gathering has strengthened the notion of that place. Heidegger states that poetry is the driving element that causes man to experience a sense of belonging to his environment. The poetic essence is felt when the environment becomes visible. This is achieved by applying the genius loci when the elements of place are brought in coexistence with man (Norberg-Schultz, 1980: 22-23).

Lynch (1960) analyzed elements that would create the identity and structure of a place – its imageability or legibility. Imageability allows people to orientate themselves to find their path leading to heighten the enjoyment of the place. People are required to become aware of the current environment so that the latter is readable or legible. Legibility is crucial in the design process where the environment has an image that constitutes of its identity, structure and meaning (Nasar, 1998: 6). When objects are identified, people see a recognized pattern in them and draw an emotional value from them. They make a distinct difference that is labelled as the identity. The pattern of relationships indicates that objects are organised in a structure. However, meaning is categorised: a lower-level, middle-level and a higher level. The first one is denotative meaning which relates to the recognition of objects; the second one is connotative meaning that refers to emotional feelings related to an object. Next, abstract meaning is broader values rather than the object itself. For instance, when a person identifies an area as a commercial zone, he experiences a denotative meaning that allows the recognition of the intended uses of settings. People then start to experience connotative meanings when they search for inferences such as guessing the quality of goods or the behaviour of traders in the area. This notion is called likeability. Abstract meanings are gained when a place is analysed through factors like cosmologies, culture, philosophical systems and the sacred (Nasar, 1998: 7). Moreover, there are basic elements that define space according to Lynch and these elements are identified in the following section.

4.4   Elements Defining a Place

Plate. 4.4-1 shows the masterly shape of the Vatican: it has visual links, set on an axis and is identified as a cultural landmark (Cohen, 1999: 223).

Lynch (1960) recognizes some elements that aid in creating an identity to a city. Landmarks (Plate. 4.4-1) are visible reference points of an external and physical form, for example, a building, signs or mountains. They depend on a scale factor, usually a large one makes them recognizable from a distance, for instance towers that may be symbolical (Nasar, 1998: 8), (Lynch, 1960: 48).

Paths are channels along which there is a movement flow. There are different types: streets, walkways, transit lines, canals and railroads. These paths are the image in the human mind as they observe the space while moving along them. Districts (Plate. 4.4-2) are larger areas that have a sense of identity and distinct character- it could be a precinct or a zone. Edges are mostly barriers or boundaries between two phases in a continuous space, for example, shores, edges of development or walls (Lynch, 1960: 47). Nodes are strategic focal spots in the city. It is a platform of activity: where people enter, travel or transit – a crossing of paths where events on the journey occur (Lynch, 1960: 47). Small public squares should exist as nodes so that they can generate a concentration of people in a community – allowing pedestrian flow through these nodes. The latter should be further utilized for symbiotic relationships – catering for evening entertainments apart from the daytime activities (Alexander, 1977: 164-165). The next segment discusses the need of vistas and linkages for accessibility.

4.5   Visual Links and Accessibility

The environment is structured and identified by the moving elements. The visual sensations consist of shape, colour, motion, polarization of light while the sensory elements include smell, sound, touch, sense of gravity, electric and magnetic fields

(Lynch, 1960: 3-4). Each component has its own meaning. Landscaped elements are made memorable in terms of an experience. Each path is defined and has a unique character. Consequently, people become aware through their senses; 'they seek through places, dig into them, move over them, cause echoes and set them afire'. People interact with one another giving birth to human values that lead to a holistic approach in the environment. Most social groups define the social space where there is a common care for place. The mental images of place and community allow centres and landmarks to be born. They become symbol of common use (Lynch, 1982: 293, 311).

Accessibility is a major issue to consider in the analysis of space. For example, the ideal city is one which has an easy access via roads, modes of travel and traffic controls through which services, movement of people and goods occur. Lynch (1982) states that access is mainly to reach other people: to kin, friends and acquaintances. Contact is evident in the human race leading to the development of human activities – going to work, worship, learn or recreate. Access is needed to obtain material resources such as food, water, energy and other goods – critical for human survival (Lynch, 1982: 187-188). People move to access places – shelters, open space, wasteland, centres and symbolic places. The natural environment is accessed owing to its sensuous quality, symbolic nature or for recreational activity. Access varies with time of the day and season, for example, people may be cut off at night or in winter. The 24- hour services in the city affect accessibility: shopping goods are readily available in malls than in stores (Lynch, 1982: 189-190). Interchanges may maintain a constant flow of users, while making it convenient for use. Workplaces and housing units must be distributed around them, connecting to the street life and different modes of transport should be easy to access at a specific platform (Alexander, 1977: 184).

Alexander (1977) is of the opinion that local densities influence the identity of the communities. This leads to the chaotic use of land. Densities are high towards the city centre and low on the outskirts, there is no visible and repeated pattern within the city. The result is that the highly dense areas do not contain intense activities as they are too widely spread. Even the low density areas are scattered and cannot hold a completely tranquil environment (Alexander, 1977: 150-151). The next section analyses the human senses leading to the architectural experiences in the built environment.

4.6   The Senses of the Human Mind

The notion of phenomenology focuses on the connection between concept and form. An order has to be established based on certain disciplines. The idea and phenomena are the outcome of a complete building. The metaphysical aspects before the construction phase is a skeleton of time, light, space and matter that were scattered. The use of composition such as line, plan, volume and proportion creates an order in the form of an idea. Martin Heidegger states that matter combines with tactility to create a poetic expression (Jencks, 1997: 110). Hence architecture is a thought that is fuelled by the idea via a phenomenon. Sensations form part of the experience that is distinct. The idea and the phenomena is therefore a unifying core that relates to the soul through emotions and intellectual behaviour.

The artistic sphere and aesthetics are a boost in creating a harmonious atmosphere. Appropriate materials may allow the penetration of sunbeams through deep windows; in the same way trees are fringed with light when the sun shines through. These qualities can be created in space where there is interplay of light and matter. Rhythms can be generated in bringing a stable and enlivening ambience. A spirit of place can be induced by working with the polarity of the cosmos and substance (Jencks, 1997: 149-151). The five senses become alerted when the individual enters a space defined by its character. The use of textures of materials and forms applied in a space can represent the natural elements on the outside, for example, wind, water, sunlight and mountain views. Such spaces can become a sensory experience (Jencks, 1997: 155).

The Western world acknowledges sight as the most prominent sense. Yet, vision was critical as it served as an indicator for certainty in the classical Greek thought process. Pallasmaa (2005) stated that clear vision and light are essential to reveal truth. Peter Sloterdijk's critique was that the eyes have an enigma that allows them to see and are able to 'see themselves seeing' (Pallasmaa, 2005: 15). Hence, the eyes are supreme to the other sensory organs in the body. Pallasmaa (2005) pointed out that the five senses were used to define a hierarchy system during the Renaissance period. This system was related to the image of the cosmic body. Vision was associated with fire and light; hearing was concerned with air; smell was connected to vapour, taste was related to water and touch was attached to the earth. However, the use of perspective was represented in a symbolic form and it described perceptive characteristics. With

technology, the senses have become further apart from one another. The code of culture has been influential in privileging vision and hearing while suppressing the other senses in a social context. Pallasmaa argued that sensations such as the enjoyment of a meal, the fragrance of flowers and responses to climate temperatures are dominant in this code of culture (Pallasmaa, 2005: 15-16).

However, the world is seen and understood through the ten senses - the five motor senses: hands, feet, mouth, sexual and excretory organs, and five sensory faculties: touch, sight, hearing, taste and smell - and the mind which is the sixth sense (Swami Paramananda, 2009: 25). The process of perception and knowledge is quick and complex. Light is vital as images of the world travel as waves through the eyes where the retina sends images to the brain. The mind interprets the images thereafter. The senses allow the individual to see, feel, hear, smell and taste. The mind is a central motor whereas the senses and the body are its instruments. In another aspect, the mind is the essence while the brain is the engine that moves the whole metabolism. When the mind, brain and senses are properly cared for in a scientific way, one can enjoy a healthy life. Otherwise life is nothing but hell. For instance, too much of noise or sound of a high frequency may cause irreparable damage to the sense of hearing. Too much tobacco and alcohol will destroy the taste buds of the tongue. Religion has always prescribed a righteous way of living which is scientific but its imposition has made it become an obstacle and taboo. For example, some religion forbids non-vegetarian foods. Too much play makes Jack a dull boy and too much learning makes Jack equally a dull boy. Buddha emphasized on the golden rule of the middle path (Swami Paramananda, 2000: 10). The mental structure of an individual can obscure his vision of the world. The mind being the base of the whole life should be transformed.

Pallasmaa (2005) advocates that the senses enable the individual to determine the various aspects of architecture. Architecture is not only perceived visually but it also consists of the realms of hearing, smell and taste. Le Corbusier and Richard Meyer emphasized on the sense of sight to reveal an architectural promenade (Pallasmaa, 2005: 70). The works of Le Corbusier incorporated materials and weight for a tactile experience. Frank Lloyd Wright and Alvar Aalto referred to the human condition and its interaction was important in the architectural space (Pallasmaa, 2005: 70). Therefore, there is a need to understand the process of human evolution and the layers that have formed and represent the human body.

4.7   Human Evolution

In his book, Human Beings: Behaviour and Evolution, Swami Paramananda (2002) speaks of the journey of the mind after it has passed through the animal kingdom and how it has evolved to reach the human state (Plate. 4.7-1). Here the mind has arrived to a stage where it has the available resources: the environment and body required to reach a state of a divine order. The awareness level has definitely increased from the animal consciousness - it started from the fish and became a human body; beyond is human consciousness. Now it has the potential to marvel with its five mental faculties to lead a material and spiritual life (Swami Paramananda, 2002: 37).

Plate. 4.7-1 illustrates the life cycle of creature on Earth – man is the last creation (Swami Paramananda, 1999: 11).

The human mind is much more developed in that it can reason, reflect and research. In addition, it has been given an intellect power to discriminate. Only an endeavour to seek self-knowledge will allow mankind to know their nature and origin (Swami Paramananda, 2002: 37). The evolution of man in a deeper context refers to its seven layers of bodies he constitutes. Existence can be simulated as a condensed form like the iceberg which is water in its condensed state. The first four bodies are the physical, etheric, astral and mental. The fifth layer is an ocean of light. Man is in its individual state till the fifth layer. He loses the individuality at the sixth layer which is the cosmic body. And the seventh layer is the nirvanic state, as professed by Buddha – the ultimate nature of energy which is consciousness. The seven bodies (Plate. 4.7-2) are of different layers but of the same Absolute (Swami Paramananda, 2002: 38-39).
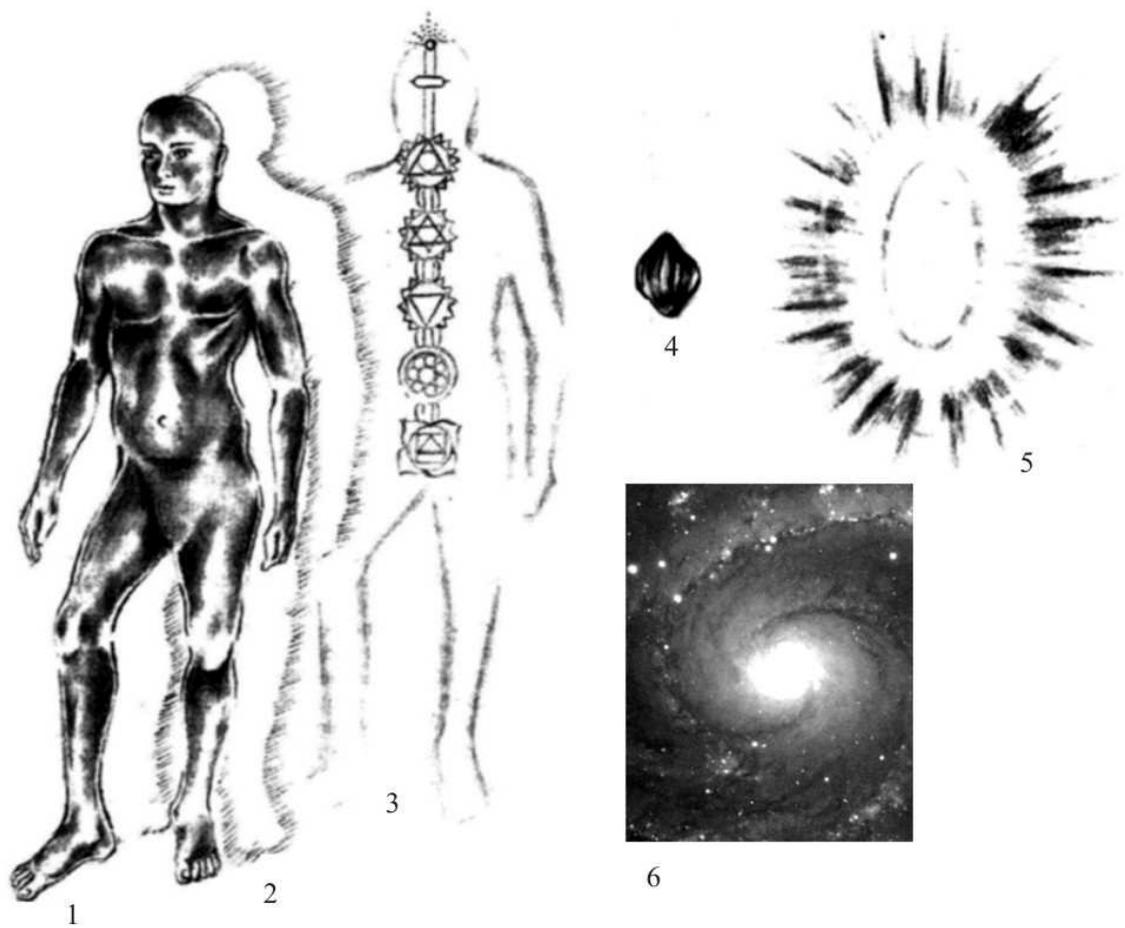
Plate. 4.7-2 illustrates the following: sketch 1 represents the physical body; sketch 2 shows the etheric body; sketch 3 illustrates the astral body; sketch 4 depicts the mental body; sketch 5 illustrates the body of light and sketch 6 illustrates the Brahma Sharir – the Cosmic Body. The seventh body – the nirvanic state is depicted as nothingness (Swami Paramananda, 2004: 10-12).

The universe is arranged in layers; the upper layers and lower layers. The layers are arranged according to consciousness level, the highest uppermost level represents the state of ultimate consciousness. Extraterrestrial beings are lives which exist outside earth. The universe in the form of an egg is organised in fourteen layers: seven belong to the upper abode and the rest of the lower abode. They are referred to as the superior and inferior worlds. There exists a hierarchy system in the universe. As one goes up the ranges, the beings are more evolved. The upper worlds are brighter in that the level of consciousness, spirituality, physical, mental and social powers are much supreme. The lower worlds are of negative forces comprising darkness which is part of creation – in its dual nature. The earth (Figure. 4.7-1) is situated in the centre and as a result human beings experience ascents and downfalls (Swami Paramananda, 1999: 161).
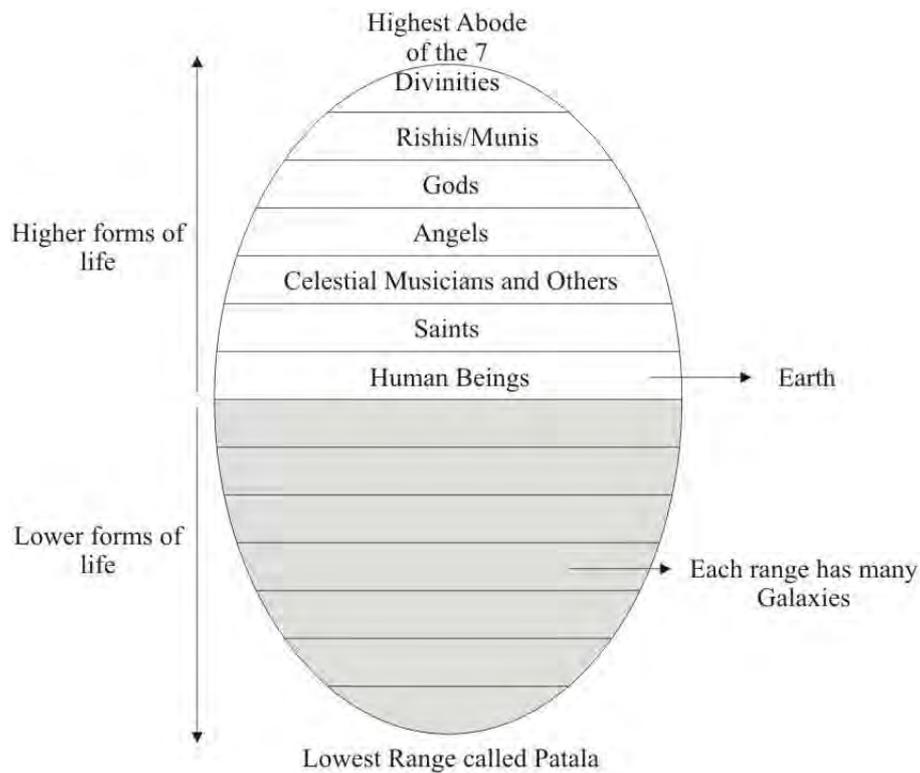
Figure. 4.7-1 illustrates the layers of the universe; the upper and upper abodes (Author's drawing, 2010).

Pallasmaa (2005) refers to the body experience in the city by justifying that the city actually is existent through the embodied experience. He states that the individual resides in the city and the city resides in him (Pallasmaa, 2005: 40). The city and the individual interact and identify with each other. Merleau-Ponty's comment is that the human body is located at the centre of a macrocosm of experiences (Pallasmaa, 2005: 40). Richard Kearney states that 'the body allows us to choose the world and the world chooses us' (Pallasmaa, 2005: 40). Hence, the body generates a system created to sustain itself with the senses. The constant engagement and movement of the human body in the environment constantly builds an experience. Hence, the body unifies with the world with an interacted self to the space. The following section illustrates how people interact in space.

4.8 Place and People in Space

Place has certain dimensions that define it; for example a play area, balcony or a study niche. A place is usually identified as safe where a person can recognize and familiarize himself. It has certain attached value to it and it is meaningful to people who feel

associated with it or derive something from it. On the other hand, a space becomes a place when it is inhabited by occupants. Hertzberger (2002) states that 'space and place are interdependent'. They relate to each other since they both bring out a sense of awareness and exist as a phenomenon. Hertzberger says that space is something that expands or withdraws any limitations imposed (Hertzberger, 2002: 28, 33). Space is therefore an opportunity to create something new. Space projects a view of freedom and also enables a freedom of view. Space is said to be a room that is undefined and it can also be a place to fill. Space has many meanings and interpretations such as ambiguity, transparency and layering. Usually a dimension is attached to it – the third dimension (Hertzberger, 2002: 28, 33).

Moreover, Steven Holl claims that architecture is restricted to a circumstance and that it is weaved with the experience of place (Jencks, 1997: 109). The site location has a physical and metaphysical impact on the conception process. The physical aspects constitute of vistas, solar angular projections, circulation routes and accessibility. They, in turn, are the demands of metaphysics in architecture. The latter does not intrude the landscape but rather it uses the environment to display functionality. Architecture needs to showcase a poetic intervention so that it becomes experiential in nature (Jencks, 1997: 109). Besides, place theory is based on the assumption that the characteristic of a place is also accompanied by human response. The physical quality of space may have other meanings given by the users. For instance, trees in the grassland may serve as a council place for meeting of the local people. The trees can be associated with a kind of sacredness since it projects the image of human events (Crowe, 1995: 76-77).

On the other hand, Pallasmaa (2005) believes that an architect has an internal sense. It allows him to grasp the landscape, the context and the functions so that these aspects are formulated into a conceptual thought – a building that has movement, balance and scale. Unconsciously the body recognizes these factors that are immediately transformed into a work database led by the sensory experience of the designer. In a profound level, the architectural scale is subject to the building which the architect refers to by the projection of a body in a given space (Pallasmaa, 2005: 66). Space and structure are unconsciously mimicked in the human bones and muscles by sensory experiences. An example is the act of painting where the composition of the artwork is processed in the tensions of the muscular system of the body. In the same way, the building components are imitated via the skeletal system. Therefore the work is done by the body for the

erection of a column or vault according to this approach. Louis Kahn responded by saying that the brick aims to do the work of the arch. This is possible by mimetic ability of the body. Architecture is existent primarily due to gravity and earth. Pallasmaa affirms that architecture consolidates the vertical experiential dimension of the world by embracing its depth (Pallasmaa, 2005: 67). Hertzberger (2002) defines space as being shaped by its surrounding context and with the objects manifesting in it. The human eye can only perceive it through light. Georges Perec believes that it is the human view that plays an important role in the perception of space; how space is built and how close and the angles it is viewed (Hertzberger, 2002: 29). On the other hand, Maurice Merleau-Ponty claims that space is defined as 'being in itself' (Hertzberger, 2002: 29). Orientation, polarity and envelopment are the determining factors of space. Herzberger explains further that space can be defined by its periphery and objects in it. Space is usually accessible and used as a protective place (Hertzberger, 2002: 29). The qualities of space can be enhanced spiritually when silence architecture is introduced.

4.9   Silence Architecture

Plate. 4.9-1 illustrates the interior space in the ING Bank headquarters in Amsterdam – use of spacious open light wells at the centre of each towers allow natural daylight to flood the interior and greenery cascading down luxuriantly (Pearson, 2000: 62).

Healing usually occurs within human beings. There are forces in the environment to heal its qualities. On the other hand, silence is not described as a process or activity. A profound meaning would be the understanding of the nature of sound. In a tranquil atmosphere (Plate. 4.9-1), one can listen to sound which is life in a subtle dimension. The world is full of chaos and noise. Silence is therefore devoid from mechanical noise (Day, 2004: 203).

Plate. 4.9-2 illustrates the interior space in the ING Bank headquarters in Amsterdam – use of rain water flow forms and sculpture are utilized to create a soothing atmosphere (Pearson, 2000: 63).

The external noise can be reduced by putting in place obstruction such as walls, banks and buildings. Absorption could be in the form of vegetation. Noise is related to stress while silence is a form of healing. Inner silence can be sought by the practice of meditation. A healing environment should be accessible to all users to benefit from the holy silence. Silence can be said to be gentle and calm. Holy sounds enable the individual to experience the tranquility within. The atmosphere can be enhanced by the 'quiet endlessness' of water and the 'breath of air' (Plate. 4.9-2) (Day, 2004: 204).

Silence architecture can be achieved when the qualities of living in silence are studied and understood. One main aspect is balance that demands a focus and axis in design. In addition, it denotes scale and proportion. Usually, a small space may indicate modest, plain, ascetic and quiet environment. But the proportions must be correct with adequate textures and light. In contrast, a larger space may be awe-inspiring with a dominant scale. Dynamic or static appeals are the outcomes of proportion. That balance may reflect balance in the human body and may lead to the soul. A place of silence is one which is not intrusive but rather induces simplicity. Simplicity is normally accompanied by a focal axis. There is minimum variation and ambiguities that create this quality of life. There is interplay of light in the place or daylight, sunlight and reflected light. Gentle textures soften the planes and render a soul-living environment. On another level, coloured and combining materials may result in a quietening effect. A timeless environment may be born. A healthy place is where one gains strength or is empowered rather than losing it (Day, 2004: 203-210).

An example of architectural perfection is the Great Pyramids of Giza in Egypt (McCarter, 2005: 472). Despite their massive presence, there reigns a feeling of silence that apparently existed prior to its construction. Indeed when a building is constructed

its spirit is high since at that stage it is still free of servitude. According to Kahn, light is the catalyst of presences and he refers materials as 'spent light'. Light casts a shadow that belongs to the light itself. A threshold is created of light to silence and vice-versa. That threshold is said to be the inspiration of the design of the space itself. It is often transmitted into an expression of beauty. Kahn openly states that 'architecture has no presence but exists as the realization of a spirit' (McCarter, 2005: 473). In fact it is a reflection of the nature of the spirit that exists in space. Form is the binding of inseparable elements in space that conforms to the laws of nature.

With his consciousness level, man recognizes his desires and aims, in the aura of silence and light. Consciousness is omnipresent, in the rose, in the leaf and in the microbe. Form is a manifestation of nature and shape is the expression of form. Design is therefore the realization of these factors; the structural order, order of construction, order of time and order of space - all come into play in creating an architectural fabric (McCarter, 2005: 474-475). Louis Kahn describes the monumentality in architecture as being attributed to the spiritual quality that exists in a structure (McCarter, 2005: 455). The latter expresses a feeling of eternity that cannot be altered. Kahn writes that monumentality is mysterious, yet it has been created to a perfect structural composition, clarity of form and scale. Design is form-making in order from which there is a creative force. The nature of space is determined by its spirit and its will to exist is generated by design. Kahn states that order is intangible and it is associated with a level of creative consciousness. He believes that the diversity in design increases as its order intensifies (McCarter, 2005: 462-463).

Matter, space and light are combined to create silence architecture. Pallasmaa (2005) refers to the building after the construction phase when the noise of the workers and machinery has stopped. The place is in utter tranquillity. Silence is felt in the Egyptian temples guarded by the Pharaohs. In the Gothic cathedral one is reminded of the last dying note of a Gregorian chant led by silence in a voluminous space. The Pantheon is designed in such a way that one can hear the echo of the Roman footsteps. Old buildings take us back in time and reveal the silence of the past. Pallasmaa states that the silence of architecture is therefore 'responsive and remembering'. It is an experience that one embarks on and it reminds the individual of his existence by becoming attentive to the solitude that prevails (Pallasmaa, 2005: 51-52).

4.10   Cosmic Architecture and the Lotus Temple

The interrelationship between elements expresses the way man lives. Structures and meanings form cosmologies. The living forces in nature are the roots of the environment. Man evolves mentally if he grasps those meanings and qualities in an aim to interrelate the experiences of place. The creation is seen as the harmony between heaven and earth. In Ancient Egypt, the world was seen as space between heaven and earth. The sky has cosmic meanings (Norberg-Schultz, 1980: 23). Swami Paramananda (2000) shares his deep spiritual insight by stating that the pyramidal shape as seen in the Great Pyramids of Giza in Egypt has cosmic connotation in that its shape is able to attract cosmic energies. As a result, positive vibrations create an atmosphere conducive for spiritual practices – this idea is manifested in Mosque, Temple and Church designs as well (Swami Paramananda, 2000: 11).

Cosmic is derived from the word 'cosmos' which refers to space in the universe. Uniformity and absolute order are the main aspects of cosmic architecture which has a holistic appeal. Cosmic space is engaged with geometric order (Plate. 4.10-1). Usually a regular grid structure is established on orthogonal axes. The space requires a sense of visualization by the users to the surroundings. Order is formed by the juxtaposition of horizontal and vertical elements. Islamic architecture is composed of buildings such as Mosques on orthogonal grids. The design is accompanied by the influence of the culture. The internal space is experienced as a paradise world whereby subtle colours of white, blue and green represent the colours of light, water and vegetation (Norberg-Schultz, 1980: 71-72). Presently, cosmology is a whole that is moulded by people and societies in the world.

At an individual level, man has his own cosmology based on experiences and beliefs. The main aspect of cosmology is how people regard the universe which can be inclusive and reflexive. In some way, it generates positive solutions from the thoughts and concepts. Therefore, it supports the reality that it actually asserts (Michell, 1988: 199).
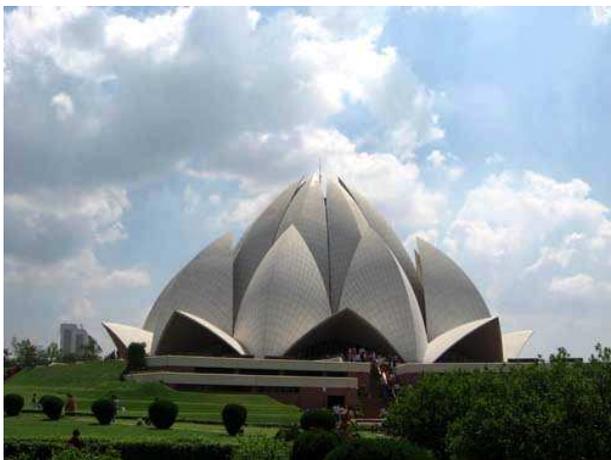
Plate. 4.10-1 illustrates the cosmic architecture of the Lotus Temple of Bahai Faith in India – forms used pertain to the attraction of cosmic energy (Riverwolf, 2009).

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The Lotus Temple of the Baha'i Faith is an iconic architectural structure in India. It is viewed as the Mother Temple in the continent. It was designed by Iranian architect Fariborz Sahba. The Lotus Temple accommodates people of all religions. The aim is to practise meditation in a perfect place to achieve peace of mind. The main hall can host two thousand and five hundred people at a time (Mueller, 2010). The temple complex is a half-open lotus flower surrounded by its leaves. Each component of the temple is applied nine times. The other functions are an ancillary block that houses the reception centre, the library with an administrative building and a restroom block. The temple is surrounded by nine pools (Plate. 4.10-2) that illustrate the leaves of the flower, with bridges, stairs and curved balustrades (Baha'is of India, 2008).The pools have an aesthetic appeal but more to that, they help in cooling and ventilating the building (Baha'is of India, 2008).
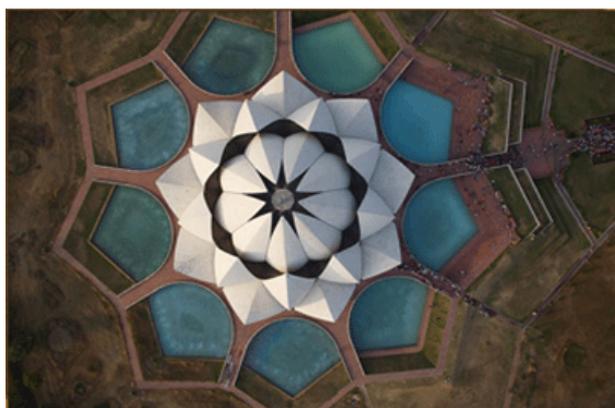
Plate. 4.10-2 illustrates an aerial plan of the Lotus Temple (Chorier, 2007).

The temple is a symbol that represents the Baha'i Faith by expressing simplicity, clarity and freshness by the architecture it reveals. The motif of the lotus flower as held in the hand is symbolic of divine birth in the spiritual world. It also represents eternal life, its preservation and procreation.

The lotus shape is used in many religions; it is applied as a perforated plaster work in the mihrab of the Malik mosque in Kirman. Its roots can be found in the Zoroastrian architecture. It is also representative of Mother Saraswatee in the Hindu religion. The lotus represents the womb in the Buddhist religion (Baha'is of India, 2008). In the Hindu mythology, the lotus flower represents the origin of Brahma who came from the navel of Lord Vishnu. Therefore, symbolically the lotus signifies pureness and serenity, and therefore the lotus temple is the perfect place to carry out meditation (Indian Temples, 2011).The lotus flower is poetically the emblem of beauty with its distinct decorative and fair appeal (Baha'is of India, 2008).

The form of the lotus caters for the various possible geometric shapes like spheres, cylinders and cones. All the ribs and shells are made in white concrete up to the radial beam level. The shells were reinforced while the binding wires are galvanized to prevent rusting of the material. The outer surface of the shells is clad in white marble which was cut and shaped to suit the geometry and pattern required in Italy and transported to Delhi.

Plate.4.10-3 illustrates an aerial view of the Lotus Temple (Indian Temples, 2011).

The crown of the arches is supported by three ribs: the dome rib and two base ribs (Baha'is of India, 2008). The lotus is made of three sets of petals (Plate. 4.10-3) of thin concrete shells with nine petals on the outermost set. The latter is referred to as the 'entrance leaves' since they form nine entrances around the mega hall.

These leaves open outwards. The next set opens inwards and is called the 'outer leaves'. The 'entrance leaves' and the 'outer leaves' shelter the outer hall structure. The third set of nine petals is called the 'inner leaves' and are partly closed with their tips opening out like an open bud. This set rests above all other forms and shelters the central hall. Lateral support is used to structure the nine radial beams. At the top, a steel and glass roof is placed at the radial beams to shelter the inner space from rain and allow natural light into the volumetric space (Baha'is of India, 2008).

Plate. 4.10-4 illustrates the interior seating area of the Lotus Temple (Maharjan, 2007).

The interior space (Plate. 4.10-4) is majestic in volume. The human body disappears in the space. Drawn by the electromagnetic field, the individual is immediately invited in a state of consciousness. The sound of the space is described as a powerful white noise that resembles a violin' sound, yet it is heard as an echo (Maharjan, 2007).

When seen from the inside, the layers of ribs and shells begin to fade as the view escalates vertically upwards (Baha'is of India, 2008). Cosmic architecture has certain set of principles that needs to be applied in order to create an environment with the manifestation of its spiritual essence. This notion is discussed profoundly in the following section on Vastu Shastra.

4.11   Vastu Shastra in Indian Architecture

The science of construction in Indian architecture is called Vastu Shastra. Vastu means habitat while Shastra refers to its science. Vastu is referred to as the suitable site for construction of a building. It was developed during the 6000 BC to 3000 BC (Reddy, 1999: 21, 23). Its knowledge was confined only to architects and was transmitted to their heirs through oral education or hand-written monographs. This science was mainly applied in temple designs and royal palaces. Vastu represents the basic element of civilization since the latter started with the construction of houses, cities and palaces. With time, Vastu was applied in dwellings as well. The aim was intended for sophistication and comfort of human life (Reddy, 1999: 30).

Vastu Shastra is usually associated with sites and buildings that would be designed to create an energy flow. The principles are laid down by the rules of cosmology: 'the sun's path, the rotation of the earth and magnetic field. It propagates the creation of energy and positive vibration. Flow of balance and harmony are necessary to create a holistic environment. Vastu leads to a successful and stabilized life. It is a medium that links the outer and inner spaces. Prasad (2007) says that it defines one's path which is free from any obstacles by building a positive connection between the microcosm - the individual and the macrocosm – the outer world (Prasad, 2007: 17- 19). According to Reddy (1999), in selecting a site, it is advisable to select a site that has a square or rectangle shape. The east-west length of the site should exceed the north-south length. There is much happiness and prosperity if a site is spacious. The topography of the plot is important as it has direct impact on the life of the occupants. A slope towards the north or east is blissful to the occupants. An elevated land on the west or south edge equally brings prosperity (Reddy, 1999: 54-56).

Apart from the four main cardinal points: north, south, east and west, the four intermediate cardinals: northeast, northwest, southeast and southwest, are more important in Vastu since the directions converge to make an angle. The cardinals have symbolic meanings. The east is called the paternal side and it should not be fully covered. The southeast begets health while the south brings prosperity, happiness and tranquillity. The southwest represents behaviour, attitude and mortality. The west side brings progress and pomp. The northwest is the governing body for relations with others cordially. The north side is referred to as the maternal side. The northeast ensures a continuity of lineage. The sun is an important factor to consider in Vastu. The Earth and other planets revolve around the sun. Vastu planning has therefore been devised so that the plot is divided into nine parts to symbolize the nine planets. The neutral space which is central is usually 3 x 3 = 9 squares and depicts the nuclear energy field. According to Vastu, it should not have major construction and should be open to the sky for outer space communication. It is a sacred space for rites, religious and cultural events. This space is termed as the lungs of the human body and is inhabitable (Reddy, 1999: 64-65).

The East edge is seen as a treasured direction since it is where the sun rises in the morning – it is symbolical to purification. In addition, the body is viewed as a magnet with its head as the heaviest and essential part. Therefore it faces the North Pole and the feet are positioned to face the South Pole. The North being a strong energetic and vibrant area is not used as an orientation to advocate dormant energy such as sleeping. Energy is therefore emanated from the Northeast; sites are designed to slope down towards East and North for this reason with open spaces and courtyards dedicated in the same area. The site should be devoid of any obstacles in that zone to allow a continuous flow of energy. The site should be highest on the southwest sloping down to the northeast. As such, the elevated southeast corner brings prosperity and fame while the northeast corner ensures health and draws richness from everywhere. A site with four roads is gracious and gates can be provided in all direction (Reddy, 1999: 80-81). Reddy (1999) writes that nature consists of the five elements: sky, air, fire, earth and water (Figure. 4.11-1). Vastu is a means to capture the positive bountiful power of the three elements; earth, water and fire (sun) in an appropriate and proportionate manner along with air to create peace and prosperity of human beings and the world at large.

Northwest AIR	North	Northeast WATER
West	SPACE	East
EARTH Southwest	South	FIRE Southeast

Figure. 4.11-1 illustrates the five elements of nature (Vastu Shastra, 2011).

These elements of nature help in creating a holistic environment by ensuring a balance with man and the material. Reddy states that the main characteristic of elements of sky, air, fire, water and earth are sound, sense of touch, shape, taste and sense of smell respectively, according to Vastu (Reddy, 1999: 14-16). To understand this doctrine further, a comprehensive study of the mandala is critical.

4.11.1 Vastu Purusha Mandala

The mandala is a plan that represents the cosmos symbolically and metaphysically. In the Hindu cosmology, the surface of the earth is represented by a square with four corners that refer to the sunrise and sunset, the north and south direction. The Vastu Purusha Mandala relates to the ancient Hindu architecture that is based on Vastu Shastra. The principles of the Vastu Shastra allow environments to be designed in harmony with the physical and metaphysical forces of the cosmos. Vastu refers to the physical environment while Purusha refers to the energy and soul of the cosmic man. Vastu Purusha Mandala therefore incorporates the heavenly bodies and the supernatural forces (Lakshmi, 2000: 107). The Vastu Purusha Mandala is usually in a square form. There are various types of mandalas depending on the way in which the main square is divided. The main square is subdivided; each side of the square can be divided from one to thirty-two divisions. Therefore the number of squares in the Vastu Purusha Mandala may vary from one, four, sixteen, twenty-five and so on to one thousand and twenty-four. The central space of the mandala is called the Brahmasthana where major construction should be avoided. The most important mandalas are the Chandika Mandala of sixty-four squares and the Paramasaayika Mandala of eighty-one squares. The normal position of the Vastu Purusha head in the northeast is depicted in the Paramasaayika Mandala (Figure. 4.11.1-1).

When divided by an odd number of squares the mandala is sakala - morphic and when divided by an even number of squares the mandala is nishkala - amorphous. An amorphous centre which is the intersection of grid lines at perpendicular is considered beneficial to worshippers as it has a great source of energy. It is most appropriate in temples (Jain University, 2010).
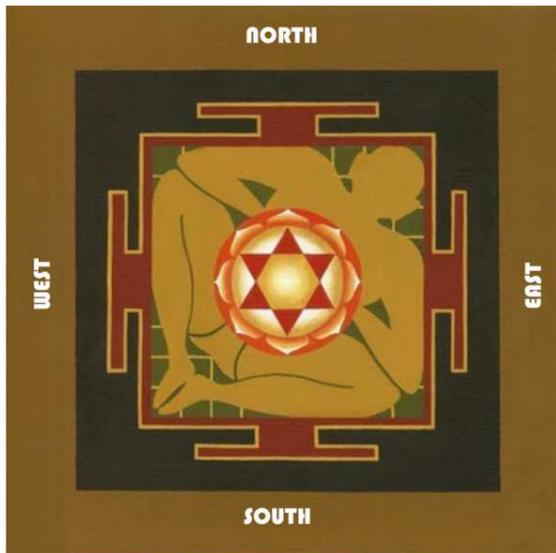
Figure. 4.11.1-1 illustrates the Vastu Purusha Mandala (Minu, 2010).

However for commercial usage, an odd number of modules are used since an amorphous centre will cause too much concentration of energy for human occupants (Jain University, 2010).
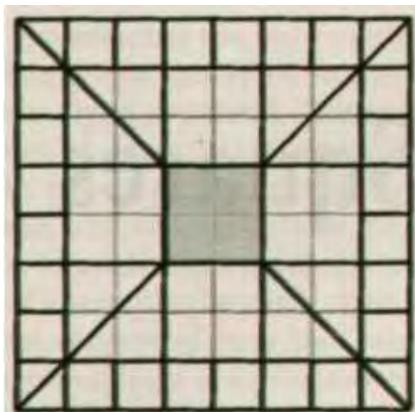
Figure. 4.11.1-2 illustrates the Amorphous Mandala of sixty-four squares (Lakshmi, 2000: 108).
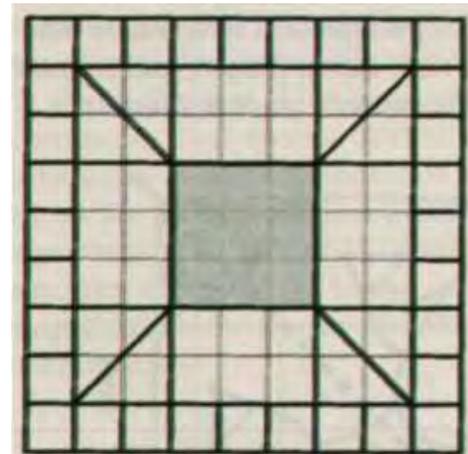
Figure. 4.11.1-3 illustrates the Morphic Mandala of eighty-one squares (Lakshmi, 2000: 108).

In the amorphous mandala (Figure. 4.11.1-2), each side of the square is divided in eight equal parts resulting in sixty-four divisions. The centremost of four squares constitutes the Brahmasthana. In contrast, the morphic mandala (Figure. 4.11.1-3) has a square divided into nine parts that form eighty-one divisions. The Brahmasthana is comprised of nine centremost squares (Lakshmi, 2000: 108). Design guidelines for the mandala planning explain the accommodation in various zones based on the applied cosmology.

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They also refer to what aspects are beneficial if employed but also state things that need to be avoided in certain positions.

4.11.2 Design Guidelines of Vastu Shastra

The zoning of functions is determined by the position of Gods in the mandala. The idea of a northeast alignment (Figure. 4.11.2-1) is to maximize light which in metaphor represents the sun that is a source of knowledge, consciousness and ultimately spiritual enlightenment. On the 21st June, the sun rises north east and daylight is longest with darkness short, hence this corner is ideal for the place of cosmic head - a symbol of enlightenment. Each god is given a particular seat and has certain forces attached to. Garbage is strictly prohibited to be dumped in the northeast area owing to the sacred nature of the place. Small plants are allowed to be grown in the northern and eastern sides. Large trees can occupy the South and Western side, since the east is a source of spiritual power and its energy should not be obstructed in any way. Planting in the South and West provide cooling effect as shade (Jain University, 2010).
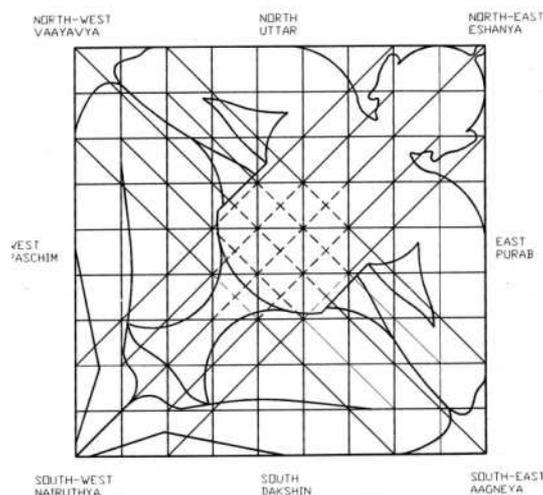
Figure. 4.11.2-1 illustrates the comic body that overlays a building site (Jain University, 2010).

The site should be designed to be higher on the West than East. By sloping it, there is an opening for light of divine order to the east. A slope also is useful for drainage of water. The doors of the building must not open to the South which is referred to as the direction of the God of Death. East, North and West are good locations for doors. The East is preferred for a main entrance as it welcomes divine light (Jain University, 2010).

Staircases and elevators can be located in the South, West or Southwest corner since they are least important. Kitchen or cooking area should be positioned in Southeast corner or Northwest, but cooking must face east. Southeast is the place of the deity of fire. Since cooking fire is a miniature sun, symbolically, one should face east while cooking. Meditation area is ideal in the northeast. It should not be in the southwest nor

should treasury. Symmetry is very important in Hindu aesthetics and planning. The site should avoid angular shapes but instead be a square or rectangle. Odd shapes may disrupt and cause imbalance of energy flow. Water bodies are significant in Vastu Shastra and are usually scientific as they relate to the human mind. They need to be positioned in the north and north-east zone since they help in creating the energetics of the Vastu. The Vastu concept points out that the perimeter and the modular planning should be least exposed to the sun. Even the form of the building should be designed so that exposure to the sun is minimized. This may be achieved by having shorter north and south walls with large east and west walls. Furthermore, the length of the north-south axis should be greater than the east-west axis in Vastu. The use of local materials has various benefits in architecture. Moreover, a harmonious environment is experienced in the spectrum of matter and energy. Immediately, there is a loving bond of oneness with the surrounding nature (Vastu Shastra, 2011).
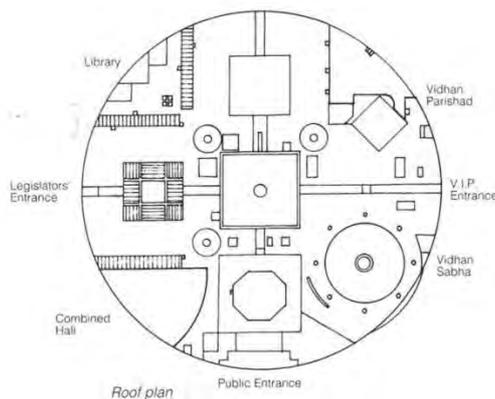
Figure. 4.11.2-2 illustrates the roof plan of Vidhan Bhavan (Correa, 1996: 198).

In 1980, Charles Correa made use of the principles of Vastu Shastra in the design of the Vidhan Bhavan State Assembly in Bhopal. The plan (Figure. 4.11.2-2) is composed of a series of gardens within gardens. The five major compartments are halls and courtyards that create microclimate of shade and running water. The idea was to establish an architectural experience in the way people would reach the various spaces (Correa, 1996: 198-200).

The movement patterns are carefully designed to form diverse and pleasurable architectural sequences. Circulation is always on the edges of courtyards to allow light and fresh air.

Figure. 4.11.2-3 illustrates the aerial mode of Vidhan Bhavan (Correa, 1996: 200).

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Bridges and ramps are used to create circumambulatory paths as in the Sanchi Stupa. They are progressions that allow users to experience the spaces in various dimensions. The composition (Figure. 4.11.2-3) is marked by solids and voids. Clarity of forms and well defined axes define the experiential journey (Correa, 1996: 198-200). The application of geometry is essential in Vastu Shastra. Pure Geometrical shapes are encouraged as they enhance the quality of energy flow. A deep understanding of geometry is discussed in the next section.

4.12   Geometry in Sacred Architecture

Geometry is essentially the study of space and architecture. Broadly, it is the formulation of space by construction or subdivision. The simplest enclosed space is the igloo that revolves around geometry (Blackwell, 1984: 3). A building must be designed to accommodate all the related elements of nature – rain, wind, fire, snow, earthquake and climatic changes. Nature and architecture are similar as they belong to the same surroundings. Buildings have to blend into the landscape without any disturbance to conserve natural resources. Frank Lloyd Wright's Falling Water is a building that is harmoniously composed of rectangular shapes functioning in a natural setting. Blackwell (1984) wrote when a design is conscious and rational, the geometry of architecture enhances the building.

Moreover, Day (2004) suggests that space and form have different experiences. Objects have presence and cause space to invite life. An object in an open landscape can render its surroundings when it is enclosed; elements such as water and earth may create a welcoming effect. Day sees form as 'the property of objects' which are 'dead' beings, yet they show a radiating sense of attraction. Buildings have various forms; there is a perception that innovativeness must be attractive. For instance, the circle shape is used for meditative or social forms. Axes are used to enliven static geometries (Day, 2004; 105-107).
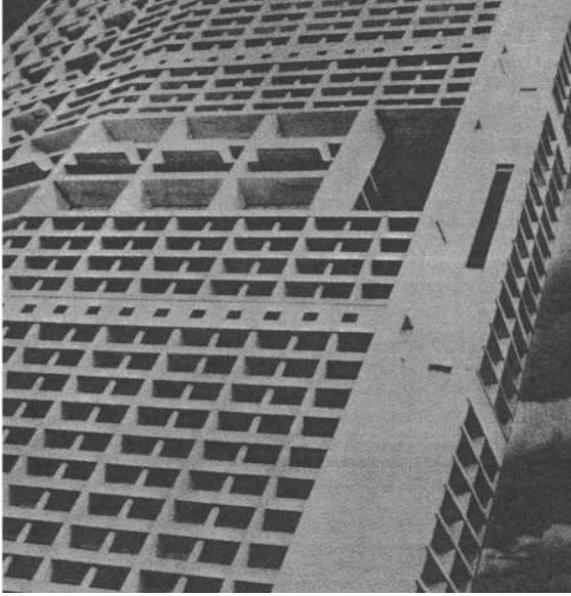
Plate. 4.12-1 illustrates the geometrical elements applied by Le Corbusier in his building in Algiers (Blackwell, 1984: 7).

In architecture, geometry is noticed in numerous projects. One such example is seen in the work of Le Corbusier in his office building in Algiers (Plate. 4.12-1). The building is composed of harmonious parts; plans and elevations reflect a sensibility. The planning principle adopts a symmetrical approach. The elements are applied using the golden mean while the sun-breakers reflect a purity of the silhouette – glare and direct sun rays are prevented.

Geometries are also used in designing roofs – domes, pyramids, cones, prisms and hyperbolas are the various shapes (Blackwell, 1984: 7-8). An example of the use of geometrical forms can be found in Balkrishna Doshi's work at the Tejal House (Plate. 4.12-2) in India.

Plate. 4.12-2 illustrates the exterior composition of forms of Tejal house (Pandya, 1998: 58).

Inclined and curvilinear planes are used to drift away from the simple rectilinear plan geometry of his previous works. Materials are selected carefully to create a free roof form. The house is radiant: it is designed according to Vastu Shastra principles, especially the zoning of functions (Pandya, 1998: 58).

Pandya (1998) writes that the free-flowing roof shell is accompanied by 'mirror-polished yellow stone flooring'; walls are fully glazed, the concrete surfaces are painted and walls are colourful. Doshi's work is clearly influenced by Le Corbusier who was his mentor.
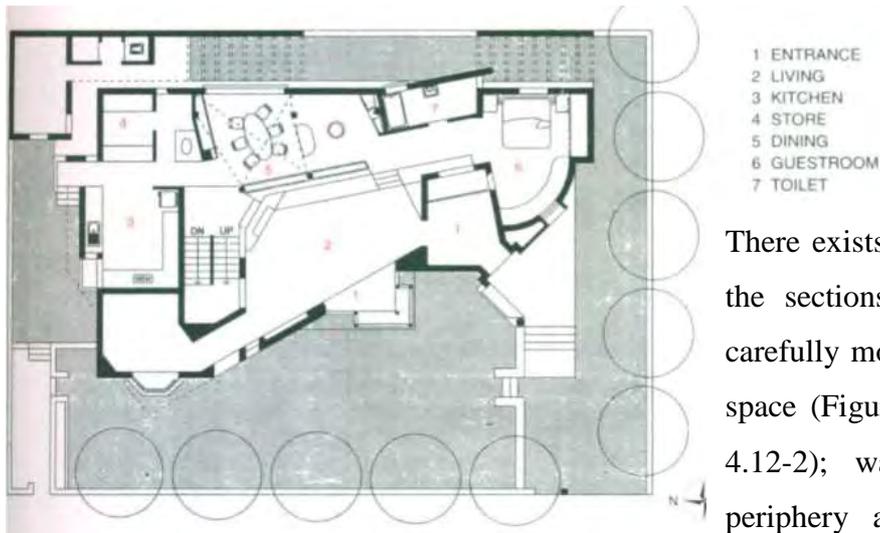
Figure. 4.12-1 illustrates the free-flowing space in plan of the Tejal house (Pandya, 1998: 59).
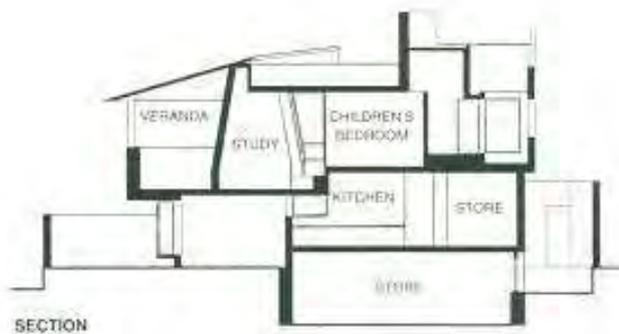
Figure. 4.12-2 illustrates the modular scale in the section of Tejal house (Pandya, 1998: 59).

Plate. 4.12-3 illustrates the interior composition of texture and colour of Tejal house (Pandya, 1998: 58).

There exists a modular scale in the sections; the volumes are carefully modulated in terms of space (Figure. 4.12-1), (Figure. 4.12-2); wall planes on the periphery are combined with free-standing columns with spaces that unfold in sequences (Pandya, 1998: 58).

Light is diffused via the use of skylights while climatic conditions are carefully thought of in this project. The western exposed concrete ceiling is textured (Plate. 4.12-3) and the composition of interior elements like furniture and finishes are comfortably incorporated in the house (Pandya, 1998: 58). Spatial barriers as storage cabinets and floating planes of furniture are utilized to translate working platforms or create visual backdrops. Light is used extensively to enrich the space.

Plate. 4.12-4 illustrates the interior effect of light through skylights and the exterior punctured roof of Tejal house (Pandya, 1998: 59-60).

While skylights filter the glare-free diffused light, apertures are seen in the wall and roof surfaces. These apertures (Plate. 4.12-4) create the effect of sunlight and shadow in the interior space (Pandya, 1998: 60). Hence, geometry not only plays an important role in creating architecture that is responsive to the environment and human comfort, but it aims to create sacredness.

Sacred geometry is a science that deals with the laws that govern the harmony of shapes, forms, structures and symmetry in the universe. Vastu Shastra is a branch of sacred geometry. Therefore whatever forms human beings design should be in harmony with space and heavenly bodies as well as earthly objects so as to attract all benefit thereof. Van Heerden (1981) wrote that each shape has a different vibration. Men's and women's bodies do not have the same shape, thus their nature and vibrations are different. In the same way, movement of heavenly bodies creates numerous vibrations. The sages termed the symphony as the universal music. Furthermore, atoms and particles move in line with the laws of symmetry and produce harmony in the atmosphere. It is believed to be the outcome of a Supreme Intelligence. The order of the universe is dependent of that intelligence. The disorganised wild development of society is the lack of understanding of the laws of sacred geometry (Van Heerden, 1981: 18).

Dixit (2000) states that yantra is a geometric representation of a dynamic nature that determines the 'movement away and towards its central points in any composite formation'. He points out that construction is incomplete without the application of yantra in design. Yantras are concentrated at a focal point in the centre. The centre of the yantra creates hierarchy in space which becomes no longer homogeneous. The 'bindu' (Plate. 4.12-5), the extensionless dot, represents the sanctum sanctorum in a temple plan or the Brahmasthan or centre of the Vastu Purusha Mandala. It is the centre from which the building spreads out horizontally and vertically. The nucleus in the horizontal plane expands from a dark interior to multiplicity of form and meaning (Dixit, 2000: 114).

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Plate. 4.12-5 illustrates the yantra representing the bindu, triangle and lotus petal (Dixit, 2000: 114).

Plate. 4.12-6 illustrates the concept of the circle representing fullness (Dixit, 2000: 115).

Plate. 4.12-7 illustrates a yantra depicting the unity of cosmic male and female (Dixit, 2000: 117).

The triangle is considered as the first symbolic geometric form that brings harmony, rhythm and balance in a chaos surrounding. An inverted triangle is the symbol of water elements with a feminine nature and kinetic dynamics. However, a normal triangle represents fire with masculine power and has static form. The circle is the next geometric form and it represents fullness, contraction and expansion of forces with no beginning and no end (Dixit, 2000: 115). The circle (Plate. 4.12-6) can also be used to illustrate fullness and harmony in space. The dot, triangle and circle can be arranged in different ways to form several yantras. Usually after the geometric yantra has been set up, it is enclosed by lotus petals that point out to the periphery signifying the emergence of energy form the centre to the outward directions. The whole structure is then enclosed in a square that represents order and perfection with gates at the four cardinal positions (Dixit, 2000: 116). Therefore, a complete yantra is achieved when it consists of a centre, a triangle, a circle, lotus petals and a square. Other depiction of the yantra is the illustration of the male and female cosmic state in a unified way (Plate. 4.12-7). This yantra is composed of square units (Dixit, 2000: 117). The next segment illustrates the common sacred qualities in religious buildings.

4.13   Sacred Aspects in Religious Buildings

Religious buildings provide shelter, comfort and beauty to their users. In addition, they differ from other types of buildings in that they have a spiritual value. However, the intention is to offer something more than the physical qualities. There exists a state of transcendence where people are transformed when they are in this kind of space. Religious buildings have certain similarities although the religious faith is different from each other. The architectural design of religious buildings has always had an impact in the environment. The St Peter's in Rome is spectacular with its monumental size and Greek-cross plan with marvellous decorations. It also has a huge dome structure; the largest after the Pantheon. The use of pure forms made it a structure that was in complete harmony (Richardson, 2004: 7).

Besides, a mosque has similar features of the church. It has a 'bimah' that is placed on a raised platform and an ark which consists of holy elements. The synagogue has a dedicated area for worshippers to wash their feet as a feature of purity before praying. Sometimes prayers are also carried out in the outdoor courtyard spaces in a mosque. Mosques are orientated to face Mecca and this is the most important design consideration. The 'qibla' wall contains a 'mihrab' which is a highly decorated niche. Geometry and patterns are extensively utilized in mosques. Mosque designs are laid on fundamental principles having the prayer place as their main function. In contrast, Buddhist temples can vary in designs. The Buddha shrine is usually facing south where the entrance is positioned. Usually the space is designed to allow some flexibility, catering for more than one faith rather than a particular one. The spaces can be for congregation or contemplation (Richardson, 2004: 7-8).

Some modern religious buildings have become iconic structures. An example is Le Corbusier's chapel of Notre-Dame-du-Haut, Ronchamp known for its break away from rational forms. The use of sprayed on concrete and the organic shapes characterised a new form of spirituality. Landmarks were apparent in mosques, for instance, the Masjid-I Tooba in Karachi had white concrete shells which was not different from the forms designed by Oscar Niemeyer of the twentieth century. Hassan Fathy was famous as a mosque architect whose works redefined the traditional architecture (Richardson, 2004: 10). However, Tadao Ando became a pioneer in religious building designs. His churches made use of natural elements like light and water. Concrete was combined

with wood to create subtle and serene harmony in spaces. Sustainability is an approach closely linked to spirituality. Rammed earth walls came into play and they are combined with underground geothermal systems to improve energy efficiency. On the other hand, ecological and aesthetic appeal was seen in Shigeru Ban's church made of cardboard tubes. Materials and structures have been continuously explored to enhance spiritual practices (Richardson, 2004: 11-12). Religious architecture is aimed to address the spiritual quality of the belief and present a physical shape. Symbols are extensively used to represent the spiritual aspects of the practice. Light is common in all religious structures. With new technologies the contemplation place has been improved to a new dynamic dimension. Colours are no longer arbitrary but are meaningful (Richardson, 2004: 17).

The Kresge Chapel (Plate. 4.13-1) in Cambridge by Eero Saarinen is conceived as an architectural landmark in the mid-twentieth century. It is located on the western side of the MIT orthogonal campus. In the form of a cylinder, the chapel has a humble size and material. It responds comfortably to a human scale in terms of its volumetric space.

Plate. 4.13-1 illustrates the exterior cylindrical form of the Kresge Chapel (Galinsky, 2010).

The building (Figure. 4.13-1) has a rectilinear attachment of the narthex. It is surrounded by moats of water that is used for contemplation purpose. The aim is to detach from the urban landscape and concentrate on the inner world within the human self (Galinsky, 2010).
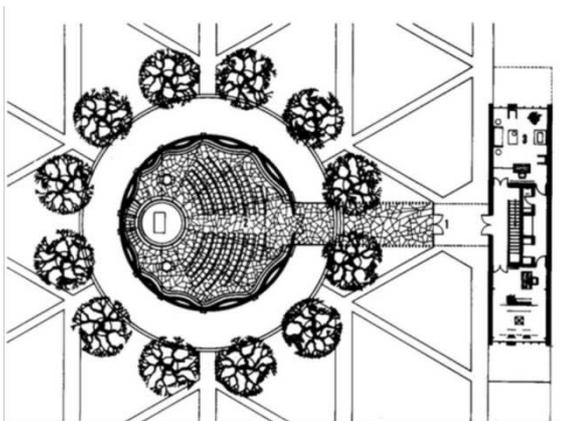
Figure. 4.13-1 illustrates the plan of the Kresge Chapel (Saarinen, 1971: 12).

Plate. 4.13-2 illustrates the interior of the Kresge Chapel (Galinsky, 2010).

Plate. 4.14-3 illustrates the façade of the narthex of the Kresge Chapel (Galinsky, 2010).

Brick is extensively used in the building. It contrasts with the adjacent auditorium building which is made of concrete and aluminium. The chapel is an interfaith complex and does not invoke any symbols representing any religion. Iconic representations are put aside. Instead, architectural language superimposes with the use of light and form (Plate. 4.13-2) leading to arouse the essence of spirituality in the place (Galinsky, 2010). The narthex is a small space with corridors that have clear and violet glass (Plate. 4.13-3). The idea was to create constrict and release experience into the spatial journey into the chapel which is thirty foot high (Galinsky, 2010).

The exterior of the building is quite bold and only hints the functions of the interior space via the transparent glazing. The experience is hidden from the outside and the journey starts as one proceeds internally. The chapel has organic undulating walls (Plate. 4.13-4) that pulsate. The warm coloured texture is rough symbolizing the imprints of past memories. The dark quality of space is designed to be comfortable and intimate. The space is enlivened by the penetration of natural light from the roof structure above the altar. A gold screen arrangement behind the altar reflects the light from above into the space. The screen is shimmered when light shines on each component at different angles. Light is also reflected from the moats of water into the interior spaces (Galinsky, 2010).

Plate. 4.13-4 illustrates the undulating walls and the light source of the Kresge Chapel (Galinsky, 2010).

Another wonder in geometrical forms and order can be found in the fractal theory. Although fractals originate from nature, they have successfully been applied in architecture.

4.14   Fractals in Nature
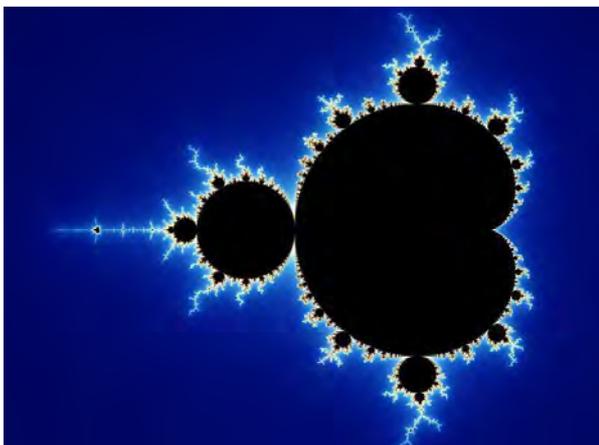
Plate. 4.14-1 illustrates Mandelbrot's example of a fractal (Mandelbrot, 2004).

Fractals (Plate. 4.14-1) are interpreted as objects that have no smooth and regular geometry. They are in repetition across various scales, characterized as self-similar and complex in nature. Fractals are set in a system of iterations. The geometrical attribute of fractals can be seen in its expression in algorithms.

The word 'fractal' was termed by Benoit Mandelbrot to describe the irregular and non-smooth nature of objects (Porter, 2008: 2-3). By observation, one may conclude that the natural form is identical in various scales – the proportions are altered by the same scale factor. Therefore the object is still the same as the whole even if one zooms into one portion of it. Similarly, the memory system is structured as fractals.

The angles of the tangents of an object are always equal at all points (Porter, 2008: 10). An example of fractal architecture is the Robie House by Frank Lloyd Wright (Plate. 4.14-2). There exists a repetition and variation of forms with details done at a lower scale.

Plate. 4.14-2 illustrates the fractal system as expressed in architecture by Frank Lloyd Wright in the Robie House (Rogers, 1998).

The sweeping horizontal planes and cantilevered roofs merge out beyond the walls while lightness and transparency are achieved with glazed windows and doors. Elements are repeated in various scales yet are fractals (Porter, 2008: 30). Swami Paramananda (1999) explains what Hermes Trismegistus meant when the latter said 'as above, so below'. He was referring to the nature of the infinite and finite. For instance, the seed as one sees is nothing but has a potential to eventually become a tree and the latter is therefore a transformed tree. In a similar way, man is the replica of the Universe that has an egg shape representing the human body which resembles an egg when an aura is drawn. Mandelbrot states that the whole universe is reflected in all the particles of existence. William Blake concluded after his deep observation that the same pattern repeats itself in matter (Swami Paramananda, 1999: 7). The pattern can be seen in any part of a leaf. Another example will be snowflakes. The fractal theory can be noticed in the image of a hologram where a part of a holographic image reflects the whole of the image. For instance, someone takes a photo of his house on a holographic plate and illuminate part of it, the entire image of the house will be seen (Swami Paramananda, 1999: 8). As observed, fractal theory therefore relates to scale, proportion and order in design. These aspects are analysed in-depth in the following section.

4.15 Proportions and Order in the Built Form

Proportion is of a mathematical order and is represented through geometry. Proportions led to create a unity of expression when artists created buildings and statues that were admired for ages. Order united forms of nature so that they were each in harmony. Usually lines, angles and surfaces are used to form those geometries. Proportions

represent elegance and beauty when elements such as circles, triangles and the square are employed as simple forms of nature (Colman, 1971: 1-3).

Architecture is a substance that sets the mood – it influences the physical mechanics and builds on soul relationships. Human contacts upgrade that relationship which is also governed by shape. For example, a circular table is effective in bringing two unknown people into a group discussion while a rectangular table of six seats or more can create isolated conversations as well. With its central focal point, the circle is used to bring communal engagement. It is where the spiritual forces merge. In contrast, right angled forms have restricted movements from a functional viewpoint. Geometry is based on the idea of proportion. The human body is an instrument of proportions that are in harmony in a similar way as those in nature. However, at right angles proportions relate to balances that initiate creative activity or allow movement to rest. In a sequence, proportions hint at a progressive development. Closely linked, are cosmic or spiritual essence of the body in relation to proportions (Day, 2004: 108-109).

Sacred architecture is actually that of proportion. Cosmic architecture is associated with a variety of forms; it is evident in Islamic works. The divine order requires geometric expression to relate to its earth nature (Day, 2004: 110). The coexistence of architectural elements, proportions and balance display how space is manipulated with human movement. Day (2002) explains that proportions reflect an ordered system. Order is defined by an organisation of thoughts while balance allows that order to occur. The correlation of the universe, cosmic and environment cause soul experiences in places. Architectural forms are governed by energy forces that give form to the landscape (Day, 2002: 128-129).

Spaces are regions where life is bound to happen whereas forms are objects, usually of a self-contained order. Forms create enclosures to define space and enliven it, but they occupy the space within (Day, 2002: 133). According to Vitruvius, orders are fundamental elements that make beautiful architecture that is based on proportion (Hearn, 2003: 161). Hence, harmony can be achieved if the appropriate proportions and orders are followed in a design. He was of the opinion that these proportions were established by nature. Nature has been remarkable in designing the human body which is 'proportioned to the frame as a whole'. The same principles apply to the various members that consist a building. They need to be symmetrical in relation to the whole.

Examples are the temples of gods – they last eternally (Hearn, 2003: 161). The sense of order can also be traced from the architecture of the human body.

4.16   Man – The City of Nine Gates

Man is in fact a replica of the cosmos in miniature and as a result, the body is considered as a wonder, even when observing its molecular structure and cellular composition. In the scriptures, man has always been termed as the image of God. Being a tiny universe man is part and parcel of the Infinite Universe and God as the whole. After William Blake stated, 'see eternity in a grain of sand' and the system of fractals as pronounced by Benoit Mandelbrot, it is no doubt that man is indeed a fractal reproduction of the Great Universe (Swami Paramananda, 1999: 3). Swami Paramananda (1999) refers to man as a point in the universe; the latter is also the reflection of that point. In this way man reflects God and the Universe but also reflects 'the Creator and the creation since they are two aspects of one reality' (Swami Paramananda, 1999: 4). Man is also referred to as the city of nine gates. An architectural depiction may be a solid form with apertures. Swami Paramananda (1999) wrote that life is a university where each birth represents a level. Man, God and the Universe are interrelated and must be deeply studied to understand the aim of life. The study of one's body, mind and soul will guide to the revelation of the Universal creation and God. Hidden signs and symbols will then surface. One's body is like a book that upon reading will allow the reader to have a glimpse of the nature of life. In that regard, the body has a scientific meaning apart from a rational connotation (Swami Paramananda, 1999: 21-22).

The Hindu scripture of the Ramayana depicts Ravan as a demon with ten heads; he was dominating the whole world. The number ten represents the world of matter; hence Ravan was the most materialistic individual in his time of existence. The head consists of seven apertures: the two eyes, the two nasal openings, the two ears and the mouth. The number seven signifies 'complete and perfect evolution' in the science of spiritual numerology. Moreover, the seventh body which is the Nirvanic body and ultimate layer of the being is attained when the potential energy existing at the lowest chakra has reached the seventh centre through the spinal cord. It represents the union of the dual poles of energy in man. Swami Paramananda (1999) states that, when one attains the

seventh body, perfection is reached – it is a quality of God. The two lower apertures in man are the excretion and sexual organs. Therefore, man is referred to as the city of nine gates which has a scientific and a profound mystical meaning (Swami Paramananda, 1999: 22-23).

The body is subdivided into two parts: the right and the left, each representing the two extremes of life. Being on the right channel, the right eye is said to be a conductor of hot current while the left eye corresponds to cold current flows. There needs to be a balance in temperature and a middle path is required. The middle path is the spinal energy symbolized as a serpent. The body is also representative of the cross. It is symbolic of the Jesus cross and represents the suffering endured. But transcendence can lead to overcome the sorrows and a complete surrender to God is required. More deeply, the left hand represents the past and the right hand means the future. They symbolize the dualities of life (Swami Paramananda, 1999: 24).

The cross also depicts a meeting point of man and God. Usually it is referred to as the end to the suffering endured by devotees when they experience the state of God. The mystical aspect is that Jesus died on the cross and Christ was born. The cross is associated with the number four representing the mental body that reincarnates. The number four represents the cardinal points. South is at the lowest point, the feet and the north is the highest position, the head. In meditation, the devotee faces the north since the Earth's magnetic field is stronger at the northern pole. Man's evolution begins from the southern pole, the lowest and move higher to the North. The East and West are horizontal; the East represents religion, yoga, poetry and the heart whereas the West signifies the mind, logic, aggressiveness and materialism. However these two polarities are two aspects of one reality (Swami Paramananda, 1999: 27-28).

The human aura has the form of an egg and the magnetic field around the body has a similar shape. Man is a miniature universe – the latter has an egg-like shape. The human body if stretched apart takes the form of a five-angled star. Man is conceived as a star that needs to explode to attain its original position (Swami Paramananda, 1999: 29). In the holy scripture of the Bhagavad Gita, the city of nine gates consisted of a prime minister, ministers and other attendants. The body is termed as the nine gates – its apertures. The mind is regarded as the unevolved state of the prime minister. The senses and other organs represent the ministers and attendants. The body is a laboratory of

duality at all levels; male-female, positive-negative and so on. The right hand represents the male and the left the female. The ten steps in spirituality relate to matter and are represented by the ten fingers. The five fingers symbolize the five elements air, earth, ether, fire and water. During meditation, both palms are joined together to create a vibration of energy (Swami Paramananda, 1999: 30-31). Hence, the human body conceals a lot of mystery and its study is important to understand the nature of the self. The human body is closely associated with numbers. A deeper review of numerology is carried out in the next section.

4.17   Numerology

In the spiritual science, each number conceals a mystical truth. By permuting and combining each number, a variety of infinite numbers is born (Swami Paramananda, 2000: 139). The number zero, the nothing, represents the infinite light of chaos. It symbolises pure space and pure consciousness. It is referred to as Buddha's Nirvana (Knight, 1991: 32), (Swami Paramananda, 2000: 139). The number one represents the Supreme Energy, the Lord who is omnipotent, omnipresent and omniscient (Swami Paramananda, 2000: 139). Number two represents duality; after the beginning which was solely the existence of God. The majestic essence of God manifested and became the ego, the 'I'. The Universal sound that was erupted then pierced darkness and light shone through. Hence there was a duality of darkness and light. Then God created human beings, Adam and Eve. It depicts also that man is incomplete and has to unite the dual facets in him to realise oneness with existence. In depiction it is the Yin and the Yang, God and the Devil, masculine and feminine (Knight, 1991: 33), (Swami Paramananda, 2000: 74). The number three is the trinity: it is the union of three aspects of one. It is symbolic of the triangle that points to the heavens. In Christianity, it symbolises the Father, the Son and the Holy Spirit, whereas in Hinduism it depicts Brahma - the creator, Vishnu - the Preserver and Shiva - the annihilator (Knight, 1991: 33), (Swami Paramananda, 2000: 29-30). Number four depicts multiplicity, in the pyramid; its base suggests the gross world. Spiritually, it represents the mind or the mental body of the seven bodies of man. Upon reaching that state in the fourth layer, one begins to manifest 'powers of teleportation, thought reading, distant healing and seeing' (Knight, 1991: 33), (Swami Paramananda, 2000: 36). Number five represents

the law of the lower worlds; it is the number of Man. It depicts the 'I' which is the middle of the Absolute above and the Absolute below –the middle path. Number five stands for the five elements in nature: earth, ether, air, fire and water (Knight, 1991: 33), (Swami Paramananda, 2000: 13).

The number six represents Vishnu as the sixth divinity. He represents the soul which is then at a complete state. Years, months, days, hours, minutes and seconds are associated with numbers. For instance the twenty-four hours in a day is mystical (Knight, 1991: 34), (Swami Paramananda, 2000: 140). Victory, magnitude, delight and safety are the attributes of the number seven. It represents the trust as depicted in the 'Oath of Seven'. Symbolically, God rested on the seventh day and it means sacredness or mystery. It also depicts the seven bodies in man: the physical, etheric, astral, mentral, spiritual, cosmic and nirvanic bodies (Knight, 1991: 34), (Swami Paramananda, 2000: 13). Number eight is defined as the awareness of the heavenly rhythms. It is the vertical sign of Infinity. In Hinduism, Krishna is the eighth incarnation of Lord Vishnu and is incarnated as the lover and player. Even in the womb in the eighth month, the baby is active and responsive. The number eight is formed by merging two circles – symbolising completeness (Knight, 1991: 34), (Swami Paramananda, 2000: 49). Nine is symbolic for birth and enlightenment. Buddha was the ninth incarnation of Vishnu. A child is ready to explore the world after nine months in the womb. Enlightenment is therefore a second birth; the first being that of the physical body (Swami Paramananda, 2000: 50). The number ten represents the Kingdom of God on Earth (Knight, 1991: 35). It represents the tenth incarnation of Vishnu and embodies the previous ones. Initially it started as a fish in water and evolved till its tenth stage. Number ten symbolises that the creation is complete. Man is the tenth and last of creations (Swami Paramananda, 2000: 50).

4.18   Conclusion

The human behaviour and perceptions are critical in enhancing the visual experience in space. Colours affect the mind and emotions of the human body in creating a harmonious environment. The sense of belonging is reflected by an identity of the human race, driven by a poetic essence that is achieved by the application of the genius loci when the elements of place are brought in coexistence with man. The latter

becomes familiar with the mental images of place and therefore he is able to orientate. The visual appeal of a space helps in establishing the spirit of place. The senses are activated when the individual experiences the character of a space. Hence, human consciousness is a definite outcome of architecture. Spirituality is important in realising the seven layers of the human body. With an increased consciousness, man can decipher his aims and desires in the aura of silence and light. Spiritual architecture is therefore mystical and a different approach is adopted in architecture. Cosmic architecture has a sense of proportion and order. The main aim is to generate the flow of cosmic energy in the environment. The design is usually influenced by culture and religion. The planning principles of Vastu Shastra are applied to create a holistic environment. In addition, appropriate positioning of functions allows the environment to be in harmony. Geometry and order are essential in providing sensible designs. Symmetry is a common aspect of sacred architecture while sacred geometry governs the harmony of shapes, forms, structures and symmetry. Religious architecture seeks to embrace the spiritual quality of a belief and present a physical shape through symbolic meanings. Symbolism is associated with numerology which is sourced from the human body. Each number conceals a mystical truth and has different in meaning in various faiths. Architecture is influenced by the composition of natural forms and elements using symmetry, proportions and order. The next chapter illustrates and critically analyses architectural qualities applied in the design of buildings that accommodate spiritual practices in international cases.

CHAPTER 5

**ANALYSIS OF ARCHITECTURAL QUALITIES IN EXISTING
SPIRITUAL CENTRES**

5.1 Introduction

This chapter deals with a critical analysis of buildings that have spiritual qualities. The objective is to find out the influential factors of these elements in architecture. Three buildings have been selected and will be thoroughly analysed in this section and compared with one another according to the common aspects of sacred architecture. The buildings have been chosen from three different continents so that an adequate comparison can be made in terms of context, architectural style, environmental conditions, symbolic aspects, spatial organisation and socio-cultural attributes. The buildings will firstly be analysed in their context with background and historical information about the centres and their associated disciplines.

5.2 Site and Context

Plate. 5.2-1 illustrates the Osho International Meditation Centre in Pune - the pyramidal buildings are set in a natural landscape (Famous India, 2010).

The Osho International Meditation Centre (OIMC) located in the city of Pune in India is a campus extended over forty acre of a tropical oasis in nature. The ashram (Plate. 5.2-1) is described as a high class life with thousands of visitors annually. The centre has become a prime attraction for visitors who are interested in the preaching and ideologies of Osho (Famous India, 2010).

Osho was an Indian mystic and spiritual master in the late twentieth century. He had garnered an international following where his emphasis was on the importance of meditation. His teachings had a huge impact in the West. Osho's teachings brought a change after his death in 1990 in his home country of India where his work was initially rejected. The transformation led to change the future generations by liberating the believers from the chaos of religions and conformism. The OIMC is one of the largest growing spiritual centres in the world with an attraction of two hundred thousand visitors per annum. The site is accessed by private vehicles or cabs. It is fifty-five kilometres away from the airport, forty-five kilometres from the railway station and

twenty-five kilometres away from the Ganges. Therefore the site is reachable from all directions. The centre is also a meeting place for friends on a global platform. Money is not utilized inside the precinct, instead vouchers are used (Rudra, 2010).

Plate. 5.2-2 illustrates the practitioners conducting yoga exercises (Famous India, 2010).

Plate. 5.2-3 illustrates a seeker conducting meditation in the silent open-air green nature (Famous India, 2010).

The resort for meditation and yoga (Plate. 5.2-2) offers various techniques to be free of stress and strain of worldly life. The dress code is maroon robes during daytime activities and whites robes are used for evening meditations. Wearing of the institution's robes is essential. The ashram is highly advanced in technology with access to email, fax and telephones (Osho Ashram, 2010). Hotel accommodation is merely fifteen minutes away from the resort on foot. The resort also promotes a wellness programme (Rudra, 2010). One of the major teachings of Osho is silence that can be achieved through meditation. Man's speech, actions and dialogues are related to observe that silence (Plate. 5.2-3). The building was designed to express this principle of silence. Hence, one can see that the materials used are simple without ornamentation and merge with an existing natural landscape (Rudra, 2010).

Plate. 5.2-4 illustrates an aerial view to the building amidst a natural landscape (Insight Meditation Society, 2010).

Plate. 5.2-5 illustrates participants at the family retreat (Insight Meditation Society, 2010).

Furthermore, the Retreat Centre of Insight Meditation Society (Plate. 5.2-4) in England has been active since three decades. The spiritual practice is essentially focused on meditation based on the teachings of Buddha. The courses offered are designed for new and experienced practitioners lasting over a period of three months. Retreats are organised for about ten days and are taught by teachers of the society. Buddha's teachings are also propagated in the process. The practices include sitting and walking meditation. The society has become one of the most respected centres for learning and deep meditation practice. The Retreat Centre is a refuge to seekers of free mind and heart (Insight Meditation Society, 2010).

Various types of retreat are offered for different age groups, for example, young adults' retreat for the age of eighteen till thirty-two, women's retreat and retreat designed for families (Plate. 5.2-5). The retreats are aimed to integrate meditation as part of daily activities. About twenty-three hundred people participate annually in the retreat sessions (Insight Meditation Society, 2010). Moreover, the first Baha'i House of Worship in South America was built in Santiago in Chile. The building was designed by Canadian architect Siamak Hariri in 2007 (Lord Whimsy, 2009). It is located on the Andrean foothills (Plate. 5.2-6) with a panoramic view to the surrounding mountains in three directions. The hundred and ten hectare site in the rural area can be accessed by car from the centre of Santiago (Baha'i International Community, 2005). The building can accommodate six hundred people. It is about thirty metres wide and thirty metres high, with an area of twenty-one thousand square feet (Baha'i of Chile, 2010). The concept

was to create a glowing temple of light that would be inviting to all faiths (Baha'i International Community, 2005).

The Baha'i Faith is considered as the youngest emerging world's independent religion. Its founder, Baha'ullah (1817-1892), is regarded as a recent Messenger of God with the likes of Buddha, Krishna, Zoraster, Jesus and Muhammad (Baha'i, 2010). The message of Baha'ullah is that 'humanity is a single race and the day has come for its unification in one global society'. The society sees humanity as a global family and earth as one homeland.

Plate. 5.2-6 illustrates the Baha'i House of Worship in its context, on a foothill with mountainous background (Baha'i of Chile, 2010).

The teachings of Baha'ullah depicts that there is one God whose revelations are the civilizing force of this universe. Divine Messengers bring spiritual and moral maturity to the human race. The purpose of life for Baha'is is to know and love God to progress spiritually. Meditation and prayer are considered as the prime tools for spiritual development (Baha'i, 2010).

The next section deals with the functional and spatial requirements of these spiritual centres and how the various activities are accommodated on site.

5.3   Spatial Organisation and Functions

Plate. 5.3-1 illustrates martial arts session and a sufi dancing in the open space (Famous India, 2010).

The prime focus of the Osho International Meditation Resort is not only meditation but also natural creativity that is conducted by followers through different workshops located in the pyramid-like building. The inmates' homes are designed to emerge out as pyramids from the green land (Rudra, 2010).

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Plate. 5.3-2 illustrates painting and sculpting (Famous India, 2010).

Plate. 5.3-3 illustrates café area overlooking the pool (Famous India, 2010).

A residential block that serves as a guest house has sixty rooms. An information plaza is where all information about program courses can be inquired. The Osho auditorium is where the major meditation programs are conducted. The Osho Multiversity is a place where various forms of art can be learnt, for example, martial arts, dancing (Plate. 5.3-1), painting and sculpting (Plate. 5.3-2). The teaching staff comprises doctors, meditation trainers and therapists. The Mirdad Pyramid is made of black marble from the exterior (Rudra, 2010). It contains large seminar facilities and workshops, overlooking the Zen garden spanning twelve acre. Amongst other activities are a tennis court, swimming pool and bistro. A creative 'carvan' is where pottery, sculptures and other arts are practised.

There is a café (Plate. 5.3-3) that has most types of cuisines. A mini mall called the galleria caters for shopping activities. An inbuilt medical centre is in place with advanced technologies. The Zen garden has been designed to allow people to sit, meditate and experience the renunciation within (Rudra, 2010). On the other hand, the Retreat Centre in England provides accommodation for men and women separately. Camping is prohibited on site. Over the years, an environment has been established to deepen the qualities of tranquillity, kindness and understanding. The culture at the retreat advocates silence and simplicity in an aim to step back from the busy and complex material life. All electronics have to be turned off during the stay so that the individual benefits most from the sessions. The walls are thin in the complex with

everyone living as a close community. Hence, silence is essential to ensure that other practitioners are not disturbed (Insight Meditation Society, 2010).
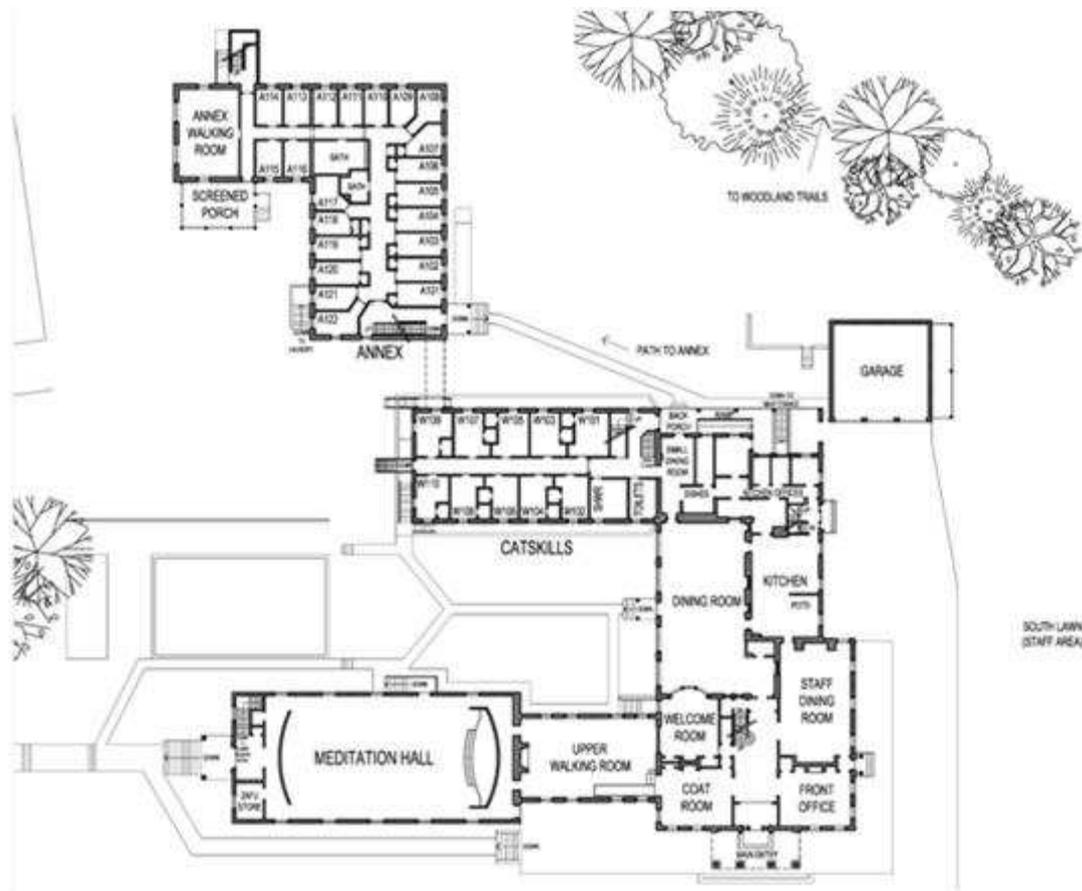
Figure. 5.3-1 illustrates the ground floor plan of the Retreat Centre (Insight Meditation Society, 2010).

The building has a gabled roof. It has a rectangular plan. The layout has an integrated composition of forms. The facades have rhythm of articulation. The materials used are face brick mainly and roof tiling. The ground floor (Figure. 5.3-1) consists of communal spaces such as a meditation hall and a dining hall. Staff rooms and offices are located at the same level. Accommodation rooms are located mostly on the first floor (Figure. 3.3-2) (Insight Meditation Society, 2010).

Figure. 5.3-2 illustrates the first floor plan of the Retreat Centre (Insight Meditation Society, 2010).

However, in the Baha'i temple, the main entrance is a wonderful experience as one sees the lightened building with the backdrop of the towering rock formations. Water elements reflect and refract the glowing structure. Each entrance (Plate. 5.3-4) is carved into the base of the structure to form nine alcoves. The alcoves are then reduced to a human scale with comfortable proportions (Baha'i of Chile, 2010).

Plate. 5.3-4 illustrates the model of the Baha'i centre illuminated with its wings forming alcoves marking entrances (Lord Whimsy, 2009).

The spatial areas are thus carved to create an inviting optical identity that merges with the surrounding landscape. However, the compression of volumetric space at the periphery introduces privacy for those who wish to experience that space in peace. The interior rooms are very tranquil and located in between the alabaster wings and the interior curved wood surfaces – creating spaces of pure solitude with soft light coming through and views looking out to the gardens beyond (Baha'i of Chile, 2010).

The temple has spaces for communal and private meditation and prayer. Two distinct areas are designed for this purpose. A six hundred seating area is provided for mass congregation while nine intimate alcoves are nestled between the wings under a mezzanine that runs along the temple perimeter (Plate. 5.3-5). It was observed from a previous House of Worship that worshippers wanted to be at the periphery; hence this idea was adopted in this scheme (Baha'i International Community, 2005).

Plate. 5.3-5 illustrates the interior spaces – the communal central space and private spaces on the perimeter (Baha'i of Chile, 2010).

Now the worshippers are able to gaze out but also inside, towards the apex of the dome where the Greatest Name – calligraphy of the name of Baha'ullah - is displayed (Baha'i International Community, 2005). The building is referred to as a Radiant Temple forming architecture for meditation. It deals with the need for a 'mind-freeing, heart-freeing, sense of comfort, safety and inner peace'. For the architect, it was a task to 'transcend the conventional tenets of morphological style'. Therefore, imagery was conceived to serve the high purpose intended by the building – the latter is persuasive and emblematic of luminosity and ascension. The building is termed to be a post-architectural entity as it creates a majestic droplet of light upon entering. Its enclosure is subtle in that the hearts are lifted spiritually and start to manifest when such a beauty is experienced (Baha'i of Chile, 2010). Design considerations are further analysed in the next section together with the study of environmental aspects of each centre.

5.4   Architectural Style and Environmental Aspects

The Osho International Meditation Resort has a contemporary architectural style. It has been designed to respond to the context and the environmental conditions on site. Its pyramid-like shaped structure is compelling. It reveals the mysticism beyond what is

seen to the human eye. The pyramid is a geometrical shape with proportion and order. But the design signifies hidden truths and symbols. Such a shape is also appropriate for climate; especially for rainwater flow.

Plate. 5.4-1 illustrates the natural landscaped surrounds (Famous India, 2010).

Plate. 5.4-2 illustrates the interior space of the meditation hall of the pyramidal structure (Famous India, 2010).

Plate. 5.4-3 illustrates a seeker in deep meditation in an outdoor green landscape (Insight Meditation Society, 2010).

The Osho Teerth, also known as Nulla Park, has a garden (Plate. 5.4-1) expanding five hectares. It is designed as the elegant style of Japanese Zen garden. The park has a landscape architecture that comprises swimming lagoon, rock gardens, decorated wooden pathways and artificial waterfalls that enhance the spiritual environment. The green space is accessible to the public early in the morning and late afternoon. It is otherwise used to conduct spiritual practices (Osho Ashram, 2010). Architecturally, the design is said to be extremely Zen with the use of minimalist clean lines. The staffs are attentive and welcoming in a quiet environment. As a result, it feels that the space is actually empty. The meditation hall (Plate. 5.4-2) is twenty-eight metres high with a sound proof and air conditioned system. Lighting is in a multi-dimensional arrangement. The rooms are designed with simplicity but of high quality. In winter, it is freezing inside with air conditioning system. There are no televisions or phones on site so that the focus that began in the meditation hall is continued in the rooms as well (Rudra, 2010).

In contrast, the self-retreat is carried out for personal growth at the Retreat Centre. During that period, the individual meditates in silence and observes certain norms to allow a continuity of the practice. A teacher is also at hand to guide the seeker. Outdoor practices (Plate. 5.4-3) are carried out in a natural landscape around the centre. The facilities are in need of an upgrade that will focus to explore the use of environmentally friendly designs and resources (Insight Meditation Society, 2010).

On the other hand, the design (Plate. 5.4-4) of the Baha'i temple is very modern and a futuristic approach can be seen in terms of spiritual architecture. It consists of translucent panels of Spanish alabaster and clad in forged glass. The aim was to achieve transparency by allowing penetration of light into the building (Lord Whimsy, 2009). The outcome shows that sunlight is filtered during the day while at night the temple emits a warm glow of interior light (Baha'i International Community, 2005).

Plate. 5.4-4 illustrates the modern approach to temple design in spiritual architecture – use of glass and alabaster (Baha'i of Chile, 2010).

The Baha'i centre is considered as the Temple of Light. Light, being an indispensable element connecting the forces of the universe, has been employed in a technological way. The translucent stone and new glass technology employed manifest the physiological and spiritual radiance of natural light in the architecture (Baha'i of Chile, 2010). The inspiration of the form came from observing natural objects in the environment (Baha'i International Community, 2005).

The concept was to create a living temple that will glow with serenity in exploring the phenomena of light and shadow in the spaces. With the Andes as a background, the Baha'i Temple is the representation of pure luminescence. The temple reveals a place that embodies all cultures and languages interwoven in light. The structure forms are articulated inside and outside. The outer form is defined by nine torque wings that enfold the space. The wings are made up of two skins of translucent gridded alabaster; one on the inside and one on the outside. The in-between element is a curved steel structure (Baha'i of Chile, 2010).

Plate. 5.4-5 illustrates a cross section of the building depicting the spatial and structural composition (Baha'i of Chile, 2010).

The inner form is finely articulated. It is made up of wood with a delicate and ornamental surface that offers texture, warmth and is responsive to the cultural context of the area. The sun rays are screened and allow diffracted light with soft pulsating shadows. The temple is made of nine identical wings that enfold in an organic shape and are twisted to form a light nest-like structure (Plate. 5.4-5) with a dome atop the raised base. The building has a radiating garden that consists of nine reflecting lily pools and nine prayer gardens (Baha'i of Chile, 2010).

The site is arid and semi-desert. It is an unspoiled land with natural vegetation. An access road was constructed and landscaping was required with additional tree planting (Baha'i International Community, 2005). The building is securely footed to resist earthquakes. It is balanced on nine piers on which the nine wings rest and enfolds the inner spaces (Baha'i of Chile, 2010). The structure responds to its context and was designed to accommodate ground movement and flex under lateral loads (Baha'i International Community, 2005).

Pathways leading to the gardens are oblique and are described as the 'veins of a lily leaf'. The nine prayer gardens serve the nine alcoves. Three of the gardens are lily ponds and are green in colour rather than blue. The ponds are intended to reflect the temple structure – hence the light as well. The gardens consist of indigenous species of Chile (Baha'i International Community, 2005). The design of spiritual buildings involves the application of symbolism and aesthetic qualities that help in creating a serene environment where people feel a sense of belonging.

5.5   Symbolism, Aesthetics and Spiritual Attributes

The pyramid of the Osho auditorium has been a long term construction that finally responds to the needs of the users. The space is resounded with silence of the people conducting the practice daily. Solid stones were excavated in mass from the site. The foundation structure is mainly made of tons of steel and cement. The project that covers twenty-five thousand square feet has a pyramid meditation hall that is led through by an entrance flanked by thirty metre expanse of water with a central walkway (Plate. 5.5-1).

Plate. 5.5-1 illustrates the main entrance and exterior space of the pyramidal structure set alongside a water lake (Famous India, 2010).

Water signifies purity and is symbolic of the cleansing process before entering the holy space. The pyramid shape is symbolic as its peak represents oneness while the base illustrates the multiplicity of life. The journey to God narrows itself when one seeks the inner self. It also symbolizes the flow of positive energy from the cosmos (Osho, 2010).

In Hindu religion, temples are designed to have a pointed peak; sometimes rites are even carried to initiate the flow of energy from that vertical point. The ashram has an immaculate beauty and is of a high quality design. Grey colours are used on the outside and they are in contrast to brighter colours that emanate positive energies. Yet, the greenery of the surrounding landscape complements the aesthetic quality of the spaces.

Beauty has been created from what was initially a polluted wasteland area prior to construction, with an existing river running on site (Rudra, 2010).

Conversely, the Retreat Centre has a meditation hall (Plate. 5.5-2) which has a simple design. It has openings on the sides of the longer elevations. The interior has a stage on a plinth. It is the resting place of the shrine of Buddha is. It is not an ornamented space. Meditation requires a space with fewer distractions. Colours are soft with white paint used as soft finish.

Plate. 5.5-2 illustrates the interior view to the meditation hall (Insight Meditation Society, 2010).

The flooring is made of laminated timber. Cushions are used for seating in comfort. But also this flexible setting allows the opportunity for yoga exercises to take place. The main dining area (Plate. 5.5-3) is a place where individuals interact socially.

Experiences can be shared. However, silence is still maintained to a certain degree to have a continuous flow of the energy gained by practising the yoga exercises. The room looks out to the exterior green landscape marked by natural vegetation on site. Eating becomes part of the contemplation process (Insight Meditation Society, 2010).

Plate. 5.5-3 illustrates the main dining area (Insight Meditation Society, 2010).

The shape (Plate. 5.5-4) of the Baha'i Temple represents an architecture that has been formed by nature. The interior structure is a lattice structure of steel supporting the inside of the upper dome (Lord Whimsy, 2009).
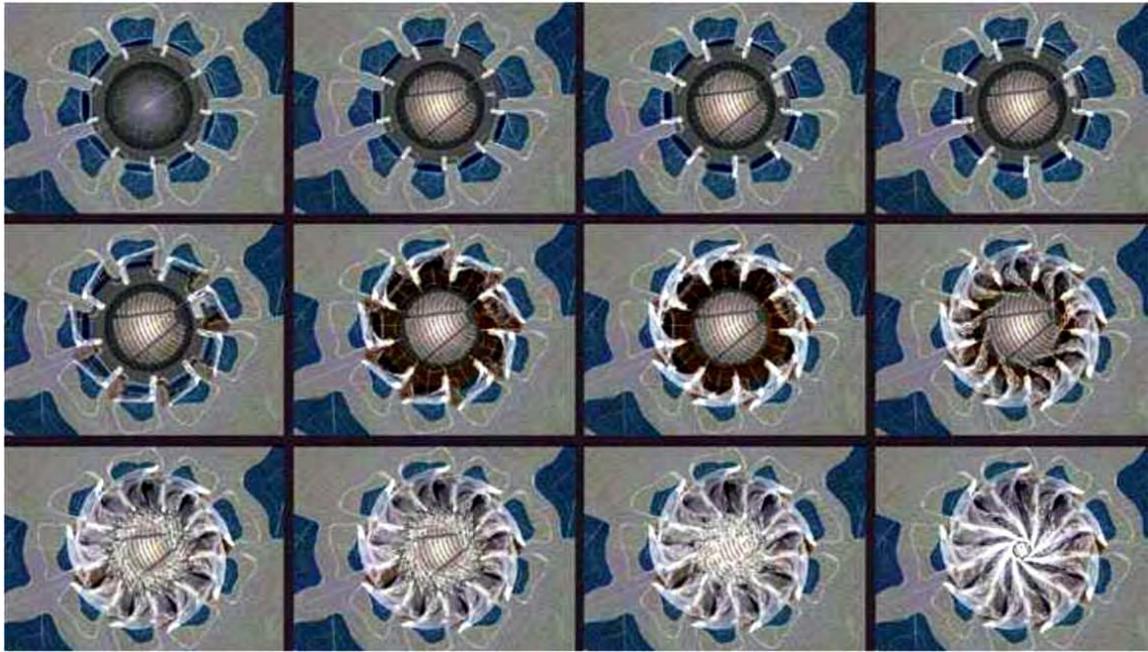
Plate. 5.5-4 illustrates the layers as the temple enfolds itself (Baha'i of Chile, 2010).

The interior spaces have a white texture throughout. It is meant to induce purity and radiance of the structure and space. The delicacy and clarity of the light quality are the result of the use of wood stained in a light silvery white. The order of the composition is effectively executed at the centre top where the nest wings rest. The design is very subtle; the temple touches the ground lightly making its base virtually transparent while the wings seemingly float in space. The temple appears to move despite its stillness. The symbolic aspects of the solid base and narrow top are similar in most spiritual buildings: they point towards the heavens.

Plate. 5.5-5 illustrates the monumentality and symmetrical order of the temple of the wings rising to a vortex (Baha'i of Chile, 2010).

The building (Plate. 5.5-5) expresses its monumentality with uniqueness where spaces are intimate. Symbolically, the nine wings enclose the building like a bird just after alighting when it folds its wings about itself. The wings are seemingly walls and form the building's entrances. They torque gently like a spiral so that the top end points touch to form a vortex that encircle 'The Greatest Name' (Baha'i of Chile, 2010).

Plate. 5.5-6 illustrates an aerial view showing the dome structure and light illuminating the interior space with entrances on nine sides (Baha'i of Chile, 2010).

Verticality is expressed as all movements lead upwards. It advocates the state of meditation. The private alcoves are designed for meditation practices. The building is therefore, a hovering light as Hariri describes, and an architectural mist. It addresses a spiritual meaning of a blossoming fruit and the human heart (Baha'i of Chile, 2010). The nine-sided dome structure (Plate. 5.5-6) with nine entrances refers symbolically to the welcoming of people from all directions of the earth to embark on the journey of prayer and meditation (Baha'i International Community, 2005). Proportion is of high importance in spiritual architecture. The final form (Plate. 5.5-7) was conformed to classical proportions by making the structure as almost as wide as it is high. With the design parameters set of the inclusion of a dome and nine sides, symmetry was applied to the nine wings of the same shape. The sacred building is simple and understated, yet it expresses a complexity. Another symbolic meaning lies in the slope of entrance approaches.

Plate. 5.5-7 illustrates the classical proportion and order expressed in putting the structure together (Baha'i of Chile, 2010).

The effect is that the surrounding area around the temple resembles arms that enfold it (Baha'i International Community, 2005). These centres operate with the arrival and usage by people who are interested to embrace spirituality. Hence they also become hubs for socio-cultural engagement.

5.6   Socio-Cultural Aspects

The Osho meditation centre is an ideal place for spiritual development, rejuvenation and relaxation. It frees the individual from the daily tensions of life. There are visitors from around hundred countries in the world staying at the ashram each with a different objective. The various activities provided allow people to engage socially and culturally but above all spiritually (Osho Ashram, 2010).

Osho, who left the world in 1990, believed that awareness, love, meditation and laughter are the main key values in life to which 'enlightenment was a normal state of being' (Osho Ashram, 2010). Meditation is a state of no action, no thought and no emotion but just to be and not do anything. The centre has been designed to cater the new kind of meditation techniques, called the active meditation techniques, devised by Osho.

Plate. 5.6-1 illustrates Osho's Samadhi – use of high quality materials of glass and marble (Famous India,

Plate. 5.6-2 illustrates devotees around Osho's Samadhi in meditation (Famous India, 2010).

Socially the institution is said to be the world's largest in carrying out meditation and personal development activities. The subjects include body work and awareness, creativity, esoteric sciences, meditation and transformative work as visioned by Osho. Meditation camps allow a mass spiritual development. Osho's samadhi (last resting place) is located amidst a surround of glass and marble (Plate. 5.6-1). Devotees practise meditation around it four times a day (Plate. 5.6-2). The place is filled with vibration transmitted to followers during meditation (Osho Ashram, 2010). An eatery is situated alongside a magnificent Olympic sized pool. It is a place of relaxation and social interaction. Some individuals even conduct spiritual activities by the poolside.

In addition, restaurants and discos are the main night life in the centre itself. Spirituality does not restrict enjoyment at all, but instead allows man to become aware when performing activities. It is referred to as Zorba the Buddha. It means that man can become the Buddha but not the contrary as the Buddha is the holiness itself. Here, Osho advocates freedom which is precious and of highest value to which there is nothing more supreme (Osho Ashram, 2010). The visitors are not only devotees but also are young people seeking something spiritual in life. These people are interested to experience and are open-minded. One can notice that they are innocent and fresh for this journey. The mix of Westerners and Asians creates a friendly atmosphere. The vibe is seen from the locals of the lively city of Pune, be it the rickshaw drivers or the internet shop owners (Rudra, 2010).

In comparison to Osho's disciplines, ethical conduct, renunciation and service form part of the Retreat Centre's practice. The cultural values shared are simplicity, making use of resources wisely, respecting the environment and practising the principle of moderation. Diversity is necessary and is seen by expanding the dharma to many people. The society emphasizes on bringing harmony to the community. The organization runs in clarity with its structure seen as transparent, considerate and efficient in terms of participation and management. In order to meet the needs of the community, the society has provided an increasing number of courses in various categories. It therefore enlarges the spectrum by enhancing the quality of the retreat experience at all levels. Retreat fees are intended to reduce in cost for future generations by providing an optimal experience for the spiritual aspirants continuously. Outreach programmes are aimed to increase awareness of individuals and groups seeking Buddha's teachings (Insight Meditation Society, 2010).

Conversely, the Baha'i society aims at bringing an evolving civilization by creating a peaceful global community. Individual and collective well-being is part of the organization's vision of the future. With moral and spiritual development, social and economic changes are necessary. The socio-economic developments are undertaken by the Baha'is to realise the vision. Usually, these efforts start from the roots; small groups of individuals from villages or towns. As the initiatives expand, the administrative structure enlarges as well. The initiatives benefit the community at large and not merely the Baha'is. Spiritual awareness is required with the availability of material resources to foster these developments. Social change comes from the awakening of the human

spirit. Qualities should be developed to initiate 'cooperative and creative patterns' of human engagement in a community (Baha'i, 2010).

Cohesion and unity of purpose for progress in the world are being promoted with avenues of spiritual endeavours. Hence, patterns of life are being constructed in villages and cities around the globe by the Baha'is to share the knowledge that lies at the heart of social progress. Therefore, social and economic development is concentrated in increasing the number of worshippers, communities and institutions to evolve spiritually and materially. There is a global learning process where individuals from any cultural and ethnic background are working together to apply the science and the spiritual insights of the Baha'i teachings (Baha'i, 2010). A summary of this chapter is discussed in the following section.

5.7   Conclusion

The Osho International Meditation Centre is situated in a natural environment away from the urban nodes in Pune. In contrast, the Baha'i House of Worship in Chile is located on a hilltop while the Retreat Centre is found amidst residential buildings. The outdoor landscape forms part of the functions of the all the centres for spiritual practices to take place in nature. Meditation techniques, yoga, dancing, painting and martial arts are the activities carried out in the outdoor open-air spaces. Apart from that, the centres have socialising venues. Some are indoors while others occur in nature, for instance, eating facilities. The resort in India is designed to express the principle of silence – a teaching emphasized by Osho. Architecturally, the buildings were devoid from ornamentation and have clean simple finishes. It is observed that the form has symbolic meanings while the interplay of light and shadow was also included in the design. The form relates to the metaphysical qualities that establish a connection between the earth and the heavens. The resort merges subtly with its landscape. The colour palette merges with nature as well. Dark colours were used mostly on the exterior while the interior is flooded with light from apertures at roof and clerestorey levels. In contrast, the Retreat Centre in England is a revamped existing structure. Its architectural style relates to its surrounding context. The Baha'I temple has a contemporary architectural style. The inner spatial arrangement is huge compared to the other precedents. The cosmic forms of the petals and their structure are designed to cater to allow open plan inner spaces for

group meditation. Smaller cells are located on the periphery of the structure where private and individual contemplation takes place. Landscaping elements and water bodies are provided to create a serene atmosphere in the outer environment. Spiritual numerology and symbols are applied in the building and garden design. Proportion, order and sense of scale are seen in the temple design. The aesthetic appeal stems out from its monumental structure and bright colours are used symbolically to signify divine light. The following chapter involves critical and thorough analysis of case studies in terms of architectural and theoretical background.

CHAPTER 6

CASE STUDIES OF SPIRITUAL CENTRES

IN DURBAN AND MAURITIUS

6.1 Introduction

Three local case studies have been chosen in this chapter: the Hare Krishna Temple in Chatsworth and the Sivananda International Cultural Centre at La Mercy. The main reason for this selection is that each of the buildings contains specific aspect of spirituality and dealt in a different context. First-hand information was gathered from the users of the building including authorities within the facilities. The collected data will lead to a better understanding of the institutional typology and its relevance in its context.

Other case studies include Meditation Centres in Mauritius of the Satyam Gyanam Anandam Society: the Prashant Ashram and the Lao Tzu Meditation Centre. A meditation centre is not only a hall to be in communion with the self, but it also incorporates various facilities that are useful to open the human senses and initiate the creativity of the mind. This chapter consists of different aspects that categorize the issues and problems mentioned earlier in the research. The idea is to test the theories as discussed in the literature review and establish a critique of the case studies. The chapter will consist of issues that have been raised previously in the literature review and they will be analysed in various buildings. In this section, the issues are dealt with more importance by analysing both qualitative and empirical data.

6.2 Justification of Study

The sites have been carefully chosen for specific reasons. The Hare Krishna Temple in Chatsworth is an example where the planning principles of Vastu Shastra have been applied. Although the practices are towards devotion mainly by chanting the divine words of God, there are various associated functional aspects that need to be considered while designing a sacred building. Landscaping forms part of the design initiatives and integration of the users into nature has been a target. More to that, the building also reveals some symbolic meanings of forms and involves geometry, proportion and order. Spatial qualities vary with the numerous functions that are accommodated in the complex.

Another case study in the KwaZulu Natal province is the Sivananda International Cultural Centre at La Mercy. The centre is quite complex since it has numerous

functions that occur on site. The building is spread out on a huge plot of land. Reference is made to an architectural style that is highly influenced by spiritual knowledge and divine intervention. The building's scale is big in terms of functions and space. However, symbolism and interpretations of religious beliefs to a spiritual context are clearly seen on site. Aesthetics play an important role in the complex with colours associated with spiritual connotations.

Furthermore, two case studies have been chosen from Mauritius since there are similar climatic conditions and objectives of the meditation centres. These two centres belong to one society but have been built during different periods; hence a comparative study may be of importance to understand the needs and transition that occurred. But more importantly, the reason of choice is because the society is led by a living enlightened spiritual master who is rare nowadays. Direct input from the spiritual master in terms of the world's needs and the essence of spirituality is beneficial. A comparative analysis between the two countries will be valuable and may help to generate better outcomes from this study. The chapter also consists of qualitative and empirical data found by literature and personal engagement on site by the researcher.

6.3   Site and Context

6.3.1   Hare Krishna Temple

Plate. 6.3.1-1 illustrates the view o the Hare Krishna Temple from the parking area (Author's photograph, 2010).

The Hare Krishna Temple (Plate. 6.3.1-1) built by the ISKCON Society in 1985 in Chatsworth is a remarkable building and is a reference in spiritual architecture in South Africa. The temple designed by Rajaram Das, an Austrian-born devotee architect, conceals mystical and symbolic attributes. The design is based on the principles of Vastu Shastra.

Plate. 6.3.1-2 illustrates the ramped bridge to the temple level (Author's photograph, 2010).

Parking is outside the site perimeter. There is a clear language of most public and private space. The parking is most public and represents the mass. The entrance is accessed via stairs and ramps. The temple is located at the second level, accessed by a ramped bridge (Plate. 6.3.1-2) catering for disabled users.

6.3.2 Sivananda International Cultural Centre

The Sivananda International Cultural Centre (SICC) is located at La Mercy (Figure. 6.3.3-1) which is about half an hour drive from Durban CBD. The site is found in an isolated green area on the outskirts of which are residential areas. The twenty hectares land has developed into a substantial complex over the years. The Sivananda International Cultural Centre is a tribute to the teachings of Swami Sivananda, a great Saint from India. The Divine Life Society in South Africa was founded by the Divine Master, Swami Sivananda who gave Swami Sahajananda the responsibility to establish the organisation locally (Swami Sivananda, 2010). The SICC conceived in 1987 had only one block, now it has developed into a mega-complex. The design was visioned by Swami Sahajananda and was eventually constructed. It has been mentioned that no architect had designed the scheme. One of the grand words of Swami Sivananda to Swami Sahajanada was the 'dissemination of spiritual knowledge through his literature and service of the underprivileged' (Swami Sivananda, 2010).

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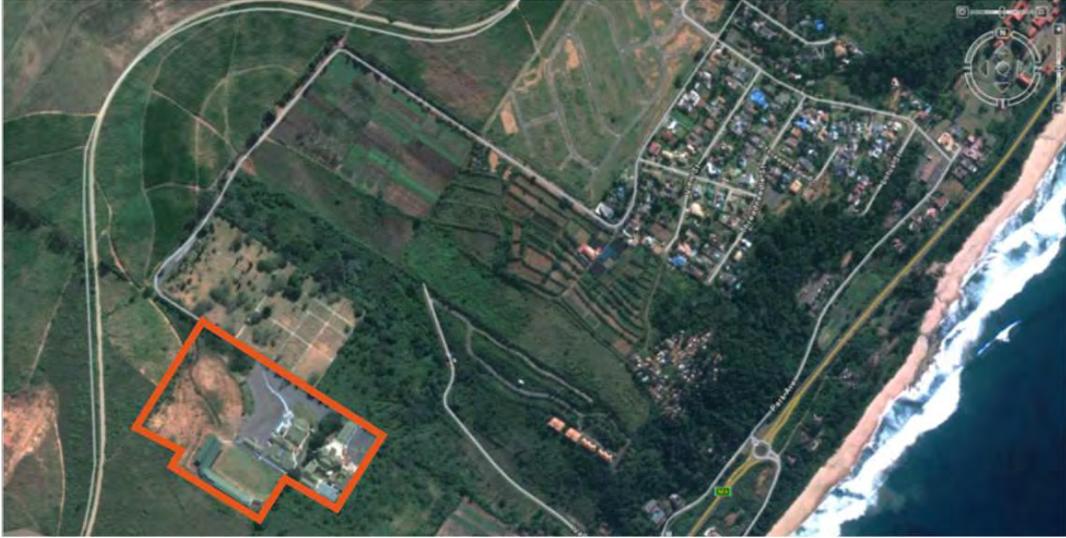
Figure. 6.3.2-1 illustrates site location of the Sivananda International Cultural Centre (Google Earth, 2010).

6.3.3   Prashant Ashram and Lao Tzu Meditation Centre

On the tropical island of Mauritius, the Satyam Gyanam Anandam Society (SGAS) is operated under the enlightened guidance of the spiritual master, Swami Paramananda, whose vision is a global mind transformation which is achievable through the science of meditation leading to peace, harmony, love and brotherhood. SGAS is open to everyone irrespective of beliefs, religion, race, creed and caste. Currently, the organisation has more than twelve hundred practitioners. SGAS has two meditation centres in Mauritius and affiliates in the UK and Canada. The Prashant Ashram (Plate. 6.3.3-1) is located in the centre of the island, in a low density residential area amidst a natural setting of green landscape and mountains. Since operational in 1999, the meditation centre provides all the facilities for the practice of countless meditation techniques under the guidance of Swami Paramananda (Swami Paramananda, 2009).

Plate. 6.3.3-1 illustrates the Prashant Ashram meditation centre (Swami Paramananda, 2009).

Plate. 6.3.3-2 illustrates the Lao Tzu meditation centre (Swami Paramananda, 2009).

A group meditation with the master creates a powerful and sacred environment highly conducive for spiritual practice. The Prashant Ashram or the Abode of Transcendental Peace is designed to have an atmosphere of relaxation and free from the rigorous disciplines that torture the human body. Followers from all walks of life use techniques that suit their temperament (Swami Paramananda, 2009).

The Lao Tzu meditation centre (Plate. 6.3.3-2) inaugurated in 2009 aims at making the science of meditation more accessible to seekers. It has been designed to serve as a spiritual laboratory by ensuring the appropriate infrastructure and environment to achieve eternal peace and bliss.

While the Prashant Ashram is located in the centre of the island, the Lao Tzu is situated in the southern region. The regions are less humid as they are on an upper plateau and not along the hot humid coastal plain. In contrast, the SICC is located close to the coastal plain at La Mercy and is ventilated by the sea breezes. The Umgeni temple is amidst a noisy traffic hub whereas the Hare Krishna is in residential area. Yet the interior spaces have a reigning silence (Swami Paramananda, 2009). The following section discusses the spatial and functional requirements of each of the case studies mentioned.

6.4 Spatial Organisation and Functions

6.4.1 Hare Krishna Temple

The layout of the Hare Krishna Temple is based on the Vastu Purusha Mandala principle. The landscaped garden has been designed as a lotus flower (Figure. 6.4.1-1) which is symbolic to spiritual practice (Naidoo, 1997: 7). The plan is set on axis where the gates are positioned at the cardinals. Man is said to be a lotus. He has to blossom and at that peak he achieves enlightenment. It is the process of birth to the state of oneness. The moat surrounding the temple represents the cycle of birth and death in the material world (Kribashne, 2010: 14). The circle that symbolizes ignorance depicts destruction and is represented by Lord Shiva. Each triangle has an opposite triangle and represents the dual nature of life (Naidoo, 1997: 7). The design layout also reveals the application of a bindu yantra: dot, triangle, circle and square.
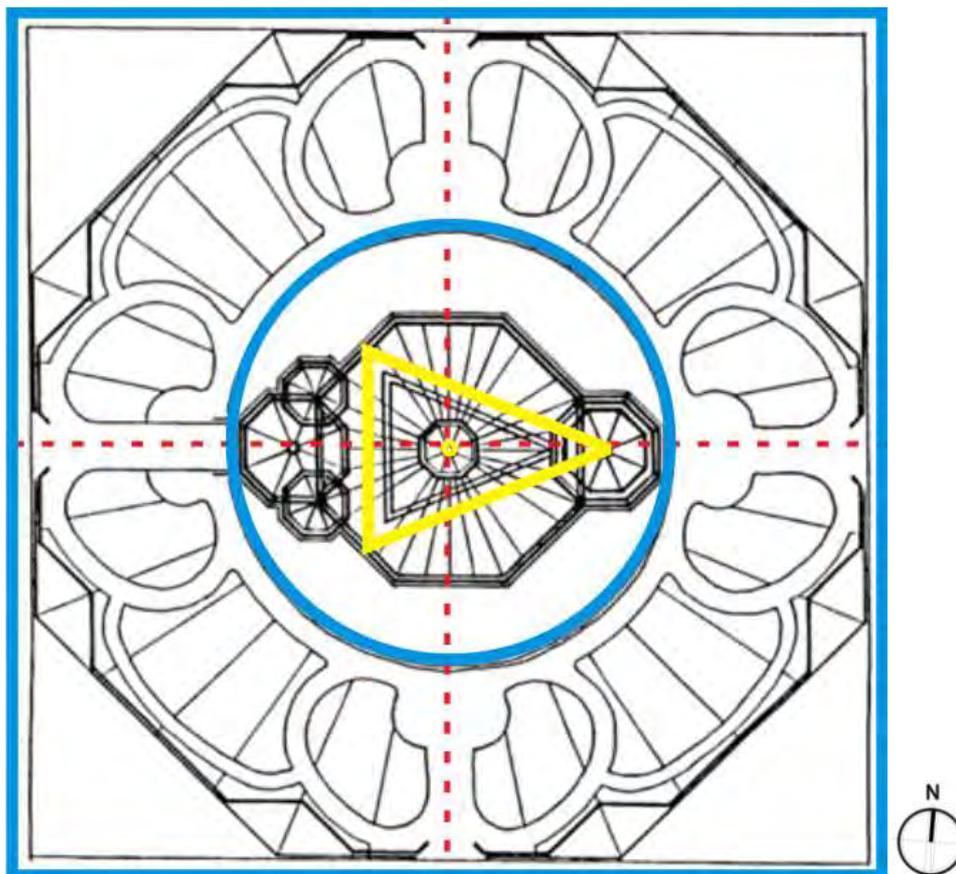
Figure. 6.4.1-1 illustrates the design layout of the temple (Naidoo, 1997: 7).

The square is a symbol of intelligence and is represented by Lord Brahma who is the Creator. The temple is dedicated to Krishna and is symbolic to Lord Vishnu. The Vastu Purusha Mandala has a square layout. It is the gate through which a soul enters. The temple (Figure. 6.4.1-1) is accessed from the bridge that ramps up from the street level – parking.
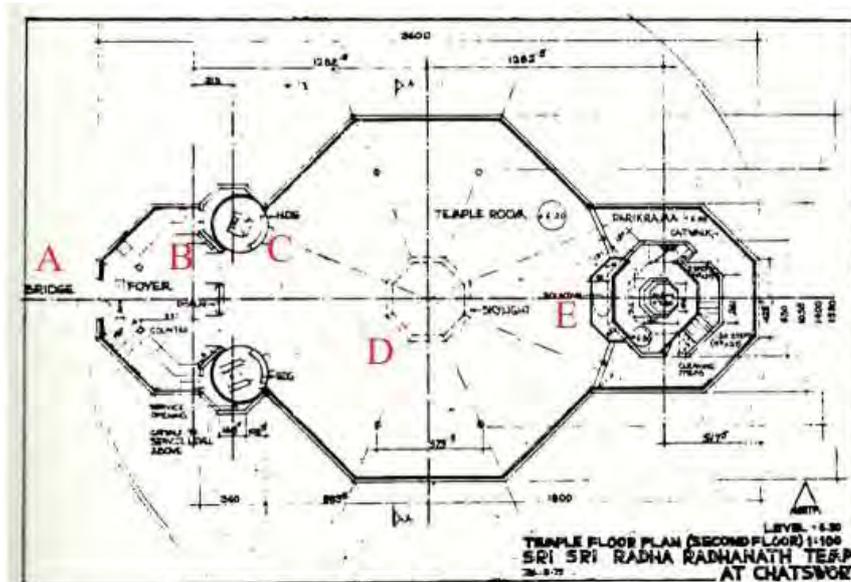
A – Bridge

B – Book Exhibition

C – Founder Statue

D – Praying Area

E – Krishna Deity Statue

Figure. 6.4.1-2 illustrates the temple floor layout (Naidoo, 1997: 7).
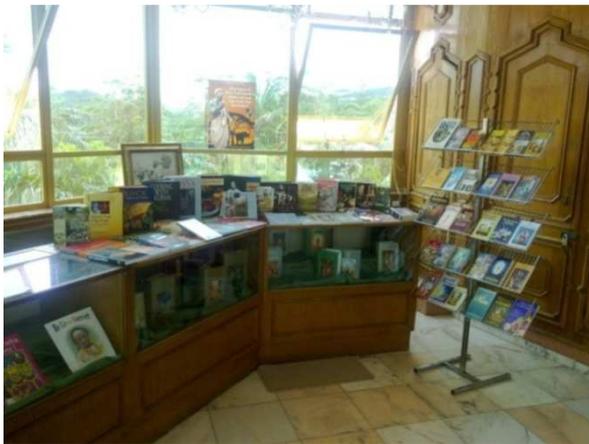
Plate. 6.4.1-1 illustrates the book exhibition space at the foyer (Author's photograph, 2010).

Visitors leave their shoes outside the threshold of the main entrance door of the sanctuary. A book exhibition and gift area (Plate. 6.4.1-1) are located at the temple entrance. Walking beyond, the visitors experience a grand space free from columns in an octagonal shape. The founder's statue is on the left and the procession leads to the main sanctuary of Krishna which is placed in the east.

Plate. 6.4.1-2 illustrates the spatial layout at the temple (Author's photograph, 2010).

Plate. 6.4.1-3 illustrates a mass prayer event at the temple (Author's photograph, 2010).

The praying space (Plate. 6.4.1-2) is suddenly huge when it is empty but is comparably small when there is a mass prayer (Plate. 6.4.1-3). Other activities include a prayer room at the first floor level that has a shrine of the founder.

It is open to the public but usually member meetings and gatherings occur there. At that same level, there are administration and rest rooms which are reserved access. The ground floor has a reception area with a narrow corridor running to the back to the food area. It has a seating area on one wing and is open to the general public. Vegetarian food is sold as part of a fund raising programme.

The rooms and spaces are not spacious in the lower floors. It is problematic accessing those spaces when there is a big crowd, especially along a narrow corridor. The public and private spaces are not well defined in these regions. On the eastern side of the site there is a block for the food of life and an organic garden beyond. That area has its own delivery access. The southern edge has an administration block with residential units in the same zone. Classrooms and teaching facilities are provided. A food area is located in that wing serving the members of the temple especially those engaged in the spiritual practice. The residential units comprise of men and women blocks located separately. Each unit has a bed, cupboard and an ablution facility to it. About twenty five units are available on site.

6.4.2 Sivananda International Cultural Centre

The SICC (Plate. 6.4.2-1) has various components attached to it. It was first built as a single block accommodating the Bhagirithi. The Ashram has full-time inmates who joined in their teens who are twenty-five in total; male and female. They are involved in the publication of spiritual literature, fund-raising and participate in every activities of the organisation.

Plate. 6.4.2-1 illustrates an aerial view of Sivananda International Cultural Centre (Swami Sivananda, 2010).

10. Ganga Darshan	19. Vaikunta Dham	1. Sivananda Prayer Hall
11. Toilets and Bathrooms	20. Stadiums	2. Foyer
12. Shanti Hall	21. Arjuna Peace Centre	3. Darshan Hall
13. Ganga Rani	22. Aspirants' Quarters	4. Kitchen and Dining Hall
14. Guru Kripa	23. Stadium Changerooms	5. Sivananda Guha
15. Sivananda Nature Reserve	24. Visitor's Quarters	6. Garages
16. Printing Press	25. Hall and Storage Room	7. Vishwananda Hall
17. Dining Room and Kitchen Complex	26. Car Parks	8. Atmananda Hall
18. Bhagirathi		9. Sewing Centre

The site (Figure. 6.4.2-1) consists of unit blocks in the southeast and playgrounds on the northwest. The blocks were extended towards the playground in further phase developments.
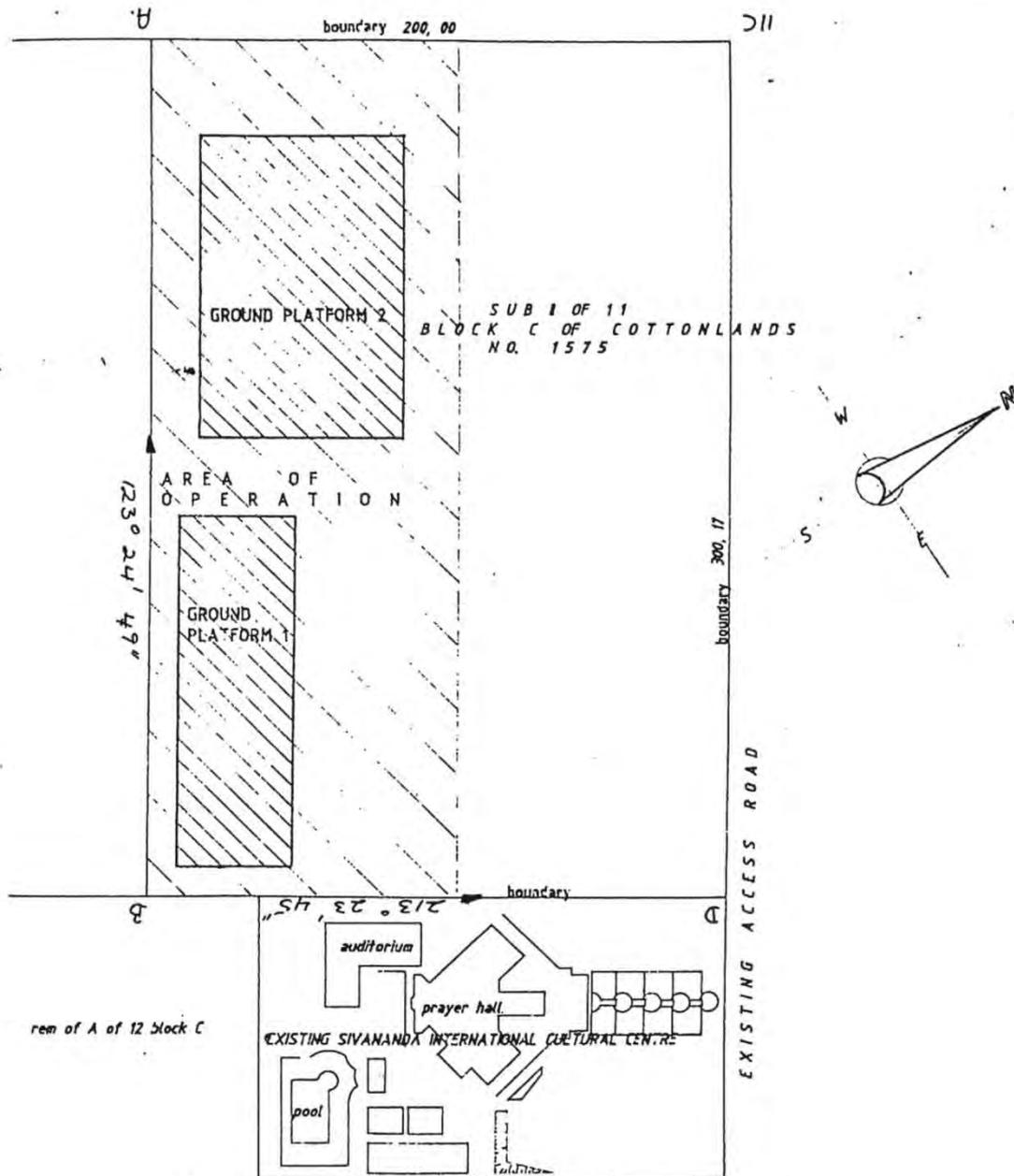
Figure. 6.4.2-1 illustrates the site plan of the SICC at a preliminary phase. New blocks have been added on the North West side of the existing prayer hall (Naidoo, 1997: 7).
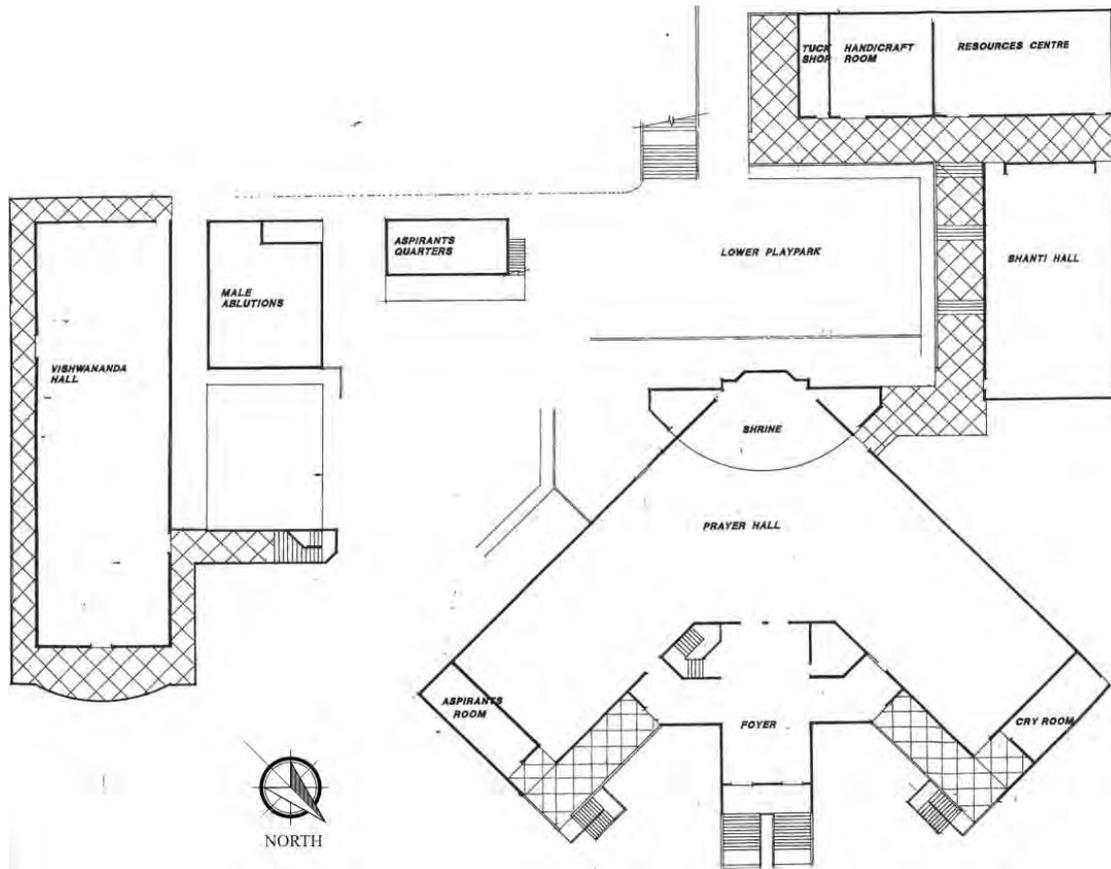
Figure. 6.4.2-2 illustrates the spatial arrangement of SICC, mainly the prayer hall (Naidoo, 1997: 8).

Plate. 6.4.2-2 illustrates shrine with illuminated frames of deities and the Divine Master (Author's photograph, 2010).

The Sivananda Prayer Hall (Figure. 6.4.2-2) consists of two wings that can accommodate eighteen hundred people - males and females. Each wing is dedicated to each gender. A cry room is located adjacent to the prayer hall for mothers to look after their babies who become restless so as not to disturb the tranquil atmosphere.

An elevated shrine of the Divine Master Sri Swami Sivananda (Plate. 6.4.2-2) is the central focal element where the two wings merge. The shrine consists of other deities as well and worship occurs at this venue (Plate. 6.4.2-3). A main entrance is led by a staircase from outside to a foyer on the first floor. The ground floor consists of kitchen and dining areas with storage rooms (Swami Sivananda, 2010).

Plate. 6.4.2-3 illustrates wing of prayer hall with seating (Author's photograph, 2010).

Yoga camp facilities are located on a block on the extreme left of the prayer hall. They have a similar setting to the prayer hall. An ablution block is located at the rear of the yoga camps. At the far rear of the prayer hall block is a residential block for the male inmates. Female inmates reside in another centre in Reservoir Hills.

A Shanti Hall is a terraced auditorium that is used for yoga camps as well and is an overflow of the prayer hall at its rear. To the far left of the residential block is the Ganga Rani. The Ganga Rani (Plate. 6.4.2-4) has the size of half Olympic swimming pool which is a covered area. The water from the sacred river of Ganges in India is poured monthly into this pool.

Plate. 6.4.2-4 illustrates an interior view to the Ganga Rani (Author's photograph, 2010).

It has the shrine of the Divine Master at the end of the pool. There is the Deity Ganga's frame at side of the pool. Devotees prostrate there and take blessings in the form of the sacred water by taking a dip by the hands and pour the water over the head. It is symbolic of purifying the body by the act of cleansing.

There is a paddling pool for children at one side. Daily prayers are carried out early in the morning. The Ganga Rani has green floor mat all around the blue coloured pool. Light beams are shone from the steel truss roof. However, it is very hot inside due to the heat absorption by the steel roof. Openings are placed at clerestorey heights for ventilation. Mechanical fans are also provided. The colours are magnified with garlands of multiple colours around an illuminated shrine of the Divine Master. It is a place where the visitors are full of praise of the beauty. The space is always kept cleaned.

Seating is around the pool with a side wall cushioned-like plinth (Swami Sivananda, 2010). The Bhagirithi (Plate. 6.4.2-5) is the amplified version of the Ganga Rani – it is spectacular.

It consists of three fountains of water which cascade from one fountain to the other. There is a soothing sound of the cascading water that is conducive to contemplation of the mind - meditation. It can be used as a therapy to ail the body, mind and soul. The shrine of the Divine Master is found at the bottom of the stairs, the top of which is the entrance to the space.

Plate. 6.4.2-5 illustrates an interior view of the cascading water fountains at Bhagirithi (Author's photograph, 2010).

Coloured window panes emit a layered array of light while clerestorey lights above the cascade allows direct light in the space. Mosaics are used to wrap the cascading water fountains. A similar colour pattern is observed throughout the design of this centre. The colours also accentuate beauty and richness – a place that is welcoming (Swami Sivananda, 2010).The Guru Kripa (Plate. 6.4.2-6) is the most captivating space in the cultural centre.

This is basically where the devotees will meditate in complete silence. It is termed as "heaven on earth". The aesthetic quality of the space is majestic. The entrance is marked by an alley flanked by deities to finally terminate to the Divine Master's shrine. There are display cabinets on the left side of the space.

Plate. 6.4.2-6 illustrates the processional entrance to the Guru Kripa (Author's photograph, 2010).

Plate. 6.4.2-7 illustrates the sayings of Sivananda exhibited at the Guru Kripa (Author's photograph, 2010).

They showcase sayings (Plate. 6.4.2-7) by the Divine Master with colourful pictures of birds, flowers, animals and scenic landscape. It is a place of ultimate silence. The Sivananda Nature Reserve is a section of display of nature and animals, adjacent to the Guru Kripa. The Vaikunda Dham is a display area for the spiritual literature produced by the society at its own on-site publishing press.

The centre also has a stadium that accommodates five thousand seats. It is mostly used for sports events but also provides ample space to conduct satsangs, displays, dances and plays (Swami Sivananda, 2010).

6.4.3 Prashant Ashram and Lao Tzu Meditation Centres

The meditation space (Plate. 6.4.3-1) in the centres in Mauritius is designed to accommodate about a thousand people. Seating is in the form of portable chairs which are used only when satsangs or talks are held by the Master. Meditation techniques are conducted mostly in the seating posture.

Plate. 6.4.3-1 illustrates the meditation hall at Prashant Ashram (Swami Paramananda, 2009).

For special yoga exercises, the space can be modified. Meditation sessions are for experienced followers as well as new groups. The Prashant Ashram meditation centre does not have any residential accommodation on site although it was part of the initial design plans to include residential units on the first floor.

Plate. 6.4.3-2 illustrates satsang sessions in the meditation centre (Swami Paramananda, 2009).

The idea was dropped due to financial constraints and has not yet been materialized since its opening in 1999. The meditation hall is split in two halves (Plate. 6.4.3-2). From the stage, on the left women are seated and men on the right side. This has a deep spiritual connotation.

The hall is rectilinear having a beam and column structure system. The roof is flat because of the provision of an upper floor in the design but the building has remained single storey.

Plate. 6.4.3-3 illustrates the stage beyond, from the main entrance of hall (Swami Paramananda, 2009).

The main entrance (Plate. 6.4.3-3) is processional and leads to the stage where the Master is seated. Access doors are on either side of the long facades for men and women. Men and women enter the prayer hall separately as they have to leave their footwear outside at the veranda in a shoe rack. Apart from having meditation courses, the society is also engaged in sharing the spiritual knowledge. There is an AV room for recording purposes. In recent years, the society has made use of media; CDs, DVDs to extend the knowledge. The AV room (Plate. 6.4.3-4) is an alteration design that is now located on the side wing of the meditation hall. The sessions are also broadcast live overseas to the affiliates in UK and Canada on certain important events.

Plate. 6.4.3-4 illustrates the AV room looking out to hall (Swami Paramananda, 2009).

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Plate. 6.4.3-5 illustrates the administration block at the rear of the parking lot – consisting of library and offices (Swami Paramananda, 2009).

The meditation hall has an attached suite for the spiritual master and a room for members of the community to supervise the organizing of events. A new administration wing (Plate. 6.4.3-5) was built recently to accommodate an office, library and adherent office. Members of the society have to pay a monthly adherent fee for the running of the administration component of the organization.

The parking lot is in front of the administration block. It is not tarred but is filled with gravel. However, it is a noise factor as it is located too close to the hall. An external parking lot is located on the outside of the building boundary walls. That area was later purchased and developed with landscaping for outdoor meditation purposes. The main gate entrance is on the south east corner and is defined by a security control room (Plate. 6.4.3-6).

Plate. 6.4.3-6 illustrates the main gate and security control room (Swami Paramananda, 2009).

Plate. 6.4.3-7 illustrates the main entrance porch with an added tent area (Swami Paramananda, 2009).

Next to the security post, grassland used to be temporarily occupied by a market stall where vegetables produced on site were sold to members for fund-raising purposes. The Prashant Ashram is regularly maintained and new colour paints have been added over the years. Due to the increasing number of members, the centre is over-crowded and the entrance porch to the meditation hall does not serve its initial purpose. Seating accommodation is extended at that verandah and an additional tent area (Plate. 6.4.3-7) has been added. Beyond the tent and on the south west of the plot is a kiosk where the Spiritual Master receives his followers.

The latter relate their experiences while practicing the meditation techniques and the Master advises and guides them on their spiritual path. The tent space is also used as a waiting area to meet the Master. These meetings occur before and after indoor meditation sessions. Due to the over-crowdedness at Prashant Ashram, the Lao Tzu meditation centre became necessary to decentralize the functions of the society. The new centre has almost the same features as the first one but is built with more spiritual attributions. The space is enclosed on four sides and has access from three sides. The entrance porch is no longer available. Instead a porch area is created to lead to the Master's suite located directly at the front in contrast to the former centre where it is at the back. The centre is rectilinear and has similar properties as Prashant Ashram. Entrances for followers are on either side led by a verandah. The AV room is at the rear in this design and not on the sides as in Prashant Ashram. Ablutions are located at the rear too and access is on either side from the verandah for each gender, hence there is no overcrossing.

Spatially the meditation centres in Mauritius have the same configurations in contrast to the SICC where there are numerous venues for different practices of yoga, prayer and meditation. The blocks at the SICC are mostly single storeys but extend vastly across the site. It is a more comprehensive design where numerous activities take place. But there is limitation to that; the buildings are not occupied on a daily basis, maybe once or twice a month. However, the centres in Mauritius are occupied weekly especially during weekends where there are different groups that participate into the meditation sessions: the old group and the new groups. The thousand people hall is always full and additional seating arrangements have to be made outside the building for meditation sessions; more and more people are interested in meditation. The following section analyses the design and environmental aspects in each building.

6.5   Design and Environmental Aspects

6.5.1 Hare Krishna Temple

Water is an important component in spiritual architecture. Initially, it was not thought to be a part of the Hare Krishna temple design but the benefits of it in terms of Vastu and

positive energy have pushed the architect to make it an integral part. Water is soothing and is a symbol of purity.

Plate. 6.5.1-1 illustrates the water lake beneath the temple (Author's photograph, 2010).

Plate. 6.5.1-2 illustrates the interior space of the temple (Author's photograph, 2010).

Plate. 6.5.1-3 illustrates the organic garden at rear of the site (Author's photograph, 2010).

The Hare Krishna Temple is built on a lake of water (Plate. 6.5.1-1). It signifies the three worlds: the ocean, the earth and the heavens. It also depicts the evolution of man: it started with the fish, human creature and finally the absolute. Water purifies the atmosphere creating a relaxing environment suitable for spiritual practice. The interior space (Plate. 6.5.1-2) is ornamental with the use of gold colour, shiny reflective materials and delicate decorations. Lord Krishna was colourful in his actions and physical appearance too. The space is welcoming and the visitors are awe with admiration. The space is well lit naturally with wide openings providing cross ventilation from all sides. Clerestorey lights and vents are placed at the crown of the roof.

The temple has a self-sufficient organic garden (Plate. 6.5.1-3) located at the rear of the site close to the food of life block. Fresh produce are cooked and served to the visitors and spiritual seekers. Lot of consideration has been placed in terms of the user accessibility and comfort in the site. The landscaping area is admiring and inspiring. It is designed according to Vastu principles but also marvels in terms of architecture.

Plate. 6.5.1-4 illustrates the provision of benches in the landscaped area (Author's photograph, 2010).

Benches have been included all along the ramped walkways. The idea was to allow visitors to integrate with nature. Spiritual practice can also be practised outdoors. The benches (Plate. 6.5.1-4) may be used for spiritual as well as relaxation purposes. One could relax on the bench while observing the water feature in front of them and enter a mode of contemplation.

Plate. 6.5.1-5 illustrates urban furniture as electrical lighting (Author's photograph, 2010).

Urban furniture (Plate. 6.5.1-5) also includes electrical lighting that enhances and illuminates the space at night. The temple is active even at night for special events. Balustrades, trees and shrubs are all in harmony and coexist so as to enhance the environment to be part of. The ramps and walkways are designed to take the visitors to different spaces on site through the four gates. It is an experiential journey to each function of the temple.

6.5.2   Sivananda International Cultural Centre

Plate. 6.5.2-1 illustrates the Ganga tree when blossomed (Author's photograph, 2010).

The SICC has shaded trees which are unique. They hold significant meanings. The Ganga tree (Plate. 6.5.2-1) is one example. The tree would be without leaves for a period of time before September and on the date of birth of Swami Sivananda, the tree is plenty with leaves.

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Plate. 6.5.2-2 illustrates gathering space (Author's photograph, 2010).

Plate. 6.5.2-3 illustrates the children's play area adjacent to the Bhagirithi on the right ((Author's photograph, 2010).

It is a miracle of nature. The tree is found on a bank along which there is a pathway. Trees are beneficial as they provide shade. There are four significant trees that are worshipped and rites are performed. Seating areas are seen at these places. Usually, they are areas where one can enjoy the peace and beauty of nature, or meditate. An adjacent place (Plate. 6.5.2-2) shows an enclosed area for seating. It has benches. This space is for relaxation, eating or engaging in a social discussion. It is protected from the sun and a cool breeze is felt under the shade of the tree. The children's play area (Plate. 6.5.2-3) is a green field with the in-place colourful play structures. It just alleviates a tension in space. A silence is broken with the sound of kids' joy.

Usually, that would take place during an event at the venue. The society is not only about tranquillity but also advocates the activity that is required to channel energy in the human body. The interior space of Ganga Rani (Plate. 6.5.2-4) is colourful. It has a steel truss roof system.
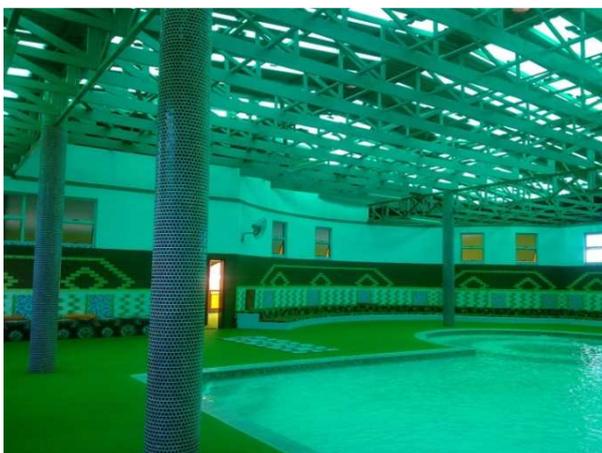
Plate. 6.5.2-4 illustrates the inner structure of the Ganga Rani (Author's photograph, 2010).

Light penetrates through via skylights and openings on the sides. Yet the space is transient. The bottom is in shadow while the top is flooded with light. One major drawback is the heat absorbed into the space. In summer it is extremely hot. Yet the water at the pool has a cooling effect.

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Plate. 6.5.2-5 illustrates the openings and fan in the inner space (Author's photograph, 2010).

Plate. 6.5.2-6 illustrates light into the interior space at the Guru Kripa (Author's photograph, 2010).

Openings on the sides (Plate. 6.5.2-5) become necessary to allow cross ventilation. It needs to be airy especially when the area is fully occupied. To some extent, it seems that the openings do not really serve that purpose. Mechanical fans supplement ventilation. The spaces are mostly closed and locked. Only when there is an event or ritual times that they are opened. Upon visiting, it has been observed that those spaces are extreme tranquil and silence has to be maintained. Opening windows would perhaps create external sound to be heard from inside. The cultural centre has been visioned by the head of the society in South Africa. An architectural approach would have been much effective to resolve problems of lighting and ventilation.

The natural essence is not felt on the inside. At the Guru Kripa (Plate. 6.5.2-6), the meditation space is completely silent. The light is controlled using blinds on the inside but windows are rarely opened.

6.5.3   Prashant Ashram and Lao Tzu Meditation Centres

Landscaping is crucial in the design of spiritual organizations. The Prashant Ashram's natural landscape was manually shaped over the years by volunteers from the centre. Today, the space is adequate for outdoor meditation. Spiritual retreats and therapies take place at different periods during the year.

Plate. 6.5.3-1 illustrates the natural outdoor landscape used for spiritual practice at the meditation centre (Swami Paramananda, 2009).

The maintained garden (Plate. 6.5.3-1) consists of palm trees, shaded trees, fruit trees and flowers. An existing river runs on the site and a lake was formed later. Rebirth therapy is practised outdoors. It is basically giving the self a second birth and a new start for a fresh, light and healthy body. The results create a cheerful heart of love and forgiveness with enhanced mental faculties.

It is a dynamic meditation techniques practised in mass. Spiritual retreats (Plate. 6.5.3-2) occur on consecutive days to ensure a flow of energy for that period of time. Usually, specific topics are reflected upon with breaks when meditation techniques are practised. Spiritual retreats are aimed to boost the spiritual evolution of seekers. Usually, at the end the spiritual Master transmits energy to his disciples through blessings (Swami Paramananda, 2008).

Plate. 6.5.3-2 illustrates a spiritual retreat where mass meditation was carried out (Swami Paramananda, 2008).

Plate. 6.5.3-3 illustrates light flooding into the interior space of the hall (Swami Paramananda, 2009).

Natural ventilation is very important in the meditation hall. The latter has opened windows and doors on the longer facades. Cross ventilation is established and is critical in an enclosed space of a thousand people. Natural daylight (Plate. 6.5.3-3) is important as artificial light generates heat in the interior.

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The use of colour is chosen appropriately to reflect light into the space; therefore soft colours are preferred.

In addition, the use of verandahs (Plate. 6.5.3-4) solves the problem of glare in the building. Verandahs have design and environmental functions. The verandahs also serve as a social gathering space. Both meditation centres have trees, shrubs and flowers near to the buildings. The idea is to channel fresh air and also the aroma of the plants purifies the air.

Plate. 6.5.3-4 illustrates verandah on outside of hall (Swami Paramananda, 2009).

Orientation is very important in the setting of the plot and allocation of functions. The stage is set to attract most positive energies which are then transmitted to the disciples via vibrations during meditation. At Lao Tzu meditation centre the verandah is almost flat and screed is set to fall to the ground whereas at Prashant Ashram the verandah is set on a plinth and is accessed via stairs off ground. Water runoff is a factor to consider with open verandahs. The following segment deals with aesthetic and symbolic elements that enhance the quality of space and experience through the buildings.

6.6   Symbolism, Aesthetics and Spiritual Attributes

6.6.1   Hare Krishna Temple

The fact that the Hare Krishna temple's location is on a higher level, it suggests that the place of God is supreme and topmost on the ladder of evolution. The design is composed of different geometrical shapes that have symbolical and philosophical meanings. Three aspects of life are reflected in the design: traditional, contemporary and futuristic. These trends can be seen in the design and form part of the ISKCON (Kribashne, 2010: 14).

The three domes are finished with white and gold (Plate. 6.6.1-1) - representing the traditional aspect. The biggest dome houses the main deity, Krishna, who is an incarnation of Lord Vishnu. That dome has windows in the shape of large 'Vaisnava tilaka' – symbolizing Vishnu. The top of the dome rests on traditional Vishnu chakra which is the wheel of God. Fenestration design has a symbolic meaning. The ground floor and the first floor have a continuous band of windows. They are designed to represent the busy and chaotic lives led by people depicting hastiness and the fast pace of the world.

Plate. 6.6.1-1 illustrates the form composition of the Hare Krishna temple (Author's photograph, 2010).

However, fenestration at the temple floor is different. They depict openness and clarity. The temple constitutes of various basic shapes such as circles, triangles, squares and octagons. The shapes are meaningful in the Vedic scripture. The circle represents the mode of ignorance, the triangle represents modes of passion and karma, the square depicts goodness and the octagon represents the symbol of Vishnu. The stainless steel roof has an octagonal shape – it covers the open space for praying in the temple. The boundary walls have their importance. They act as a transcending element between the material world and the spiritual world (Kribashne, 2010: 14). The temple is the abode of spirituality. The four entrances (Plate. 6.6.1-2) symbolize the four yugas – eras of time and evolution.

Plate. 6.6.1-2 illustrates the gate of one the four entrances symbolizing the yugas (Author's photograph, 2010).

The bridge entrance is the main gate and signifies bhakti-yoga. The height of the temple from ground to the top of the chakra is hundred and eight cubits – a spiritual number which is also the number of beads in a chanting bead chain. The aesthetic value defines the beauty of the structure and is a welcoming feature to attract users to an environment.

6.6.2 Sivananda International Cultural Centre

Plate. 6.6.2-1 illustrates use of contrasting colour to guide visitors (Author's photograph, 2010).

Plate. 6.6.2-2 illustrates use of variety of colours and texture (Author's photograph, 2010).

Plate. 6.6.2-3 illustrates the cascading water fountains (Author's photograph, 2010).

The SICC has an illustrious appeal in terms of aesthetic quality. The buildings are made out of face bricks. The main entrance (Plate. 6.6.2-1) is clearly defined. It has a paved square in front leading to a staircase. The porch has a pitch roof with a text in blue on a yellow painted plastered surface. The yellow is a contrasting colour and immediately catches the eye of the users. This entrance leads to the prayer hall. The block is set on axis with two wings on either side. The printing press (Plate. 6.6.2-2) is another block with architectural delight. The face brickwork has articulation. Verandas and colonnades are expressed in different colours and textures; plaster, mosaics and tiles. The composition of the elements is well formed. The Bhagirithi has an essence of spirituality. It is a place of wonder. Water is an element of purity that is used to cleanse the body and soul. The water fountains (Plate. 6.6.2-3) have a soothing sound that can be used to enter a deep meditative state. The colours used are blue as it represents peace.

The tainted windows are in yellow which signifies love. Green is the colour of tranquillity. These three colours are emblematic in the aesthetic quality of the spaces in the centre both inside and outside.

Plate. 6.6.2-4 illustrates illuminated deity frames and meditation area at the book display area (Author's photograph, 2010).

There is therefore a continuity of the architectural language expressed at various spaces. At the Vaikunta Dham, spiritual literature of the society is displayed. The area has a perimeter that consists of deities and accommodates a space to meditate (Plate. 6.6.2-4). The deity frame is illuminated and usually a devotee would plug-in for a spiritual journey.

The ceiling has a tapestry; walls are plastered and painted with a light colour. The floor has a comfortable carpet to sit in a relaxed position. The colours have a soft tone and each colour complements each other to create a soothing atmosphere.

6.6.3   Prashant Ashram and Lao Tzu Meditation Centres

Plate. 6.6.3-1 illustrates the cosmic dome at Lao Tzu meditation centre (Swami Paramananda, 2009).

The Lao Tzu meditation centre has been designed to attract maximum cosmic energy to help the devotees in their quest for eternal peace and bliss. The dome (Plate. 6.6.3-1) attracts divine energy from the cosmos. Unlike the Prashant Ashram, the new centre consists of a cosmic dome. The SGAS has an emblem that depicts a circle where a bird is flying and the centre shows a shining sun.

The circle represents the Ultimate Reality - the circle's centre is everywhere and its circumference is nowhere. The sun radiates from the middle and represents the state of enlightenment of the Master whose rays of realization permeate everywhere. The bird is liberated and is enjoying the bliss of freedom (Swami Paramananda, 2009).
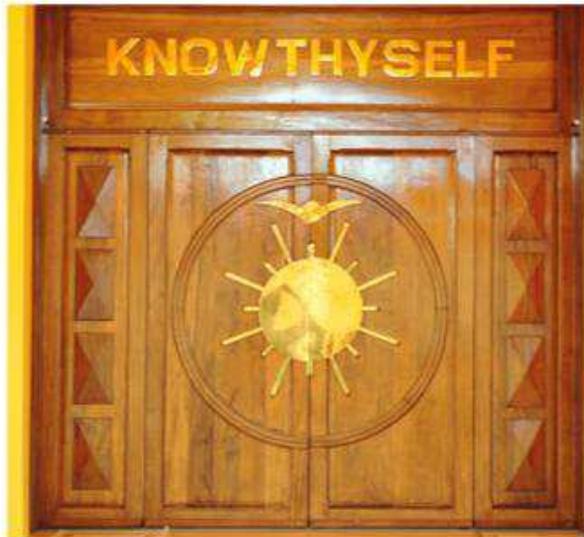
Plate. 6.6.3-2 illustrates the emblem on the entrance door (Swami Paramananda, 2009).

The emblem can be seen on the main entrance wooden door (Plate. 6.6.3-2) to the meditation hall. It is a welcoming element and its purpose is to make people aware of its importance. The entrance gates also have the same feature in a metallic structure. Moreover, the society's motto 'Know Thyself' is imprinted. It signifies that the meditation hall is a laboratory for self-knowledge – the inner self (Swami Paramananda,

Colours are chosen with care. They have a spiritual meaning. The ochre orange is the colour of robe worn by enlightened masters. The aim is to attain enlightenment; hence the ochre orange colour is utilized. But it also represents the shining sun; the colour of the aura. Yellow is the combining colour with orange. The exterior has warm colours that show the fire of one's drive to reach the ultimate. In contrast, the interior is soft. Carpets provide a warm feel. The pale colours of white and pink are conducive for meditation.

6.7   Socio-Cultural Aspects

6.7.1   Hare Krishna Temple

Plate. 6.7.1-1 illustrates the sharing of food in a community (Kribashne, 2010: 7).

The ISKCON Society is very active at the seat of the organization at the Hare Krishna Temple and outside it, to the community. They have a programme called Food for Life which basically includes the preparation of food at the institution to be served to the community people (Plate. 6.7.1-1). It forms part of the spiritual practice that is performed at ISKCON.

Not only food is shared but also education is shared via discourses by the members of the society to the community. Therefore, a socio-cultural interaction takes place. Bhakti Yoga is the main form of spiritual practice and it is based on mantra meditation – chanting of God's name.

Plate. 6.7.1-2 illustrates the sharing of knowledge and chanting of Krishna in a community (Kribashne, 2010: 7).

An African initiative has recently begun where community leaders welcome the members to address people by sharing the science of Krishna consciousness (Plate. 6.7.1-2). This education is aimed at any culture and race. The objective is to expand the social development and health care in the communities. The society is very active in educational institutions such as schools and universities. Satsangs, mantra meditation and distribution of food are organized on a regular basis. In addition, sales of books are crucial for the sharing and understanding of the deeper knowledge. The month of December is marked as a book marathon where devotees go all over the country to distribute books to the local community.

6.7.2   Sivananda International Cultural Centre

Apart from sharing divine knowledge in the centres, the Divine Life Society of South Africa is also dedicated to the upliftment of communities by imparting moral, educational and spiritual values. Over three hundred and fifty educational, health and other projects have been completed since 1974 till date. The society has also been involved in social service activities over the years. The task has been to alleviate the plight of the poor. Peace and skills training centres have been established in various parts of the province. Basic skills taught include sewing, computing and bead-making. Crèches have been built to accommodate children left orphaned by HIV/AIDS. Old age homes include dormitories for the disabled and aged people of the community. A school feeding scheme is in place and children of all races are daily provided with food. In addition, hydroponics gardening has been set up to raise funds for charitable

organizations. Health services are provided to ensure a better disciplined life which will enhance the spiritual development.

6.7.3   Prashant Ashram and Lao Tzu Meditation Centres

The SGAS is involved in many activities apart from conducting meditation sessions at the centres. The spiritual knowledge is shared and propagated locally and globally via books. Swami Paramananda has written fifty books out of which twenty one have already been published. The author explains that each book is a reflection and an invitation for readers to embark on the journey to self-realisation. His writing comes from 'intuition and subtle inspiration'. The Master's approach is to shed the spiritual essence rather than scholarly knowledge. Apart from local activities, the SGAS hosts activities overseas as well. Spiritual retreats (Plate. 6.7.3-1) are organized in the affiliates in the UK and Canada. Also, an interactive session takes place where participants question the Master for satisfying answers (Swami Paramananda, 2009).

Plate. 6.7.3-1 illustrates the spiritual retreat conducted in a small group in Canada (Swami Paramananda, 2010).

Usually a topic may be taken and its esoteric meaning may be explained profoundly. Workshops are organised over the country to promote self-education. This is aimed at implementing a self-empowering programme in the school curriculum so that the young adolescents are able to learn about their self. The teachings offer a scientific and pragmatic truth about the 'body, mind, soul, sexual energy, purpose of meditation, benefits of deep breathing, true significance of life and the purpose of life. The society is also active in organizing book exhibitions to reach a higher range of readers.

Plate. 6.7.3-2 illustrates the bi-annual publication (Swami Paramananda, 2010).

Bi-annual magazines (Plate. 6.7.3-2) are published and are usually sold door-to-door to people. The pilgrimage at the Maha Shivaratri (Plate. 6.7.3-3) is an opportunity for SGAS to actively participate and reach out to cultural groups and visitors from overseas and other backgrounds (Swami Paramananda, 2009).

Offering of food and drinks has become part of the event apart from helping pilgrims to understand the real mystical truth about the festival via video projections, book displays and other materials. Other activities include blood donation organized by the society to engage in the philanthropic task for the welfare of mankind.

Plate. 6.7.3-3 illustrates the event at Maha Shivaratri and the participation of SGAS to share lofty truths (Swami Paramananda, 2010).

Furthermore, Swami Paramananda participates in international conferences relating to the topic of spirituality and shares his vision for a better world. Youth outings (Plate. 6.7.3-4) are organized in nature for the young souls to appreciate the importance of a natural environment and its benefits on health. Yoga exercises also take place outdoors (Swami Paramananda, 2009).

Plate. 6.7.3-4 illustrates youth outreach in nature (Swami Paramananda, 2009).

6.8 Analysis of Data from Interviews

The interviews were carried at the Sivananda International Cultural Centre. The collected data is compared analytically in this section. The Sivananda International Cultural Centre has different blocks that accommodate different functions of the institution. Most blocks are single or double storeyed. Each block has its own shape and is different to the other. Some blocks reflect a sense of symmetry but overall the buildings seem scattered. The reason for that is because they were established in stages. The blocks also follow the slope of the site.

The site is located away from the CBD of Durban. It is situated in a remote area with less habitation amidst nature. The institution is accessed mostly by private transport. Public transport is not available in that area. However, most visitors arrive to the ashram by cars. Adequate parking has been provided in an open air tarred surface. Usually about eight hundred people attend the monthly activities. On a general note, the society welcomes people of all religion, caste and creed, although the founder and most devotees are from an Indian background. In spirituality, religion becomes of least importance when one is on the journey to seek God realization.

An immediate observation shows that the blocks are spread out. It was designed by Swami Sahajananda who made circulation easily accessible to the users. For instance, the prayer hall which is the main venue for mass gathering is situated not far away from the dining area facilities. The access routes are tarred or paved; some are accessed by stairs or ramps. Hence, the design of circulation routes is effective as it caters for all types of users, including the disabled. However, according to Respondent 3, a young person might find it easy to circulate around but the walk from a block to the other may be problematic for an old person (Appendix 1.4). The planning of all the spaces according to Respondent 1 is well thought of and it was through the saints and sages that the planning was put in place (Appendix 1.2). Respondent 2 states a deeper explanation that the planning would have been much successful if the blocks were designed simultaneously (Appendix 1.3). But the erection occurred in stages as the needs surfaced and new land was acquired. Despite the ad hoc system, each stage was planned nicely. Respondent 3 adds that the advantage of such a unique design is that during yoga camps the different age groups are spread out to carry out the various functions (Appendix 1.4). The prayer hall is designed to have two separate wings for

each gender: male and female. In Hinduism, each gender sits separately, yet the diagonal spread-out wings connect at the shrine.

Originally the site was a sugarcane field and it had to be cleared for construction during the years 1985-1986. But the existing trees were kept. Today, a Sivananda avenue has been created in between the trees so that they become part of the human interaction with nature. Since Swami Sahajananda was very close to nature he inculcated the same love in the devotees. On the other hand, flower plants were grown and today lovely gardens have been established with the indigenous species. The respondents stated that there are not any outdoor spiritual activities that take place in nature. All the activities are designed to occur inside the complex – some are semi-open with courtyards and verandahs. Satsangs and yoga camps occur monthly and all devotees from the fourteen branches of the society in the province join in. The yoga camp occurs in an open verandah-like space to practise proper breathing techniques with the circulation of fresh air from the vegetative surrounds. Apart from the yoga asanas, hiking is part of a spiritual and outdoor activity. Devotees chant while walking around in nature and karma yoga forms part of the spiritual activities.

Respondent 1 explains that landscaping plays an important role. It has a positive effect to its users (Appendix 1.2). The centre is located in a natural environment and overlooks the Indian Ocean. With vegetation in the surrounds, when one looks at natural landscape and water, a calming effect is created in our mind. Therefore the visitors feel the serenity, joy, peace and bliss in the whole environment. Benches are provided under the large trees for visitors to sit, relax and meditate.

All cultures and religions are embraced in the organization. However, socialisation happens at various levels. The inmates are able to learn what happens in the outside world when they talk to people who share the information. Hence the renunciates are able to keep themselves updated all the time especially on the economic world. Since there is currently a moral and spiritual degradation in the world, the inmates attempt to encourage people to use their spiritual literature to move up that spiritual decline. Other ways of socialisation exist in the form of the yoga camp activity where presentations are made. Respondent 2 says that the followers then gather in groups and answer questions that are pre-prepared (Appendix 1.3). So discussions occur mainly in this way. People communicate in a smaller group rather than in a large group. Socialisation also takes

place before the start of any function. The activities include breakfast and lunch during which people interact. But men and women have meals in separate dining rooms. Respondent 3 states that sports are a major activity where socialization occurs with the various codes of sports that exist (Appendix 1.4).

The complex was designed by Swami Sahajananda. The design is purely by the divine grace; the centre facing the ocean and the buildings facing north. The builders were always encouraged to use the Vastu principles. If a door was felt unsuitable for a position, Swami Sahajananda would ask for it to be placed in another area. Instructions were fully followed from him and were done accordingly. He stated that those instructions came from God himself as he used to pray for guidance when the building was unfolding. He was proceeding to follow his mind in full consciousness. An example is the Ganga Rani which began as a children's swimming pool and then was made larger. Water from the holy river Ganges in India was brought in and poured into the pool to consecrate it. Now it has become a shrine. Water is regularly imported from India and poured into the existing pools on the site. The architectural style is referred to as divine. The planning of the ashram occurred as its erection progressed in stages.

Aesthetics is of great importance in architecture. Spiritual architecture is enhanced by the beauty of textures, finishes, colours and symbolic attributes of elements. In SICC, the blocks are a composite of aesthetic qualities. The colours selected relates to the heavens. Swami Sahajananda acknowledged that these colours are seen when one reaches the heavens. By making use of these colours on the buildings, people can easily relate to the future. Architecturally, the buildings were designed to look pretty and colourful. The buildings are quite angular with the exception of the Guru Kripa which has arched aisles and the swimming pools have certain curves. Primary colours are mostly used. Blue symbolizes peace, yellow symbolizes love and green represents tranquillity. Besides, Swami Sahajananda liked green as it relates to the Divine Mother; green represents creativity and productivity. Greenness is referred to as the colour of the earth and nature. For example, the roofs are all green with wall tiles that are green and white. Green invokes calmness while blue indicates devotion.

Water is one of the main themes of the Divine Life Society. There are four water pools that signify the four holy rivers in the Indian mythology. They have been consecrated with the holy water Ganges and have a spiritual meaning. The Mother Ganga of water is

worshipped daily as the Divine Mother. Water is the base of life and existence. The Ganga water is symbolically seen as liberation. The devotees believe that God has come down on earth in the form of water to sustain humans. Hence, water is an integral part of the worship. Moreover, water has a positive impact on one's self. Its presence in the ashram generates the positive spiritual vibrations. The Shembe Following in South Africa also shares the same views on water. They also worship water and they use the Ganga pools to baptise their people. At a deeper level, water has a calming effect and is used as a therapy as one can see at Bhagirathi in the complex. It is also suitable for meditative practices.

As far as light is concerned, there are certain areas where light comes from outside, for example the use of skylights for natural light. Those areas were previously dark and had to incorporate skylight roofing. But it is not a symbolic feature as Respondent 1 advocates (Appendix 1.2). Otherwise, Respondent 2 confirms that the rest of the building is pretty well lit even if they do not have natural light (Appendix 1.3). But the environment was done to make it as natural as possible. Windows are sufficiently provided in all blocks and blinds are also utilized to control light. Skylight roofs create sufficient light in the areas. However air circulation has been problematic in some buildings. Yet extractors and air conditioners are utilized. Most of the time the blocks are locked when they are not in use and air is trapped. Some of the halls and the pools are large and these areas are very hot. One reason is that the buildings are wide - some are twenty five metres wide and it prevented the use of gables. Hence, light roof material had to be used. Tiles were excluded as the structure was not strong enough to carry the weight. With a metallic roof, the heat temperature on the inside increases. The cooling effect of the huge pools do not counter in any way, rather there is a lack of adequate cross ventilation in those places. Another problem that Respondent 3 points out is the lack of cross ventilation in the dining hall area – the building is designed to have an inner courtyard but that courtyard is enclosed, hence it traps the warm air inside the building (Appendix 1.4). Possibly if the windows are open most of the time during the day, better ventilation may be achieved but the chlorine in the pools is said to suffocate the air as well.

Cleanliness is very important in the maintenance of the ashram and has been emphasized by Swami Sahajananda who said that without it God is no way close. Cleanliness has a positive impact on the mind. Usually devotees from all the branches

gather to participate in maintaining the complex. Every Sunday devotees are in huge numbers to clean. Sometimes they come on Saturdays when an event occurs on Sunday. They clean up the entire place inside and outside to ensure the buildings are readily available for the functions.

The interior spaces are designed to achieve tranquil silence. A lot of halls were created so that people could meditate although no literature survey was carried out on how to do it prior to construction. An example is the Guru Kripa where the devotees would access the shrine via an arched area down an aisle. On either side huge spaces are allocated for meditation purposes. The areas are carpeted to allow comfortable postures and appropriate colours are selected. The sound of water and music also enhance the meditative practices. The idea was that meditating in groups and praying together would achieve better results than praying in a confined area alone or in a smaller group. The aim is to recharge the battery every time a devotee enters the spiritual environment. Silence is maintained in the entire complex with signs indicative of that all over so that devotees are engaged in meditation without any interruption. Spiritual vibration is created by chanting and the music played. The colours in the space also play an integral part in that invocation. The sound of the water helps a lot to achieve a tranquil atmosphere.

Respondent 3 was asked about his thoughts on the work of Tadao Ando and his works of the Temple on Water and the Church of Light that both create a harmonious environment with the use of natural element of water and light incorporated as part of the meditation process (Appendix 1.4). He replied that such a design may benefit the seekers in their meditation practice and can help to attain God realisation. He explains that water is the theme of the society and apart from the large inner pools; there are other pools on outside but in an enclosed or semi-enclosed structure. But the scenery can still be seen and that may inspire people in bringing them close to God.

Although this section analysed the data collected during interview sessions and compared, no theoretical background was indicated by the respondents. Therefore the following section will deal with a comparative critique of theoretical aspects in each of the case studies analysed.

6.9   Conclusion

The case studies analysed in this chapter provide a set of practical design guidelines that will be useful to consider when designing the meditation centre in Durban. The case studies were categorized into important aspects and analysed accordingly. A comparative analysis was also carried out in terms of functions, planning principles, orientation, environmental factors, socio-cultural aspects, symbolism and spiritual meaning of each particular design.

It has been observed that the case studies both in the South African and Mauritian context respond to the site and climatic conditions of the region. The SICC site is further away from the hustle bustle urban life since it promotes an existing tranquillity. The Hare Krishna Temple is located amidst a residential and commercial zone. In comparison, the sites in Mauritius are located away from an urban setting but instead have a low residential and religious surround.

The Hare Krishna Temple has symbolic features and spiritual meanings. It is based on the planning principles of Vastu Shastra. However, the SICC was built in stages as the need for functional accommodation was required. The Prashant Ashram in Mauritius was initially built to house a residential component at the second storey level but that design did not go forward, hence there has been loss of some design and spiritual aspects since the building has remained incomplete. On the other hand, the Lao Tzu meditation centre is designed as a single storey complex and includes the dome structure which is lacking in the Prashant ashram. The dome is significant to attract cosmic energies into the spiritual space.

The SICC has a critical regionalist approach as it is designed for the climatic conditions of the region and includes the various cultural groups. However, the Hare Krishna Temple has a traditional Indian architectural expression of temples. The structure is monumental. But the Hare Krishna temple can be referred to as a cosmic form and is expressed by a magnified scale for visual identity and represents a landmark in the area. This can be compared with the meditation centres in Mauritius as they have a subtle human scale factor. The buildings merge with the surrounding environment. The landscaping allows an experiential journey – this can relate to the approach of phenomenology. The concrete box-like structure reflects the tropical climatic approaches that cater for natural daylight and cross-ventilation.

The spatial arrangement is similar in the buildings in Mauritius whereas the SICC has an overall spread out spatial arrangement large enough to accommodate expansion in group sizes. Colours are applied to invoke spiritual meanings apart from aesthetical values. The spiritual journey is therefore accompanied by perceptual experiences.

The outcome of the case studies will be synthesized and interpreted for appropriate design guidelines for the design of the proposed meditation centre to conduct spiritual practices in Durban. The next chapter will analyse and discuss the research findings of each of the previous chapters.

CHAPTER 7

ANALYSIS AND DISCUSSION

7.1   Introduction

This chapter consists of an analysis of the research findings in the previous chapters in this document. The aim is to have a comprehensive understanding of the research in a summarised form. Important aspects of the literature review such as concepts and theories will be analysed, discussed and compared as well as the constituents of precedents and case studies. The chapter also involves a theoretical critique of the case studies.

7.2   Analysis and Discussion

A thorough research was carried out to understand the various qualities of architecture that would establish and enhance a spiritual environment. The phenomenology of place reveals that the experiential journey is essential in designing a sacred environment. A place is designed for the benefit of humans psychologically, visually, physically, socially and culturally. The spirit of place is created by the application of architectural elements that form the character and identity of that place (Norberg-Schulz, 1980: 8-15). Nature is highly influential in creating a holistic environment as it combines with architectural elements to evoke and invoke the essence of spirituality. Such an environment is conducive for spiritual practices that include meditation and yoga.

Identification with the environment has a rewarding psychological effect on human's behaviour and perceptions. Human experience can be enhanced by the use of tactile qualities in the form of sound, touch, smell and visual elements (Pallasmaa, 2005: 31-32). Colours have to be appropriately chosen so that they improve the essence of spirituality in the environment. Simplicity, order and proportion induce visual stability and enhance the spirit of place (Jodidio, 2007: 6). Cosmic qualities such as the interplay of light and shadow, and open-to-sky experiences may establish a harmonious atmosphere manifested by the application of sacred geometry and symbolism (Correa, 1980: 88-92). Nature is a pivotal element in bringing man closer to his own self spiritually and physically. Therefore man cannot be dissociated from the natural environment.

Spiritual practices are performed individually as well as in groups. Meditation techniques can be dynamic or passive. Various accommodations must be provided for

these functions that may occur indoor or outdoor in a natural landscape. Cultural and social engagement is important as meditation is not only associated with silence but also comprises activities where the human body, mind, heart and all faculties have to perform at their optimum best achieved by continuous spiritual practices. The latter require a continuous fresh air movement in space (Swami Paramananda, 2009). Proper orientation and a tranquil place are important in establishing a serene atmosphere. Apart from that, accessibility is critical for all users.

In contrast, critical regionalism deals with the identity of the space in its context (Frampton, 1981) rather than the experiential aspect of phenomenology. Cultural and natural elements influence the regionalist approach that considers the climatic factors of the site (Frampton, 2007: 116). It is less of a personal attribute but more of a regional consideration of factors that will create a holistic concept that is enforced by time and place. A cultural identity is sought in this doctrine in addressing the direct interaction with nature (Day, 2002: 147-148). Critical regionalism enhances the inner experiences with an appropriate built environment where a sacred relationship is formed between the user and the building in its context.

Spirituality is a universal doctrine and the spiritual environment becomes a hub of human interaction in space. That place becomes a sanctuary of positive energies in space. The principles of Vastu Shastra are beneficial as they are applied to conform to cosmic energies (Prasad, 2007: 17- 19). The research shows that these principles are applied in the zoning of appropriate functions in allocated cardinal directions so that there is harmony with the physical and metaphysical forces of the cosmos. The main aspect of this science is the use of the five natural elements: sky, air, fire, water and earth in an environment to create a balance with man and the material. The study reveals that these elements are representative of sound, sense of touch, shape, taste and sense of smell (Reddy, 1999: 14-16). Vastu Shastra therefore propagates the flow of positive energy and vibration in space if the principles are put in place. Symmetry is very important in sacred architecture that advocates the use of pure geometric shapes and forms as they induce the flow of positive energies in comparison to organic and angular forms that lose out energy in a place (Jain University, 2010). Symbolism is closely associated with numerology that is used in a meaningful way and is sourced from the human body which conceals mystical truths (Swami Paramananda, 2000: 139). The research shows that architectural qualities can be used to induce self-awareness when

people engage in a place. As such, people are able to master their thoughts, actions and behaviour. Therefore, a meditative and contemplative state becomes natural in the individual.

7.3   A Theoretical Critique of the Case Studies

Vastu Shastra principles are applied in the erection and planning stages of the Hare Krishna Temple. The building is an architectural landmark in the area; it is elevated and has a dominant scale in its context - creating a distinct and visual identity. There is a sense of poetry when the environment becomes visible. Heidegger stressed that a sense of belonging is achieved when humans identify themselves with a place. The sacred form and geometry make it an iconic element in the environment. The building engages with the environment. Day mentioned that beautiful places foster good health. Here the use of aesthetics and the use of natural elements in the landscape create a balance. The spirit of place is formed and experienced as written by Norberg-Schulz. The temple is designed with a sense of identity and orientation. The use of axis directly guides the visitor from the cardinal points towards the temple. The use of ramps facilitates that continual experience from an open air space to an enclosed praying area; from a public to a private domain. The temple is monumental with visual links – it is accessible from many points of entry for various functions. The temple design is symbolical and the intention was to create a landmark. These elements are found in Lynch's theory of place. There exist hierarchical patterns; from public and noisy to private and quiet. A holistic environment is established indoor and outdoor where social groups define the space for common use. The roof design caters for water run-off and clerestorey openings for natural ventilation indicate climatic responses undertaken by the architect. Yet, the design of the temple is not regionalist. It is an adopted traditional temple form from India but technology has been used to give it a contemporary look.

The Sivananda International Cultural Centre is perhaps the most interesting of the case studies as it relates to various elements of architecture. First, the design may be termed as critical regionalist. Although it was influenced by divine inspiration, the architecture responds to the site context and climatic conditions. The centre engages with the natural landscape. The slope and gable roofs indicate the typical local roof structures. However, certain materials had to be imported to match the requirements of the master's vision of

the centre. The aesthetic quality plays an important role with significant spiritual meaning. The colours convey a sense of identity and belonging. The textures, materials and colours are noticed in each block. The spaces are designed to accommodate a big number of visitors at one time. Natural light and ventilation are provided in each building although there are certain problems with heat trapped inside some buildings. The use of water has a cooling effect but is a sacred feature. Water is worshipped. The society welcomes people of all races and cultures. It is a place where a universal language is spoken. The blocks have a local architectural style. They are spread out and the users are easily confused as there is no hierarchy of space and function. Some buildings have courtyard spaces and can be compared with Correa's courtyard spaces. However, in SICC these spaces are used in the dining blocks and are beneficial for social interaction but the courtyard area is roofed causing air to be trapped inside. On the other hand, the experience inside the meditation area is breath-taking – pure silence. In comparison to Ando's minimalist works, the centre is highly colourful in the interior.

The climatic conditions are almost the same in Mauritius since it is a tropical island. But most buildings have concrete roofs designed to resist cyclonic weather, hence design follows aspects of critical regionalism. The meditation centres are box-like structures. They have a meditation hall to conduct spiritual practices. The spaces become crowded when there are group sessions. The intention was to build a structure with minimum cost. Verandahs are used for sheltering the users when they move from one place to the other. They also have environmental benefits, they provide shade and prevent direct sunlight and glare to the interior space. They allow cross ventilation in the building. There is not a definite architectural style in Mauritius. Yet the buildings are designed to respond to climatic conditions. The atmosphere is serene in a meditation centre – inside and outside, not only because of its architecture but more importantly because of the positive vibrations created by meditation Architecture can be an instrument by creating an experiential journey in the building.

7.4   Conclusion

This research has illustrated the various qualities of architecture and how they can be applied to create a holistic environment. The analysis and discussion section will be useful in setting up a theoretical and conceptual framework towards the design of a meditation centre. The buildings analysed have architectural elements that make the journey through them experiential and memorable. There is a human belonging to the place. These elements enhance the spiritual quality of the space as well as the well-being of the users. Hence, upon interacting in a serene environment the users are welcomed in a spiritual world as their sensory experience augment in space. A holistic atmosphere is existent and is effective for spiritual practice. The following chapter marks the conclusion of the research by examining the research questions posed in this study.

CHAPTER 8

CONCLUSION AND RECOMMENDATIONS

8.1 Introduction

This section analyses the outcomes of this research. The research questions will be tested against the literature review and studies of relevant building structures. The aim is to understand the extent to which research has been satisfying and if the study has the appropriate resources in terms of literature to formulate a brief that will be used to design a meditation centre.

8.2 Research Findings and Recommendations

The research findings provide comprehensive literature regarding the problems stated in this dissertation. The main question posed in this research was the determining architectural qualities that will be necessary in creating an environment conducive for spiritual practices. The objective was to source these qualities by conducting thorough studies on theories related to architecture to establish a contextual and critical understanding of these issues. First, the human senses have been deeply described and the sensory nature of experiences has been addressed by explaining how it contributes to the spirit of a place. The human body conceals energy sources named chakras which when activated during meditation practices may allow a continuous flow of energy leading to self-realisation. The five sensory faculties of touch, sight, hearing, taste and smell can be refined through spiritual practices. Thus, the senses are responsive and become aware to changes in the environment and in the human body. Such a transformation is effective when architectural elements in space manifest in creating experiential journeys. The notion of multi-sensory experiences is stated in the theory of phenomenology. The latter strongly advocates the interaction of the senses in terms of movement and action; allowing people to identify with the space they are in. Architectural qualities bring the users closer to things and also drive them within. Perceptions and experiences consolidate an orientation and a sense of security. That system of orientation developed in each culture creates an environmental image and identification influenced by elements of nature. The qualitative nature of places reveals that each component relates to another where space is experienced as a whole. Apart from the spatial qualities, the genius loci evoke a character that has an associated identity in relation to functional distributions. The quality of the spirit of place evokes and invokes an essence of spirituality that brings the human body, mind and soul to a

subtle state appropriate for contemplation and meditation. Therefore, it can be said that the human senses and experiences are part and parcel of the main requirements needed to establish a spiritual environment.

Furthermore, the social and cultural issues mentioned in the research questions have been studied by analysing the approach presented by critical regionalism which is associated with cultural value and climatic context of a region. Climatic and physical conditions of the environment influence the building and its users. The engagement of culture and nature can be used to create a poetic essence of place in the form of light and art. The user's experience involves a sense of touch in contrast to a visual sense. By adopting a universal approach, a sense of expression is created that involves the evolution of the being. Hence, ideas are generated to respond to the transformation of human experience. Consequently, spatial expression may invoke a new spirit in terms of scale and comfort. This theory states that architecture relates to the particularities of a place rather than a generic notion of place. The sense of place can be experienced in terms of images, sounds, materials and quality of light to create feeling and sensation. Such a place has a holistic character with a unique familiarity to the user. On the other hand, culture binds society together by allowing a living process where language and lifestyle give meaning to space. Architecture creates an opportunity for social interaction to occur in spaces that dictate the ways people meet. Spatial arrangements create distinct environments for various users with the use of architectural elements that inculcate a sense of peace.

At another level, cosmic qualities enhance the experience in space by using natural elements such as air, water, ether, fire and earth. These elements are depicted in aesthetic values of materials, textures and finishes. The application of these elements may create a silent and soul-living environment. Natural elements help in creating a sacred environment by ensuring a balance between man and the material. Sacred architecture involves geometric representation of a dynamic nature in forms, order and proportion. Geometrical forms have symbolic meanings and may create a sense of belonging culturally. Symbolism is also associated with numerology of spiritual nature that can be explored in architectural design to evoke a sense of mysticism. Therefore, it can be assumed that natural elements are of prime importance in consolidating the relationship between man and the environment. Architecture is a tool in transmitting

spiritual knowledge and values in the built form while architectural qualities can also bring the essence of spirituality in place.

Moreover, the issues to deal with in the hypothesis stated were mainly the physical, symbolic and tactile attributes of architecture. The aim was to research the architectural qualities that would invoke and evoke the essence of spirituality in place. The literature review carried out focussed on these aspects and the study was able to determine that space requires a physical element. As such, space becomes a place as its physical attributes allow it to be identifiable since it develops a character based on functional, spatial and environmental factors. Symbolism has been seen to be associated with tradition and culture. Symbolism has visual and physical attributes inducing a sense of orientation with the application of scale, form, material and aesthetics. The tactile qualities have various perceptual sensory imprints marked by the intensity of light and darkness, temperature and the aroma of material. Tactile sensitivity is highly seen in the doctrine of critical regionalism where the main emphasis is on culture, nature, climate, topography and context. The research has been able to determine the application of these architectural qualities in determining an appropriate environment for the spiritual practice.

Besides, the precedents and case studies revealed the application of architectural qualities to create the essence of spirituality. Concepts and theories were used as main design generators to create serene environments for spiritual practices. Natural landscaping is part and parcel of the holistic value of a place where not only soft landscaping but also hard landscaping is applied effectively to suit the needs of the users. On the whole, this dissertation consists of an in-depth study of architectural qualities that coexist and form a balance in creating the spirit of a place.

However, further studies may be required to investigate the cosmic relationship to earth. A dialogue has been mediated between man and his environment by revitalising the essence of spirituality which is a hidden phenomenon in space. Recommendations for a thorough study on sustainable issues relating to the social, economic and environmental aspects are made with a view to solidifying the current research. Access to spiritual workshops and possible engagement in spiritual activities may help to understand better the needs of the users and the issues inferred by the topic. In a more detailed research, the origin of spirituality and how it was brought in religion in prehistoric times might be

a future study where aspects of Gods and their relation to humans may be tackled in an aim to develop cosmic architecture. Further research may also look at devising a universal architecture that is accepted by all religions in an aim to propagate spirituality globally.

8.3   Conclusion

To conclude, this current document comprises studies that have been researched primarily to the optimum capabilities of the researcher whilst considering certain constraints that may have prevented the broader studies indicated. Throughout this dissertation, various aspects of architecture have been researched and analysed. These aspects are needed to create a spiritual environment towards establishing a meditation centre that will primarily accommodate spiritual practices. The spatial, functional, tactile, sensory and natural elements contribute in connecting man to his environment. These qualities will be used in the design stage complemented by the concepts and theories studied in the literature review. The research will be used to establish a design brief leading to the conception of the meditation centre.

CHAPTER 9

DEVELOPMENT OF THE BRIEF

9.1 Introduction

The design of a meditation centre sets out to provide an environment for spiritual seekers who are willing to learn and experiment. The environment must be one which is filled with positive energy, inspiring and conducive for spiritual practices. This can be achieved by providing a centre that contains all the necessary facilities that will help the spiritual aspirant to grow internally and externally. In that regard, related aspects of spiritual well-being will be assembled to facilitate the process of spiritual education. Special needs will be considered to establish an effective spiritual environment which has to be comfortable and flexible. The aim of the design will be to allow a personalization of space where there is a sense of ownership and an integration of the individuals with their surrounding environment. Human comfort is essential and can be increased by providing natural ventilation and natural lighting. Materials, textures and colours add to the enhancement of spaces. Free flowing spaces allow the users, educator and learners to have free access to the various dimensions in space. Hence the teaching and learning process of spirituality can become a blissful endeavour. The application of natural elements is an integral part of sacred architecture. The engagement of man into nature will bring about positive effects on the body, mind and soul. The different functions will be interlinked with landscaping elements to provide a continuous flow of the experience on site. Apart from the subtle energies of meditation and yoga techniques, the individuals are encouraged to actively participate in the various workshops that accommodate different forms of creative activities to develop their skills and their mind. Residential facilities are necessary during spiritual retreats. An educational component is important to teach and share spiritual disciplines that are aimed to complement existing academic curriculums whilst having a positive change in individuals in their quest for self-realisation.

9.2 Project Description

The meditation centre for spiritual practices in Chatsworth is identified as a place where people will engage in the various disciplines of spirituality taught and knowledge shared by a spiritual master. The aspirants will be guided by the spiritual master on their spiritual journey and be helped to understand their own experiences better.

Such a centre will cater primarily for a meditative place, training, administration, conferencing and residential facilities, based on the functions of the Satyam Gyanam Anandam Society (SGAS) that runs the Prashant Ashram and Lao Tzu Meditation Centre (Annex 1) in Mauritius. The centre will acknowledge the existing context and invite people from various cultures to participate in activities offered by the complex; such an example is seen in the Sivananda International Cultural Centre at La Mercy. Socio-cultural engagement is critical in establishing an identity for spiritual endeavours in Durban. The natural landscape and environmental conditions will play an important role in experiencing that spiritual journey.

The sacred qualities of architecture will be considered while designing the meditation centre. Planning principles will be informed by Vastu Shastra, as seen in Charles Correa's work in India. A subtle approach will be sought in this project in an aim to reveal the essence of identity in terms of place, culture, spiritual and nature while fulfilling the needs of the users through adequate spatial organisation enhanced by massing, perceptual attributes and symbolic meanings. The literature review will be influential in informing the design of the building.

The design will respond to climatic conditions while an architectural language will be established to bind the various functions together. Ordering elements will be applied functionally and symbolic references will be made towards certain archetypes principles. The Baha'i temple and the Hare Krishna Temple (Annex 1) have geometric forms that may be considered. Hierarchical order will be used to define the public and private areas. Acoustic elements, natural ventilation and daylight will be considered. The meditation centre will be accessible to serve the immediate Chatsworth community, and the greater community of Durban and its surrounding areas. The project aims at considering the theories discussed in the literature review, namely phenomenology, critical regionalism, sacred elements, natural elements, psychological and experiential attributes of space when man integrates the environment.

9.3   The Notional Client

9.3.1   The Client's Organisation

The Satyam Gyanam Anandam Society (SGAS) is a universal spiritual organization located in the island of Mauritius. The society's objective is to provide opportunities and guidance to seekers to discover their inner self through the science of meditation. The SGAS is an NGO that was founded by Swami Paramananda in 1988. Swami Paramananda is a spiritual Master who has attained enlightenment and is imparting spiritual knowledge to individuals, not only in Mauritius but also in Europe, Asia and America. SGAS has affiliates in UK and Canada. The society is very much active on the local soil and international forums. There are two meditation centres in Mauritius already. The vision of the master is a global mind transformation, where the entire world needs to participate. The society wishes to extend its affiliation in South Africa where the culture is very rich. Already, there are an increasing number of seekers in the South Africa. Swami Paramananda is the guide and friend on that journey. A new meditation centre is required to propagate spirituality and bring about a radical change in the mindset individually, locally and globally (Swami Paramananda, 2009). The society is self-funded by the activities it dispenses and is responsible for the on-going management of the meditation centre.

9.3.2   The Client's Requirements

The design of a meditation centre should comply with the aims and objectives of the client especially on the concentration of human evolution spiritually. The proposed centre is referred as a laboratory where a proper infrastructure and environment is designed to attract maximum cosmic energy to aid seekers in their quest for eternal peace and bliss. The centre should cater for about five hundred spiritual aspirants, spiritual head, administrative staff, library staff, educators, caretaker and security officials. The main component is the meditation hall where mass meditation practices will take place. Meditation rooms and yoga areas are also provided. In addition, kitchen areas and library resource centre form part of the practice. Residential units are required for disciples and guests. An educational facility will be attached to the centre to teach

spirituality at an academic level for implementation in academic institutions and work places.

9.3.3 Detailed Client Brief

The functional and accommodation requirements of the meditation centre have been primarily and briefly been suggested by the members of the committee of the society. Further research has been carried out to obtain detailed specifications through sources such as analysis of precedents, case studies, the author's personal experience as a spiritual aspirant and library sources such as specification manuals. The design, planning and functional aspects are influenced by the Indian architectural principles of Vastu Shastra.

The main zoning of the building is described below:

The meditation hall: the meditation hall is the largest open space in the centre and accommodates a large number of spiritual seekers. It is the main indoor space for group meditation. It consists of the seat of the spiritual head. Shoe racks and an attendance register are located at the entrance. Ablutions are located in close proximity to serve the visitors.

Educational facilities: an educational component exists on site to offer training sessions to educators and seminars are held for students to participate. The aim is to share the spiritual knowledge to the young generation. A seminar area is necessary to host local and international debates on related issues of spirituality. A classroom is required for teaching and learning purposes.

Creative art workshops: the centre incorporates workshops for creative activities like painting and music and dancing. A music rehearsal room is needed for participants to learn singing and indulge in its practice. These activities will aid to develop the creative side of the mind which is important in meditation. Tai Chi is also important and form part of the active system of the human body. Meditation brings a balance between the active and inertia states. Water therapy and the symbolic process of cleansing are part of the meditation techniques taught. A gymnasium will be provided as well.

Administration area: the meditation centre is supported by administrative staff with a library and archive available for knowledge of spiritual literature. The administrative unit consists of meeting and board rooms for discussion of works and management issues. A cashier and adherent offices are required for financial purposes.

Commercial Activities: A bookshop is a medium to spread the spiritual knowledge to the wider community.

Cultural Amenities: the centre also caters for the various cultures and creates a universal space for those people. Cultural groups can use the educational facility and other facilities.

Support Facilities: the centre incorporates an eating facility – a cafeteria and ablutions.

Outdoor natural landscape: it is important to have green areas to practise certain meditation techniques in the natural environment. Fresh air, breezes, green landscape, water and the earth help to build a spiritual and holistic environment. Symbolically these elements represent peace, tranquillity and purity. Therapies are essential and serve as a cleansing process in meditation. They can either be practised inside a hall or in the outdoor natural space. An organic garden will be establish on site and will serve the centre primarily.

Vastu Shastra Principles: Vastu Shastra consists of five elements: earth, water, air, fire and space. Spaces are designed to have fields of energy. A square grid system is preferred for spiritual practice. The neutral space is a sacred space where no major construction must occur in that area and it should be open to the sky. The north east corner is dedicated for the shrine, the south east for cooking, the southwest for residential and northwest for storage. The north side is strongly energetic and vibrant while the east is an edge of purification, in contrast the south is a dormant area. The south west is the highest point and slopes down to the east and north. An amorphous Mandala of even squares is ideal for spiritual places. The northeast alignment is important as it maximises light. Small plants is preferred on north and east sides to allow least obstruction while the west and south edges can have large trees for shading and cooling purposes. Water bodies must be placed in the north and northeast.

In addition to the primary requirements the building will also include various supplementary facilities as listed below:

Visitors' accommodation: local and foreign participants or spiritual leaders, A quarter for the spiritual head is provided for him to conduct spiritual practice and a caretaker's accommodation is required.

Services and maintenance facilities: service spaces comprise of cleaners stores, ablutions, plant rooms, transformer room, meter room, refuse yards and air conditioning plant room.

Parking: provision for basement parking will be made together with the provision of parking bays for the disabled.

The meditation centre will be funded by the SGAS through income generating activities with some functions of the centre. Funding will be sources primarily from income generating facilities such as spiritual retreats, adherent fees, sales of books and magazines written and published by the society.

The centre provides an environment conducive for spiritual practice. There are various factors that influence the quality of a meditative environment. The spaces of the building promote a sense of comfort, informality and flexibility of use. This is achieved by the appropriate use of colour, texture and furnishings. The environment is further enhanced by the inclusion of natural light and ventilation with comfortable outdoor spaces within the centre.

The main objective is to design a meditation centre relevant to its context with spaces of appropriate size and function to accommodate the ideal group sizes with an additional ability to adapt to fluctuations of group sizes and changes.

9.4   Schedule of Accommodation

The schedule of accommodation (Table. 9.4-1) is a list that consists of the type of activity or function of the space, the size of the spaces and the general requirements of each space. These requirements were gathered from empirical data of case studies, architect's data for sizes and dimensions required for specific functions and some information was retrieved from other architectural thesis.

Room Name & Activity	Description & Configuration	No. of People	Amount	Total Area
Main Building				
Meditation Hall	Open plan meditation space to accommodate 250-500 spiritual aspirants, natural light and ventilation with adequate acoustics. The area includes a footwear area at entrance of meditation hall. The central axis from the main entrance of hall leads to seat of the spiritual Master who presides for discourses by sharing spiritual knowledge and meditation techniques.	250-500		1139 m²
Ablutions (Appendix 2.1)	Male: 4 WC, 2 basins, 2 urinals. Female: 7 WC, 4 basins. Paraplegic		2 x 35 m²	73 m²
Sub Total				**1212 m²**
Administration/ Educational/Residential Block				
Ground Level				
Ablutions (Appendix 2.1)	Male: 4 WC, 2 basins, 2 urinals. Female: 7 WC, 4 basins.			61 m²
Master's Consultation Area	Consultation area with spiritual master. The space must include the provision of a waiting area.			20 m²
Waiting Area	Area where spiritual seekers will wait in order to meet the spiritual Master			22 m²

Boardroom	Room to accommodate about 12 people for major presentation and discussion.			27 m²
Refreshment Area	Service counter and serving with formal seating, small and large round tables			91 m²
Kitchen	Easy access to deliveries, no structural obstructions, floor drains, stainless steel worktops and work surfaces, well lit and naturally ventilated. Area consists of cooking, washing and preparation located to allow correct flow of spaces with access to serving area.			30 m²
Kitchen Storage Cleaning Store	Deep freeze, cold and dry rooms, open shelving. Storage of Cleaning Supplies.			14 m²
Bin Area	Temporary storage of bins			9 m²
Administration Offices	Open plan offices for human resource and financials of the organization.			45 m²
Workshop Studio	Workshops with work benches and work tables. Access to outdoor open landscape area. Used for painting and creative arts			46 m²
Bookshop	Display of spiritual magazines, books and DVDs on shelves. Room must be spacious and must include a counter for cashier.			33 m²
Seminar Room	Venue to conduct seminars and accessible to the visitors. Single large open space to be used by all	90		91 m²

	age groups for formal and informal events.		
Class Room	Lecture area mainly for small groups and students	15	34 m²
Store	Storage of administrative work and archives.		13 m²
Sub Total			**536 m²**
First Level			
Library/Archives	Reference material with space for librarian office and circulation, reading stations and computer stations. Spaces also include security check point, reception desk, book loans and bag store for the reference library, counters in and out, copying area.		87 m²
Recording Room	Acoustically designed room for recording of music, songs, interviews by the organizing members of the society.		31 m²
Control Room	Located in between the music rehearsal studio and recording room, supervising both activities for digital control.		23 m²
Music Rehearsal Studio	Acoustically insulated. Music room located close to dancing area.		100 m²
Ablutions (Appendix 2.1)	Male: 4 WC, 2 basins, 2 urinals. Female: 7 WC, 4 basins.		61 m²
Gymnasium	A mini gym area to activate and strengthen the physical body. It consists of general and special		144 m²

	training stations. The room must be well lit and have cross ventilation. It will overlook courtyard spaces.			
Showers	Small cubicles for rather gender to have shower especially after exercising.			34 m²
Tai Chi Class	Large open space area for the practice of tai chi in an indoor/ environment. The inner space must be well lit and have natural ventilation. The outdoor space must overlook courtyard spaces.			91 m²
Change Room	Changing area must be adjacent to tai chi studio			9 m²
Sub Total				**580 m²**
Second Level				
Visitors' Accommodation	Provision of single units for disciples during spiritual retreats, guests or delegates 0r spiritual leaders. Accommodation also will be provided for a caretaker and for the spiritual Master.	2 x 16 units		424 m²
Sub Total				**424 m²**
Sub Total				**2752 m²**
Circulation		25%		**688**
Basement Parking	Staff and visitors parking with ramps for vehicular and pedestrian access. Elevator and stairs lead to the main public entrance. Disabled bays will be provided.	130 bays Min. 20 bays/ 100 m²		4248 m²

Mechanical Plant Room	Room to be noise insulated. Large open sub-divisible space to suit the particular requirements of each function.			50 m²
Transformer/ Meter Room	Room to accommodate all electrical services			50 m²
Total				**7100 m²**

Table. 9.4-1 illustrates the schedule of accommodation for the proposed meditation centre (Author's drawing, 2011).

After having established the requirements of the client and the accommodation for the various functions, it is important to establish a list of site criteria that will lead to the selection of an appropriate site. This exercise is carried out in the following chapter.

CHAPTER 10

SITE SELECTION, SURVEY AND ANALYSIS

10.1   Site Selection Criteria

The site selected for the proposed meditation centre will have to meet the practical, spiritual and symbolic needs of the users. The site must reflect a comprehensive framework whereby the users can easily access the place and it should be integrated in the broader urban context of the area and its surroundings. The site must bring different cultures together. The site criteria have been determined from the requirements sourced from other theses, interviews of head of spiritual organisations and important considerations from the theoretical contents of the literature review in this dissertation. Below are some aspects are need to be considered:

Location: the site should be a destination rather than a transition. It should be a site that that offers opportunities for development that will benefit the micro and macro context. The immediate area should be lively and not too remote.

Accessibility: it should be easy to access the site from various points through numerous modes of transportation. It should be accessible to the larger community by private and public transport. As such, the site should not be far from a major urban hub. Transport accessibility is one of the major concerns. In the case study, access was only by car. Hence this deprives access to people who are not able to afford that mode of transport. Spirituality is universal and the meditation centre is erected for the benefits of users of all religions and gender.

Visibility: the site needs to have a visual prominence so that it can be easily identified in its context. It should be distinct offering strong links to its context from various angles.

Topography: the site must have a natural landscape or the latter must be suitable to be implanted in the context to enhance the existing fabric. Breathing is a common meditation technique. With a mass of people meditation, an adequate amount of fresh air is required to flush out the toxins exhale by breathing out. Here vegetation in proximity to the building is very effective.

Socio-cultural: the area should embrace social and cultural groups in the area. It should primarily serve the micro context and also a macro context.

Natural Environment: the site should offer an opportunity to enhance the natural ecosystem while aiding the practice of spirituality. From the research analysis reveals

that a spiritual architecture is more likely to occur in a region where natural landscape is provided.

Size: the size should be adequate for the new development and sufficient to accommodate parking.

Noise: noise is a major factor in every site. However, a quiet environment is suitable for meditation purposes. A busy and noisy atmosphere is not an appropriate location for spiritual practices to take place.

10.2   Potential Sites

Potential sites (Figure. 10.2-1) have been identified based on the formulated site criteria. The approach was to select sites offers opportunities for potential development of a meditation centre. Four possible sites were selected and they are namely: the UKZN precinct in Durban (Site A), the Medwood Gardens in the CBD (Site B), the Old Pavilion Site at the Durban beachfront (Site C) and the Chatsworth Town Centre (Site D).
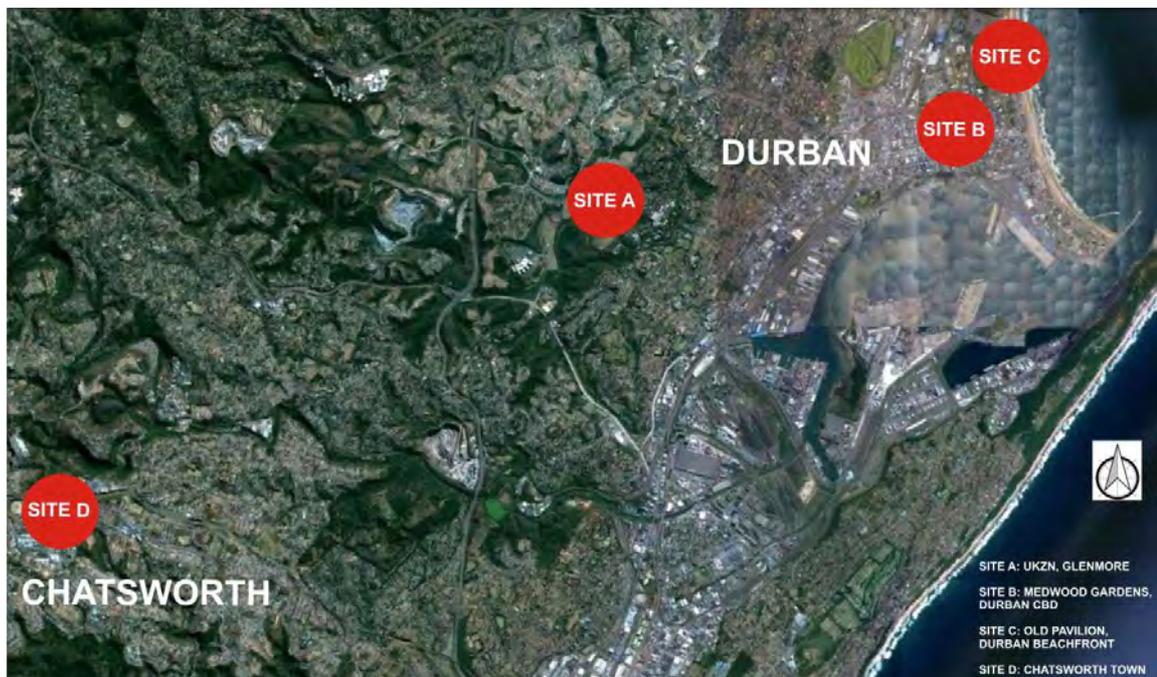
Figure. 10.2-1 illustrates the macro-context with potential sites in the Durban and Chatsworth (Author's drawing, 2011).

Figure. 10.2.1-1 illustrates the site A in the UKZN precinct (Author's drawing, 2011).

An urban analysis (Figure. 10.2.1-1) shows that the site is located in an educational zone in the precinct of the University of KwaZulu Natal. The site is located behind the existing Old Mutual Sports Hall and the Innovation centre. The site is a tranquil green forested region on a hilly land. The site slopes down and is not visible from the Rick Turner road. There is a direct linkage to the University premises. In such a location the prime target will be students. Meditation classes can be part of a spiritual education. The site is further analyzed below in Table. 10.2.1-1.

Location	The site is located in the university precinct. The area has low density population.
Accessibility	It is accessed by private transport mainly and taxi but it is inaccessible by bus and train.
Visibility	The site has no visual prominence from the street level.
Topography	The land is steep at a gradient of one in six.
Natural Environment	The site is a natural area with existing trees offering a peaceful, shady and airy environment.

Socio-cultural	The area is frequented by sport practitioners at the Old Mutual Sports Hall and delegates to the Innovation Centre. A socio-cultural integration is likely to occur. The users are mostly students.
Size	The site is an open space green land, sufficient for the proposed design and future expansion. The parking space can be shared with the existing parking lot at the Old Mutual Sports Hall.
Noise	Noise is low as the site is in nature, away from traffic noise at street level.
Drawbacks	The site is less accessible resulting to a specific group to use the facility. It does not have a visual identity from the street. Its location makes it likely to be used on weekends mainly. Fewer users may actually use the facility during weekdays. The ecological system will be disrupted during the process of a possible development of the site.

Table. 10.2.1-1 illustrates the analysis of site A against the site criteria (Author's drawing, 2011).

10.2.2 Site B – Medwood Gardens, Durban CBD

The site (Figure. 10.2.2-1) is one of the few parks in the inner city. Adjacent to the site is an existing old swimming pool which is no longer in use. The intention is to redevelop that space with the park. The urban context is important in that it allows a cross pollination of social and cultural groups. The city centre is the destination routes of many travelers, if not a place of transit. The area is vibrant with movement and activities. The centre aims to accommodate the immediate office people while also attracting all cultural groups. The site is located in a commercial area with trade and offices. It is surrounded by civil buildings such as the Post Office and the City Hall. The site is bound by high traffic roads of West Street and Pine Street. The free market on the west and workshop on the north are a hub for pedestrian movement and commercial activities. The site is further analyzed in Table 10.2.2-1.
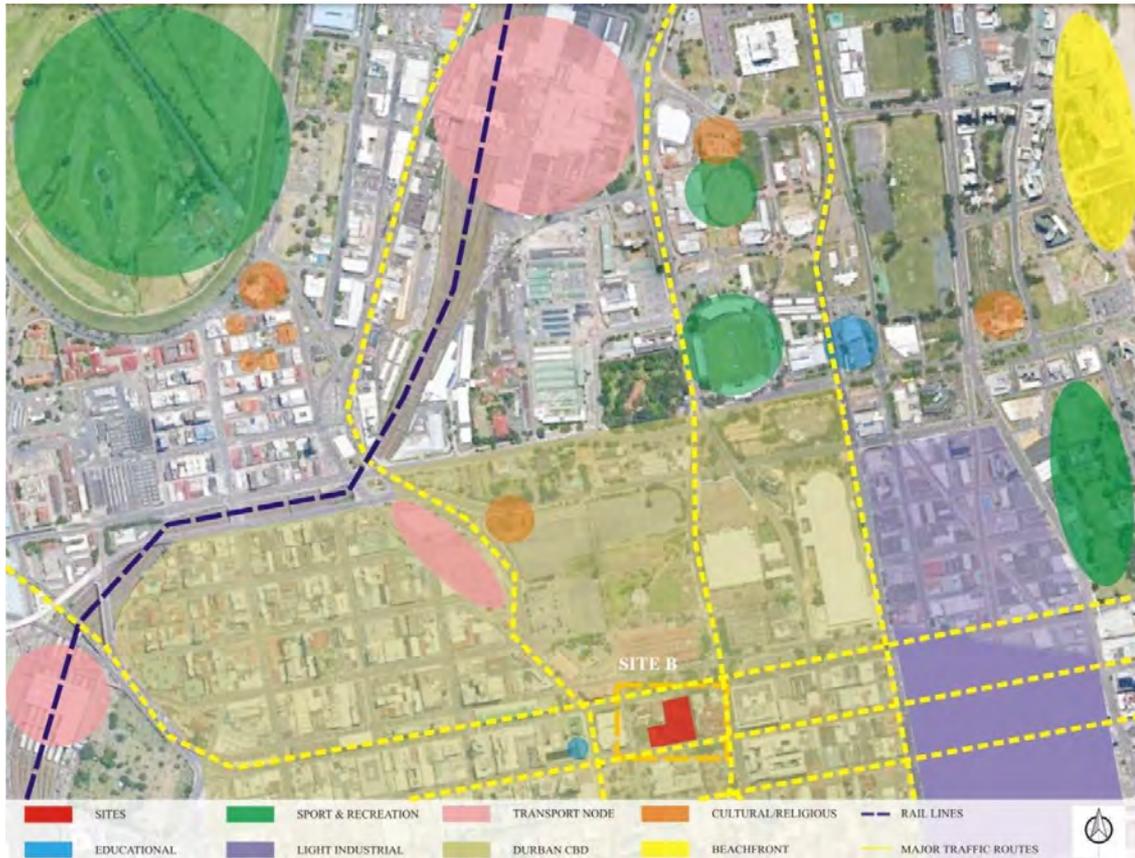
Figure. 10.2.2-1 illustrates the site B at Medwood Gardens in Durban CBD (Author's drawing, 2011).

Location	The site is located in Durban CBD. It comprises of an existing dilapidated old swimming pool and the Medwood gardens.
Accessibility	The site is accessible by all modes of public transport, within a walking distance from the Durban Railway Station and Berea Station.
Visibility	The site is centrally located in the city and has visual prominence from three sides: the existing roads, the garden and the free market.
Topography	The site is continuously flat at the gardens and swimming pool area.
Natural Environment	The site consists of an existing city garden that will aid in enhancing the natural landscape.

Socio-cultural	The neighbouring buildings are a church on the western edge, a commercial mall – the workshop on the north, the city hall, the Indian consulate bureau, the Shembe site in the Centrum and commercial buildings in the city. There are diverse social and cultural groups in the city. The new proposal may become a hub to accommodate these people to conduct spiritual practice.
Size	The area is sufficient for the new development. The garden offers a soft edge to the site. A pedestrian linkage system will be most effective.
Noise	The site is bounded by heavy traffic routes – vehicular and pedestrian.
Drawbacks	The site is exposed to adjacent noises and need to be resolved architecturally. Parking spaces are scarce on site. There is the juxtaposition between noisy and quiet zones that may result in a conflict in terms of functions.

Table. 10.2.2-1 illustrates the analysis of site B against the site criteria (Author's drawing, 2011).

10.2.3 Site C – Old Pavilion Site, Durban Beachfront

The Old Pavilion site (Figure. 10.2.3-1) is located at the edge of the beachfront. It is the termination of Old fort road which is a major transport link from the inner-city. The site has a multiple of activities around it. It has a cultural context with the Durban Jewish centre on the western block, a temple in Somseu road, the Shembe in the Centrum site, place of worship for Muslims in the southern block. The beachfront is marked by commercial, residential and recreational activities. The site is elevated from the southwest corner and is visible from that perspective while along the beachfront it is an open frame that offers view to the Upper Berea. The site has direct link to the major transport node of the Durban station. Further analysis is shown in Table 10.2.3-1.
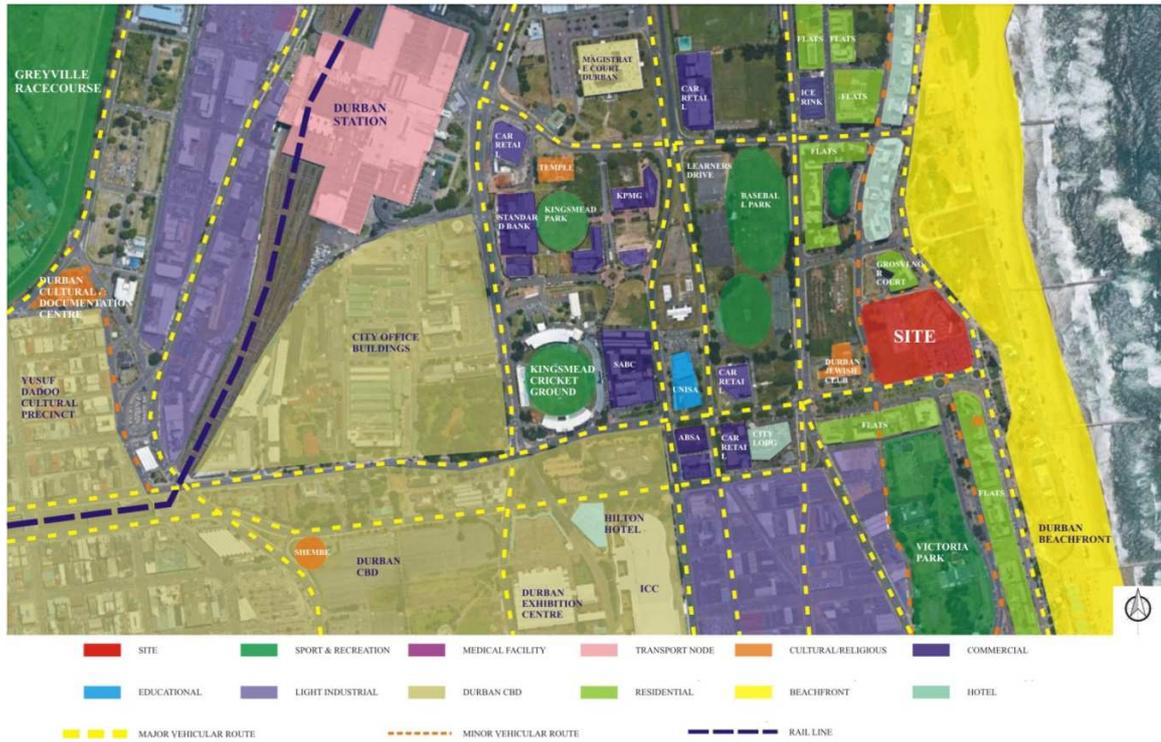
Figure. 10.2.3-1 illustrates the site C at Old Pavilion site at Durban beachfront (Author's drawing, 2011).

Location	It is found adjacent to the Durban beachfront. It is located along the main beach road in a residential, commercial and hotel zone. The site is a destination and ideally suited for a relaxed environment.
Accessibility	The site is accessed by private and public modes of transport. The Durban station is within a walking distance from the site.
Visibility	There is visual prominence from the site as the land is viewed from all sides of the roads and it offers views to the beach and ocean.
Topography	The site is mostly flat and has an existing parking lot with a vast green land. There is a bank on the west and southwest edges.
Natural Environment	The existing natural landscape will be enhanced with the development of the new proposal. The aim is to preserve the ecological system.

Socio-cultural	The area is well frequented by local and foreign visitors. Different social groups ranging from youngsters to old age people visit the area. The beachfront is a hub for cultural integration.
Size	The area large is enough for current development and future expansion; the existing parking area can be used effectively.
Noise	The site is bounded by roads which have a noise level that is comparatively less than in the central CBD.
Drawbacks	Noise level is existent on the periphery of the site and should be resolved architecturally. The site is exposed to direct climatic conditions such as heavy winds.

Table. 10.2.3-1 illustrates the analysis of site C against the site criteria (Author's drawing, 2011).

10.2.4 Site D – Chatsworth Town Centre

The site (Figure. 10.2.4-1) is located in Chatsworth Town Centre. The Chatsworth Centre Shopping Complex on the western block of the site along Main Street is the biggest and most substantial development in the Town Centre. Other commercial facilities include the Chatsworth Town Plaza, Chatsworth Main Shopping Centre and Ayesha Centre along Joyhurst Street. The western and southern zones are mainly commercial and retail outlets. Duplexes and residential districts are to the southwest of the area. There is a layering system of public into private. The centre core is noisy and more public, and gets quieter and more private on the periphery. The strong infrastructure surrounding the site consists of medical, legal, religious and police facilities. Apart from the efficient transport system and nearby sporting facilities, there are a lot of educational facilities in the area: primary and secondary schools. The religious amenities include a Masjid, Church and Temple in the area. The site is directly linked to transport nodes in the area comprising of private, public and pedestrian modes of circulation. The site is further analyzed in Table 10.2.4-1.
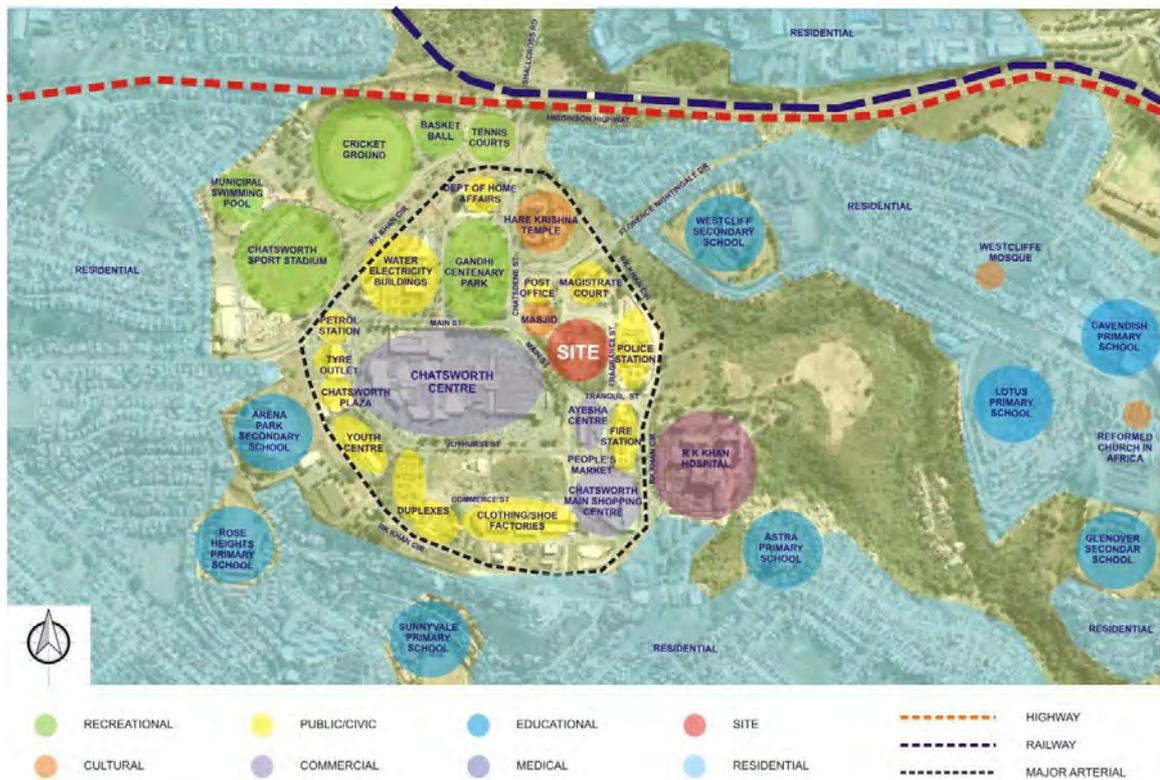
Figure. 10.2.4-1 illustrates the site D at Chatsworth Town Centre (Author's drawing, 2011).

Location	The site is located in Chatsworth Town Centre. It has an urban context highly influenced by an activity and spiritual hub.
Accessibility	The site is accessible by all modes of public transport: bus, taxi, private transport with the railway station close by.
Visibility	The site is set on an elevated land from its surrounding roads. It has views to the outer and surrounding context. It is easily seen from various points of location.
Topography	The site has a flat surface on its contoured land. The sides of the plot have major wild vegetation such as bushes and trees forming berm-like boundaries. The inner space is devoid of trees but instead has neglected grassland.
Natural Environment	The site offers an opportunity for development while enhancing its existing natural landscape.

Socio-cultural	The site is located in a culturally rich region of spirituality.
Size	The area is sufficient for the new development. The open green space offers a soft fabric to the active hub in the region.
Noise	The site is bounded by roads on all edges. The western edge is noisy.
Drawbacks	The site is exposed to adjacent noises and need to be resolved architecturally. Wild vegetation is a nuisance and must be replaced by soft landscaping areas.

Table. 10.2.4-1 illustrates the analysis of site D against the site criteria (Author's drawing, 2011).

10.2.5 Evaluation of Alternative Sites and Suitability of Selected Site

SITE	A	B	C	D
Location	3	3	3	4
Accessibility	2	4	3	4
Visibility	2	3	4	4
Topography	3	3	3	3
Natural Environment	4	2	3	3
Socio-cultural	2	3	3	4
Size	3	2	4	4
Noise	4	1	2	2
Total	**23**	**21**	**25**	**28**
LEGEND				
4 = Excellent; 3 = Good; 2 = Adequate; 1 = Poor				

Table. 10.2.5-1 illustrates the evaluation of all sites against the site criteria (Author's drawing, 2011).

The four different sites were analyzed according to the site criteria provided. An evaluation was thereafter carried out and Site D responds to most of the requirements set out. The University site is less accessible to the larger community and is not visually prominent although it has a quiet natural environment. Medwood Gardens site is located in the Central CBD and is affected by heavy noise pollution although it is accessible to the general public. The Old Pavilion site is accessible to the wider community of Durban and its surrounds via public and private modes of transport. However, it does not have an immediate community to cater for although it has strong accessibility routes in and out of the CBD. In contrast, the site in the Chatsworth Town Centre has a rich cultural and spiritual community. The site has an efficient transport system. The aim is to invite primarily the living community in the area to partake in spiritual practices and also doors are open for any individual with any religion. Spiritual practices are universal and so are its users – the meditation centre is not religion-based. Apart from cultural groups, there are a lot of social activities that occur in the region in terms of the area's educational, commercial, residential and recreational facilities that are in place. The educational component is a very important aspect of the centre where emphasis is laid on spreading the spiritual knowledge with adolescents since spiritual practice should begin at that age. The centre will therefore provide facilities to accommodate the working and student culture. The students will mainly use the centre during the weekdays where a specific curriculum will be devised for them and it could be part of their academic curriculum as well. The working community will mostly benefit during weekends when they have the required free time for spiritual practices.

In addition, there is a need for a meditation centre in the area. As per an analysis, all existing meditation centres in the precinct are further away from the central districts. Most of them are located in remote areas and are accessible to a specific few. There is not any meditation centre in Chatsworth although the later has a high cultural community. It is a lack of facility in the area and there is therefore an opportunity to explore by designing a meditation centre that integrates with the immediate community and offer access to people to participate in spiritual practices even from the wider community. There is a need to reach each interested individuals in spirituality.

The site offers a balance between the natural and built environment. It has a natural serenity with the existing green land and also engages in an urban context. There is an opportunity to enhance the existing natural and urban fabric. In contrast, a natural green

forest land will suffer ecological imbalance with a new built structure and an inner-city site is too noisy for spiritual practice. Meditation is the balance between the material and immaterial worlds. It is found in a spiritual hub in the heart of an activated Town Centre.

The site offers panoramic views to the surrounding context and outdoor scenery can enhance certain meditation techniques. The sea breeze and winds may enhance the spiritual practices. The location is promising since it is found at a nodal point and is visually prominent. On the other hand, the site is also affected by noise from adjacent roads. However the noise level reduces as one proceeds to the inner centre of the site. These issues will be architecturally resolved in the design stage. Noise level can be reduced by the application of buffers via soft and hard edges.

The challenge is to transform certain drawbacks and use them effectively architecturally. One cannot isolate oneself completely from the environment. The human mind needs an interaction with the world as well. There are three main states in life: activity, inertia and the balance of the two, which is meditation. The latter revolves around acceptance and transcendence. Balance is critical, too much of something makes someone dull and too little of it equally makes the person dull as well. Life is made up of duality: good and bad, light and dark. However, spirituality accepts both kinds of nature and through the process one is able to discriminate and look at the issues as a whole. With all the positive aspects mentioned, the site is recommended for development of a meditation centre for spiritual practice.

10.3   Background Overview of Selected Site

Chatsworth is a hub to which all the arteries are attached. Its main draw card is the Hare Krishna temple which is an established spiritual node in the area. The area being a rich cultural and Indian community links the other Indian places of settlement in the KwaZulu Natal province.

During the British colonial period, Indian labourers were brought in from the India to South Africa (Figure. 10.3-1) to work in the cane fields in 1860 mainly in the Natal province on the east coast which housed the harbour. About the expiry of their contracts, two-thirds of the workers stayed in the country and settled mostly in the

province with few moving to the Transvaal. The majority settled in Natal (Figure. 10.3-2) from Stanger in the North to Umzinto in the South (Govender, 1993: 26). Chatsworth is a central core along the line of settlements from the north to the south strip along KwaZulu Natal (Figure. 10.3-3). But its linkages links further to Escourt, Ladysmith, Harrismith and further up to Johannesburg on a macro level. The main access point is from the freeway linking all the regions to Chatsworth.
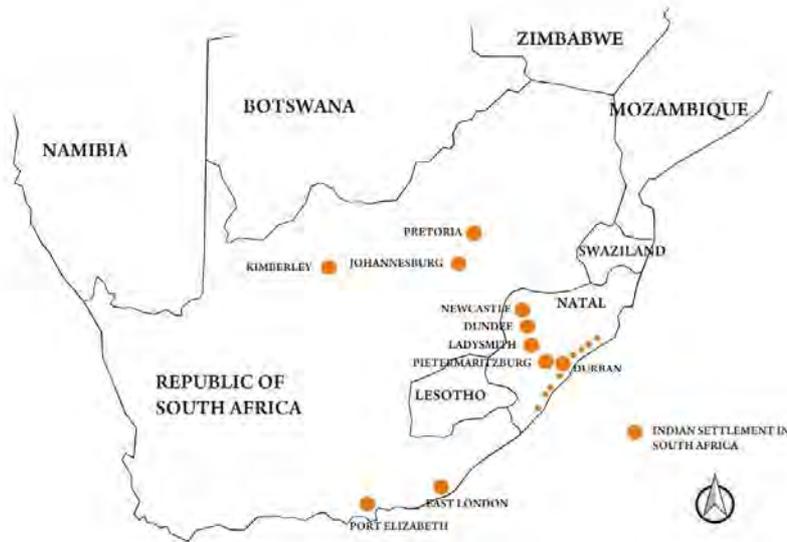
Figure. 10.3-1 illustrates a map of the South Africa revealing the main locations of Indian settlements (Govender, 1993: 26).
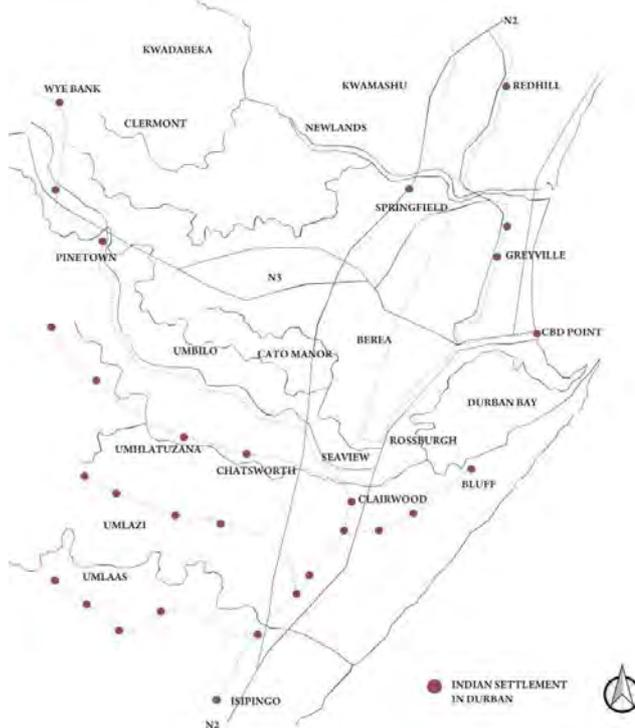
Figure. 10.3-2 illustrates a map of the Durban revealing the Indian settlements (Govender, 1993: 26).

INDIAN SETTLEMENT IN
NATAL COASTAL STRIP
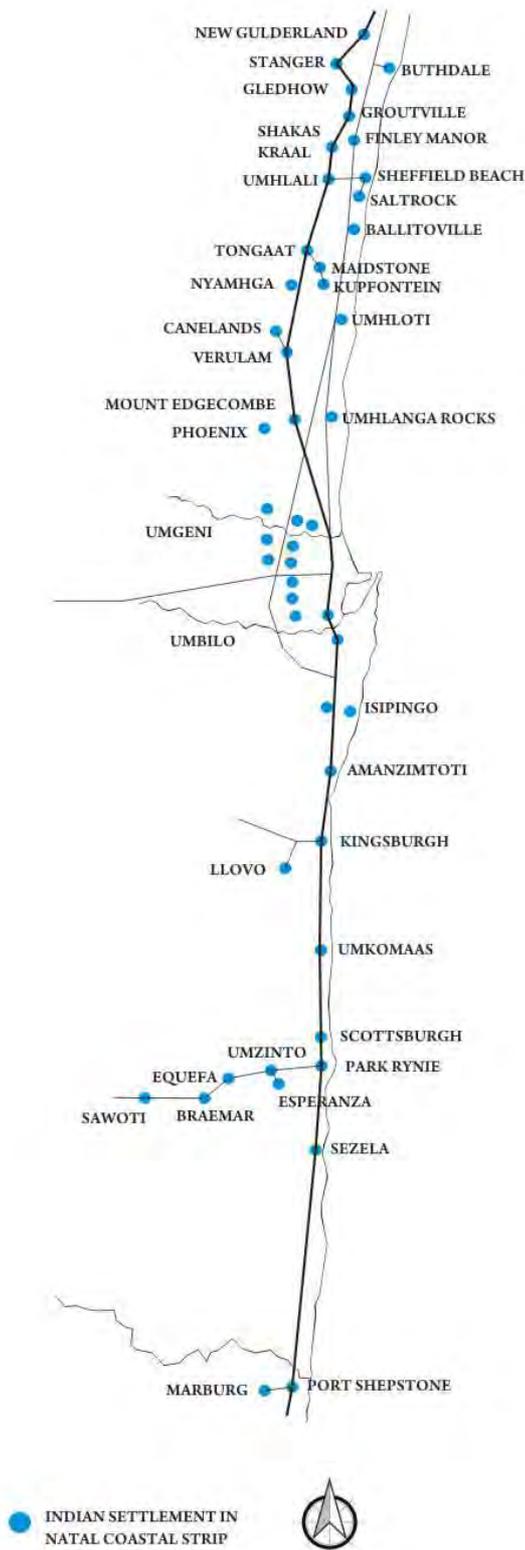
Figure. 10.3-3 illustrates a map of the Natal coastal strip revealing the Indian settlements (Govender, 1993: 26).

The indentured labourers brought a strong and rich culture where it is believed that man does not breed alone. They have to learn to live with each other, especially the Hindus, Tamils, Telegus and Muslims. They soon established strong communities in the areas they settled. Most of the workers became merchants and craftsmen thereafter. The cultural heritage was maintained by the Gujratis and Muslims who built Mandirs and Madressas respectively. The descendents of early Indian settlers had contributed economically and had a powerful influence in commerce, industry and profession. There are about one million South African of Indian origins where 20 percent are Muslims, 12 percent are Christians and 68 percent are Hindus (Govender, 1993: 27).

Chatsworth has become one of the biggest inner-city suburbs just south of the city centre of Durban. It is a growing, vibrant and cosmopolitan home with four hundred and fifty thousand inhabitants that extends to sixty four different suburbs in a mixture of old and new architecture.

It has a diverse economy that ranges from spaza shops through big brand stores. Chatsworth known as a former township is an overhang from the apartheid era and was

created by the Group Areas Act mainly for the Indian population in the late 1960s. Europeans were said be agitated by the Indian penetration at that time. About seven thousand Indians were removed from the magazine barracks in central Durban and were joined by uprooted Indians from other areas such as Umhlanga, Berea, Bellair and Cato Manor – these areas became white suburbs (Durban, 2011).

Chatsworth is still predominantly an Indian community today although there is a mix of African, Indian, White and Coloured residents. The area has a rich flavour of mixed Indian cultures that had initiated the erection of the Temple of Understanding- the Hare Krishna Temple which has become a spiritual hub in the region with the Gandhi Centenary Park adjacent to it. A street block has been dedicated as a public open space and remained as a park until funding transformed it into a magnificent garden during the 1990s. It is dedicated to Mahatma Gandhi's centenary arrival in the country and his influence in terms of politics and spirituality. The park c offers a serene atmosphere with brick paved pathways, a gazebo, water-lake and cascades, a min amphitheatre and plaques that had inscribed expressions of Gandhi. The park adds to the serenity of the place as it offers a pleasant place for relaxation amidst movement in various commercial outlets in Chatsworth (Durban, 2011).

Figure. 10.3-4 illustrates the Gandhi Centenary Park with views of the Lake, Amphitheatre and the Fountain (Author's photograph, 2011).

Figure. 10.3-5 illustrates the Hare Krishna Temple (Author's photograph, 2011).

The Hare Krishna Temple, known as the Sri Sri Radhanath Temple of Understanding (Figure. 10.3-5), does not only add to the spiritual value of the area but also it serves as a tourist destination. Many locals also visit the place for its commercial function as a restaurant as well.

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It is aimed at the immediate community and wider communities (Durban, 2011). The township of Chatsworth has developed over the years to become one of the thriving suburban areas not only for the relocation of housing schemes but also in terms of cultural and spiritual hub. The majority of the people in the area are dominated by the Indian Community. There are strong public transport routes linking the various suburban units to the Chatsworth Town Centre. The latter has flourished over the past twenty years with a mixture of commercial, retail, judicial and light industrial activities.

Figure. 10.3-6 illustrates the Chatsworth Centre (Author's photograph, 2011).

The Chatsworth Centre (Figure. 10.3-6) is renowned for its rich Eastern experience as a retail outlet and a cultural shopping experience. The mall is situated in the heart of the Town Centre with access to it from the Higginson highway and within walking distance of the major bus routes and railway station.

Taxi drop offs are just outside the centre. The transport system is very effective in Chatsworth. The existing taxi and bus routes to the Chatsworth Centre are easily accessible from the surrounding areas and further to the Durban City Centre. There is also an existing railway line close to the Town Centre linking different areas from Chatsworth to the inner city of Durban (Govindsamy, 2002: 19).

The business hub of the Town Centre has a circular form of major arterials that has led to a fragmented urban design whereby various island sites have been created. Some of these sites have been developed in various ways, yet there is not a coherent interrelation among them. An architectural intervention may promote the formation of linkages of the existing developments to enhance the urban design of the area towards creating a community linkage not only of the surrounding context but also on the larger scale (Govindsamy, 2002: 20). The open space areas help in developing a public realm whilst addressing the community needs. The issues in the established Chatsworth community have to be considered and possible solutions need to be implemented architecturally in serving the community as a whole through participation. The area faces the lack of

community amenities and the absence of linkages from existing facilities (Govindsamy, 2002: 21).

10.4   Project Description and Development Controls

The site is zoned as a place of worship, located at 8 Main Street, Chatsworth Town Centre. It is the portion 8595 of 107 of Chatsworth. The land is owned by the Sunni Razvi Society, Durban Branch. The main development criteria are minimum 20 bays per 100 square metres of proposed floor area and 7.5 metres development away from the adjacent roads. Any development on site will take into account its immediate context and will be two or three storeys high. The FAR and coverage are non-applicable. The site area is 18663 square metres, which is approximately around two hectares (Chetty, 2011).

The site is currently in a neglected state with wild vegetation. It is located adjacent to them Chatsworth mall, the main active node of the Town Centre. It is in close proximity to the Hare Krishna Temple and the Gandhi Centenary Park that form the spiritual hub of the region. The site is raised from the street level and any development will create visual prominence.

The north-west corner of the site houses an existing Masjid for the Sunni Razvi Society. An existing unit exists at the edge of the road in that corner and is used by the community people to sell fruits and vegetables. The foundation stone of the first Khanqah Qadiriya Razvia was laid in 1982 by His Eminence, Khanqah Qadiriya Razvia, in Chatsworth and it has since become a centre of the Sunni Razvi Society International and its publications as well. His Eminence arrived in Durban in 1968 where he delivered lectures and religious discourses in various parts of the province. The spiritual practices he had started in other countries found their way through to South Africa and they formed part of the spiritual life of the Muslims. His other visits to the country were historic as the Muslims began religious observances for the welfare and enlightenment of their community. Books, booklets, pamphlets and other educational material were published to propel a spiritual revolution so that the hearts of men are purified from the dust of ignorance and pure material temptations. His

Eminence also met the Mayor of Durban during his stay to build bridges between ethnic, race and religion groups in Durban (Razvi, 2011).

10.5   Urban Analysis

Figure. 10.5-1 illustrates an aerial map of meditation centres in the surrounds of Chatsworth (Author's drawing, 2011).

A regional aerial map analysis shows that there is no meditation centres in the close proximity of Chatsworth (Figure. 10.5-1). Most of the centres are on the outskirts or far away in other regions. The local community of Chatsworth has no direct access to these areas which are not only in a distant location but most often in remote areas that are accessible mostly by private transport. Therefore, they are dedicated to a particular few. There is a need to accommodate a meditation centre that will cater for the immediate community as well as linking the communities on the outskirts.
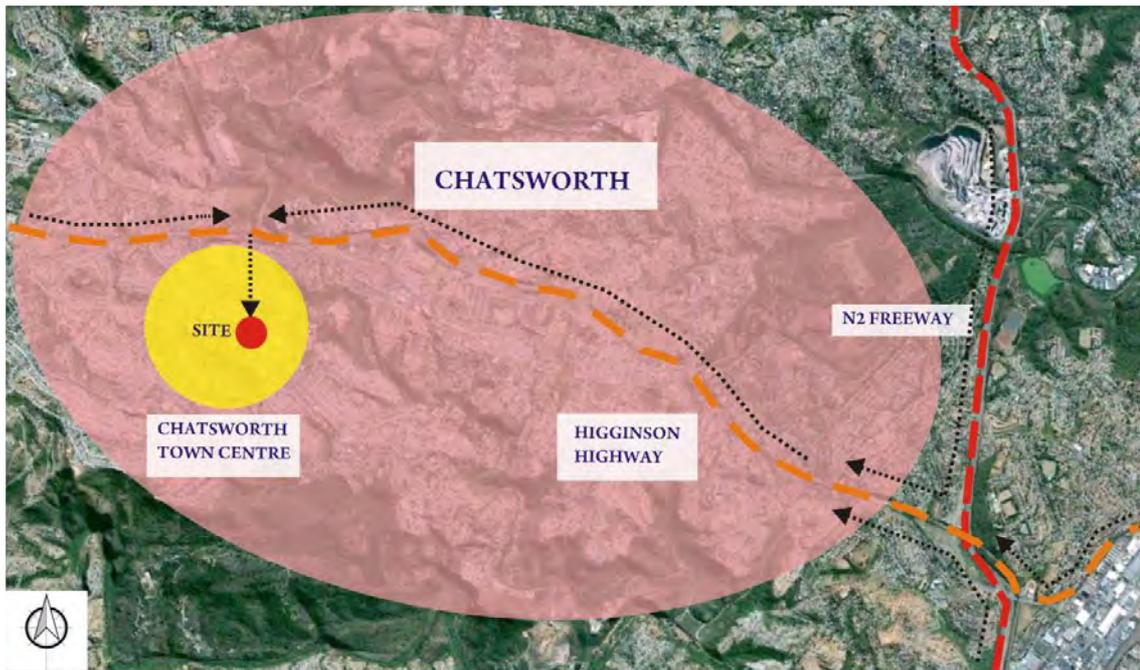
Figure. 10.5-2 illustrates the main access routes to Chatsworth and the Town Centre (Author's drawing, 2011).

Chatsworth (Figure. 10.5-2) is located down south the City of Durban. Access to the area is by the N2 Freeway or by the railway lines joining the two places. The Higginson Highway is the main branch road from the Freeway to Chatsworth. The latter is an area where the majority of the population is Indian. The highway is an important connection that links the macro context of the wider communities to the micro community of Chatsworth.

The figure ground (Figure. 10.5-3) reveals that the Town Centre has a low density of commercial, retail and cultural activities whereas the periphery has a high density development of residential areas. The Town Centre has a balance of open green spaces and commercial development while the residential areas are compact. The area has an arterial grid layout unlike linear city blocks. The arrangements are organic. The Town Centre represents the heart of Chatsworth with linkages as arteries feeding out to the outskirts.

Figure. 10.5-3 illustrates the figure ground of the urban context of the selected site in Chatsworth (Author's drawing, 2011).

The main arterial that runs along the periphery of the Chatsworth Town Centre is called the Chatsworth Circle. The chosen site lies along Main Street on the west, one of the inner arterials within the Town Centre, and the other road that borders the site is Tranquil Street on the south. The east and north roads are much quieter than the busy road on the west and less busy on the south. The main activities in the Town Centre occur mainly on the western edge and southern area. The main transport nodes are the railway station in Chatsglen and the taxi depot in the inner Town Centre at the Chatsworth Centre on Main Street. The railway station is within walking distance to the Town Centre and the site. The area is activated by the easy access to public transport. The vehicular routes of public transport (Figure. 10.5-4) are mainly through the main roads in the residential areas around the Town Centre. People using private modes of transport utilize mostly the Higginson Highway to get in and out Chatsworth.
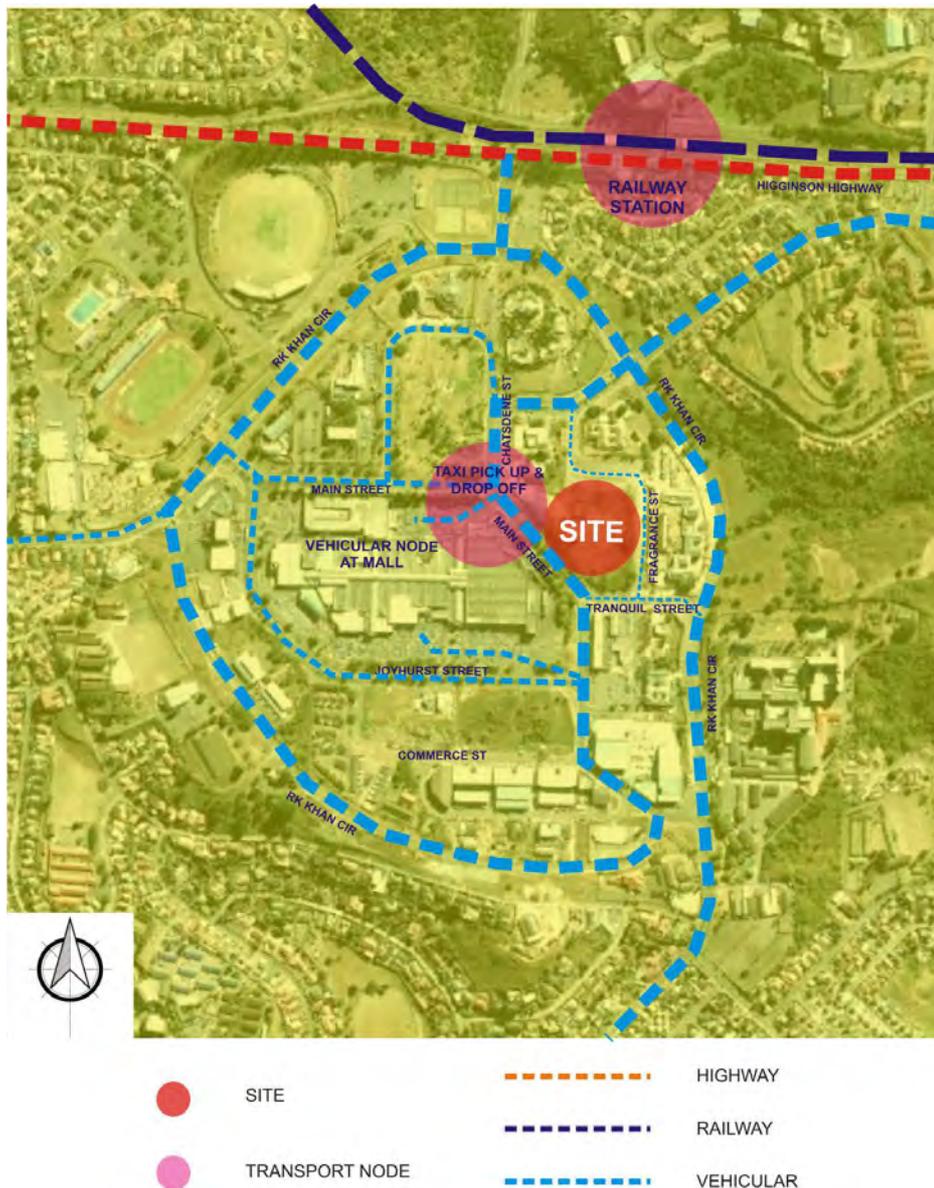
Figure. 10.5-4 illustrates the vehicular movement in the urban context (Author's drawing, 2011).

The Higginson Highway is an important link from the macro context of wider communities to the micron context of the Chatsworth community. The Higginson Highway is always busy and noisy while the routes in the Town Centre are busy mostly during the day when activities such as commercial and retail services occur. The outer routes through the residential zone are relatively quieter but busy during daytime if these routes are utilised by public modes of transport. The surrounding buildings around the site are commercial, retail and civic buildings. There is therefore public movement daily (Figure. 10.5-5). During the weekends the area is less busy except at Chatsworth Mall which is busier.
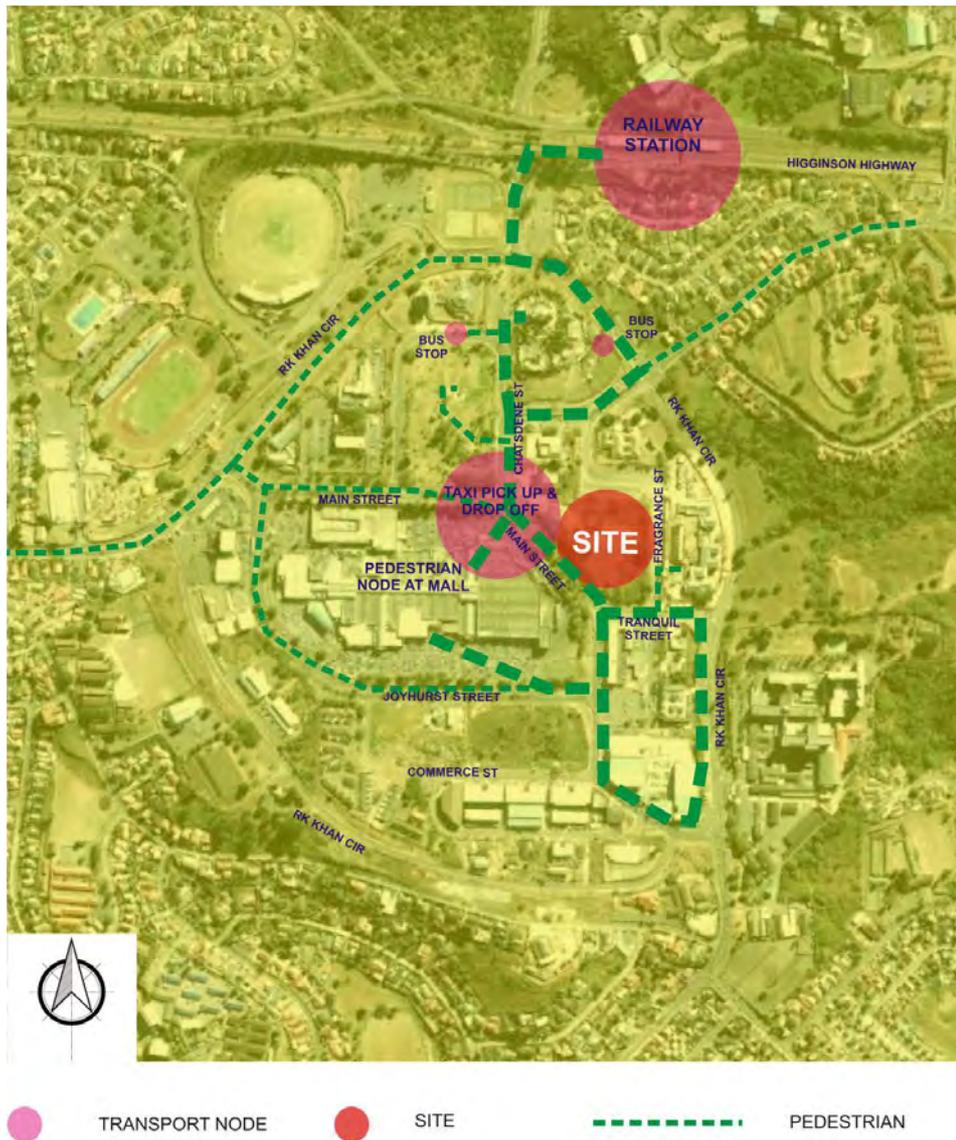
Figure. 10.5-5 illustrates the pedestrian movement in the urban context (Author's drawing, 2011).

The urban analysis has indicated the zoning of the contextual buildings around the site with linkages to the main transport nodes, especially at the Railway Station and taxi depot next to the Chatsworth Centre. The site is easily accessible by most users and is within the Town Centre and within walking distance from the railway station. The area is secure with a police station adjacent to the site.

10.6   Site Analysis

10.6.1 Accessibility

The site is located at the corner of Main Street and Tranquil Street, opposite the Chatsworth Centre, in the Town Centre of Chatsworth. The Main Street has a highly busy traffic during most times of the day while the Tranquil Street is less busy. The major vehicular and pedestrian node is on the western edge of the site which is a major transport node especially for public transport such as taxi drop-off and pick-up points. The Chatsworth Centre is also frequented by private modes of transport by its users. There is a strong pedestrian link from the railway station to the Chatsworth Centre and also to the Hare Krishna Temple.
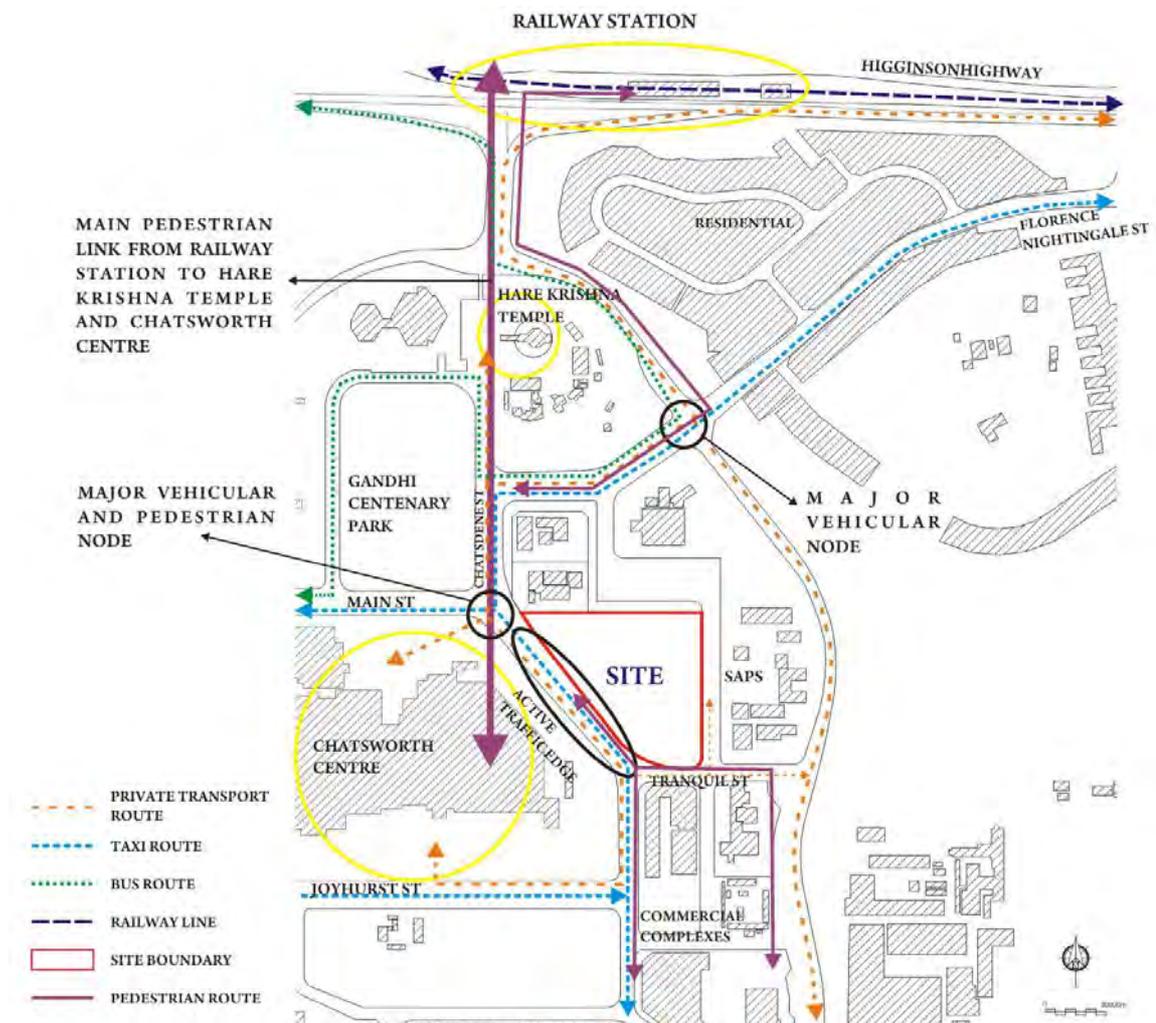
Figure. 10.6.1-1 illustrates the traffic movement around the site (Author's drawing, 2011).

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The northern road and eastern road are less used by vehicles and pedestrians. The Railway Station is within walking distance to the Town Centre and the site. The residential areas are also linked to the Town Centre by either taxi or bus routes. Bus stops are located at the Gandhi Centenary Park and the Hare Krishna Temple, and are close to the site. The traffic analysis on site reveals that accessibility is highly effective in the area with linkages from the four roads around the site with both public and private modes of transport, and pedestrian routes. Therefore the site (Figure. 10.6.1-1) is accessible from all modes of transport: public and private.

10.6.2 Views in and around the Site

The site has visual prominence as it is elevated on a natural plinth. Views (Figure. 10.6.2-1) from it and to it are clear without any major obstruction in the sight line. The site is bounded by wild vegetation: bushes, grass and trees on the four sides. Views from the site northwards show the Magistrate Court on the northern block and the Hare Krishna Temple beyond it. The eastern view indicates the South African Police Service of Chatsworth with the R K Khan Hospital further on the southeast area, situated on higher contours.

A: North View to edge of site - trees and grass on sloping bank

B: North View to Magistrate's Court on northern block and the Hare Krishna Temple beyond

C: Post Office on northern block

D: Masjid for Sunni Razvi Society on northwest of site

E: View to the Gandhi Centenary Park at its southwest corner

F: Western View of edge of site with taxi drop off zone

G: Western View from site showing the flat grass land with the Chatsworth Centre beyond

H: South View from site showing the slope at edge with the Ayesha Centre beyond

I: South View showing the elevated ground of site and pedestrian link from west to east

J: East View to South African Police Service Chatsworth

K: East View showing the sloped bank and planted trees on the edge of site

L: North East View to Residential buildings along Florence Nightingale Drive

M: North View from site showing the Masjid and Hare Krishna Temple beyond

Figure. 10.6.2-1 illustrates the views in and around the site (Author's drawing, 2011).

The southern block consists of commercial outlets such as the Ayesha Centre, the people's market, the Chatsworth Main Shopping Centre and also a Fire Station which is opposite the Police Station. The Chatsworth Centre is located on the western block and is the main commercial activity in the Town Centre. Beyond the mall are duplexes, a youth centre, Chatsworth Plaza, a Tyre outlet, clothing factories. The northwest edge of site accommodates a Masjid by the Sunni Razvi Society with a post office on its north. On the west of the Post Office is the Gandhi Centenary Park and northwards the Hare Krishna Temple which is the spiritual hub of the Town Centre.

10.6.3 Climatic Conditions

Chatsworth has a subtropical climate usually hot and humid with summer rainfalls and dry winter. It is strongly affected by the major south westerly winds (Figure. 10.6.3-1) that are diametrically opposed in direction to the secondary north easterly light winds. Chatsworth winds blow predominantly from the south southwest, southwest and northeast. The strong south southwest winds often cause an inclement weather. However, this wind can be a relief during summer afternoons as it occurs after the warm northeast winds at an earlier time. The prevailing winds are very important as they enable the designer to consider the orientation of a building to be exposed to ventilation, especially allowing wind coming from the south west. Cross ventilation is a critical factor to explore in this project.

The summer sun in the area is very uncomfortable; the heat is at its peak during the month of February. Shaded areas have become the escape zone. Direct solar rays are prevented by the use of various devices. They need to be controlled to prevent glare and overheating through the building's skin. Canopies, overhangs, blinds and light shelves are the numerous techniques to apply. West, east and north facades require solar protection. The seasonal minimum and maximum angles of solar penetration in the region are as follows:

Summer solstice: 83° 27°   Winter solstice: 36° 33°   Spring/Autumn equinoxes: 59° 57°

In this context, one needs to conserve heat gain during winter and release solar heat during summer. Shading devices must lower the sun's steeply-angled rays in summer and allow low-angled rays to penetrate in winter.

Due to its location on a higher plane, the site is directly affected by air movement. The contours on site are sloppy towards the eastern, southern and southeastern edges which are the lower areas. However, the site selected is mostly flat for development on the top upper surface. The site is currently open and fence-free but the slopes prevent trespassers to cross over from one edge to the other. The microclimate has downhill breezes especially at night. Air on the surface is cooled when it is in contact with the ground and becomes denser, hence it drifts downwards.
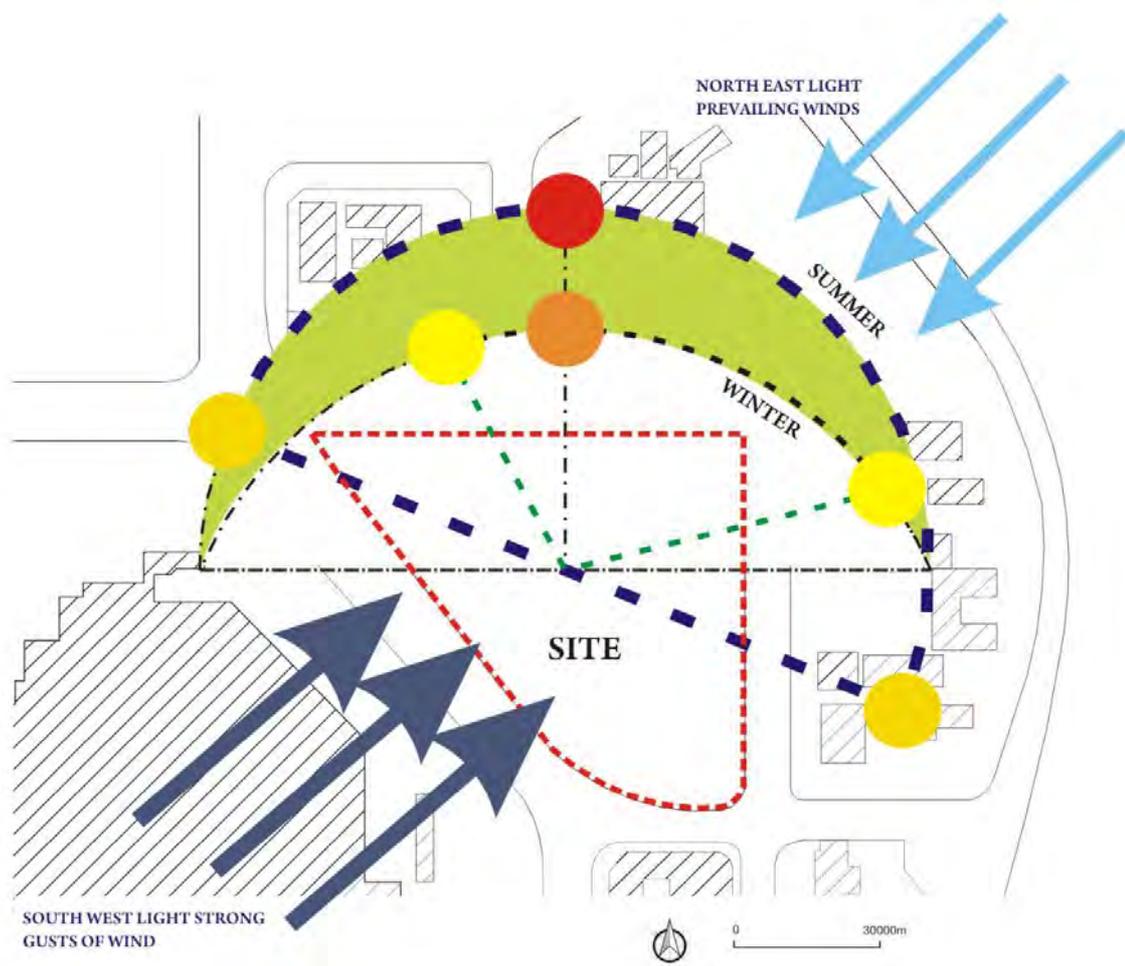
Figure. 10.6.3-1 illustrates the climatic conditions of the site (Author's drawing, 2011).

The soil on site is similar to the "Berea Red" which is ubiquitous in Durban. It has sand-like characteristics and drains readily causing erosions. Currently, most of the land is soiled and grassy with natural vegetation on site. The building materials in the area are

essentially brickwork, concrete and sloppy roof structures that respond to climatic conditions.

10.6.4 Vegetative Landscape and Noise Level

The site has a grass land with wild growth of green vegetation. Trees and bushes are mostly on the edges of the site. They act as a buffer zone against surrounding noise level in the area. The western area has existing trees that provide shade and can be used as sound barriers. Trees and vegetation (Figure. 10.6.4-1) absorb and store heat instantly especially when the environment is warm. When the environment is cooled, they release the heat stored. Therefore a mild and stable microclimate is achieved.

The site is bounded by roads on all four sides. The noise level of the north and east is minimal and almost negligible. Those areas are quiet. In contrast, the noise increase down the south edge since the commercial and retail outlets are found in that block and beyond. The noise level is at its peak on the west edge which has a public transport node and further, accommodates an activated and busy shopping centre. The serene and spiritual hub of the centre is northwest and north of the site. There is a dialogue between quiet and noisy areas in the Town Centre.

Figure. 10.6.4-1 illustrates the topographic nature of the site (Author's drawing, 2011).

This chapter has looked at the urban context of selected site. Appropriate urban and site analyses were carried out to understand the architectural qualities of the site. These analyses will lead to the design development of the project in the following chapter.

CHAPTER 11

DESIGN DEVELOPMENT AND RESOLUTION

11.1   Introduction

This chapter deals with the application of the undertaken research towards the design of a meditation centre in Chatsworth. The centre will be located in the Town Centre of Chatsworth and the challenges lie in integrating the various cultural and social groups who are interested in embarking on the spiritual journey. The building will be faced with contextual and climatic factors that will determine the architectural response of the design. Theoretical study from the literature review will provide a base in establishing the architectural approaches that will define the centre. Symbolism is a medium to address the various cultures and tradition. The science of Vastu Shastra will be applied to create layers of positive energy within the site. It will also help in zoning the different functions accordingly. The site has strong linkages to the city centre and its outskirts, hence its location is appropriate to attract its visitors. Visual links to the surrounding context are advantageous in creating certain desired qualities. The subtropical climate and environmental conditions have to be catered in terms of proper orientation of the centre which will be based on an energy efficient design. The use of technology may be of aid to respond to the aspects of critical regionalism. The phenomenological aspects of space and natural elements will be considered to create a holistic and experiential environment. The theoretical and conceptual frameworks will guide towards the generation of a concept that will be developed into a design proposal.

11.2   Theoretical Framework

There is a need to understand the compositions of consciousness in defining the character of place with the dimensions of space and function. Sensory experience, scales and visual perceptions are important in creating the spirit of place through physical engagement with the environment. Place is a complete phenomenon that needs be experienced as a whole. The identity of the genius loci has a distinct character and is enhanced by a system of orientation that is influenced by natural elements. Geographical contexts need to be considered in developing an identity by responding to the needs of a place. Cultural issues must be treated to create a sense of expression that consists of perceptual sensory imprints in terms of light, texture, colour and materials. Form development inspired by the cultural values of a place should adapt to the local context. A sense of place can be created by identifying the natural elements to feel their

essence in space. Hence, a direct link between man and his environment including nature should be established.

11.3   Urban Design Intentions

The scheme must reinforce the existing urban grid structure by responding to the buildings in the context. The centre should become a destination that pulls visitors from various regions to the site. It should improve the socio-cultural connections. The creation and enhancement of pedestrian linkages may be beneficial in designing an environment that offers opportunities for self-development, self-education and self-empowerment. The design should include social, economical and environmental forms of sustainability.
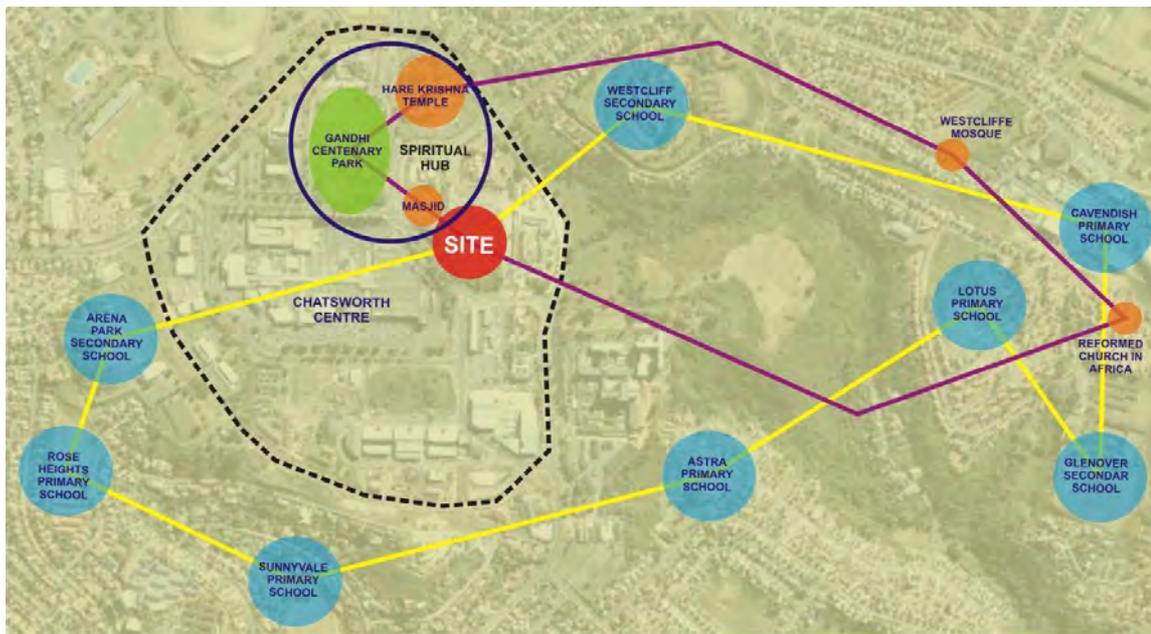
Figure. 11.3-1 illustrates the educational and cultural linkages (Author's drawing, 2011).

The educational and cultural linkages (Figure. 11.3-1) are very important. Chatsworth has many primary and secondary institutions in and around the Town Centre. The aim is to link them so that students can benefit from spiritual practices and knowledge at an early stage of their life. Also, cultural links are important to assemble people of all faiths at the proposed meditation centre which will primary accommodate the immediate community: student and working culture. The Town Centre is already an

established spiritual hub with the Hare Krishna Temple and the Gandhi Centenary Park being the core of that development.

The strong sense of spirituality in the area is the driving element for people to engage more in the proposed centre that shares a similar serene environment. Hence urban linkages are very important to link the Chatsworth Town Centre to its immediate surroundings and outskirts that consist of other suburban areas and the city of Durban. . As such a framework should be established to determine the point of departure and termination point in the urban design scheme. The site is seen as a destination that links the macro context of the regions in the province to the micro context of Chatsworth (Figure. 11.3-2).
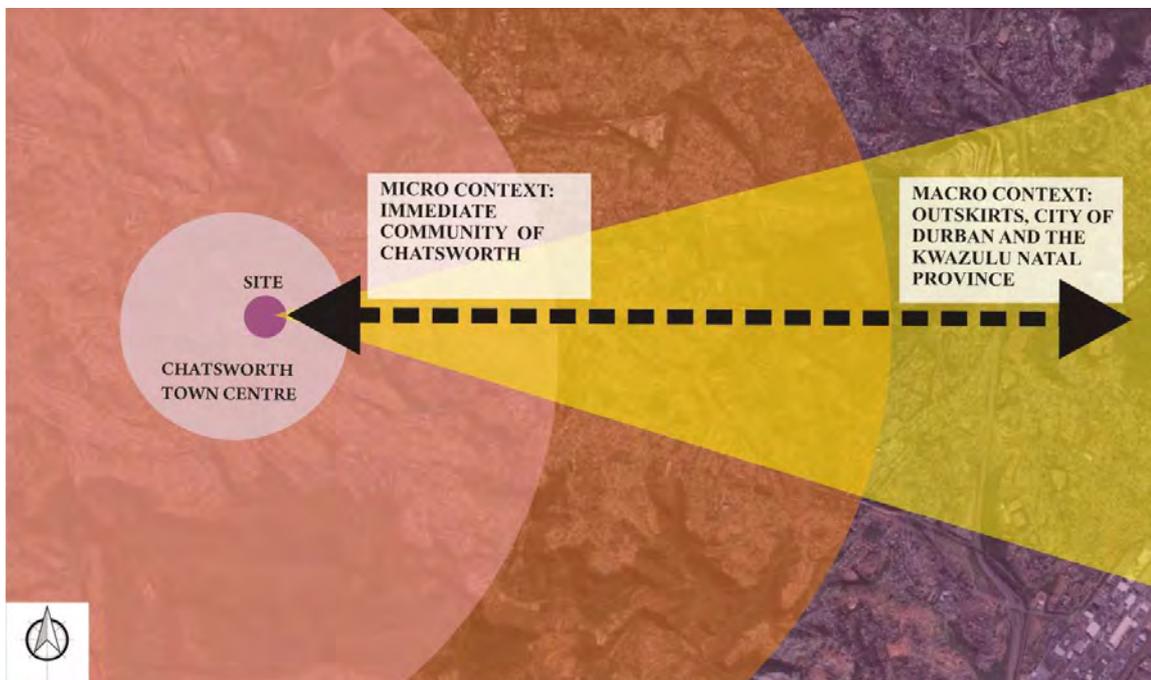
Figure. 11.3-2 illustrates the urban design linkage - macro to micro (Author's drawing, 2011).

An urban design development has been generated to link socio-cultural and educational nodes together with major linkages such as vehicular and pedestrian to the site.

11.4   Urban Design Realisation

The position and zoning of functions are based on the scientific principles of Vastu Shastra and the Mandala structure (Figure. 11.4-1). The northeast area is best suitable for water elements and plants. Spiritual activities should face that direction. The north

area will accommodate meditation facilities. The northwest area is suitable for storage and services. The southwest and southern area is appropriate for residential activities. Educational, socio-cultural, creative amenities will be on that edge. The southeast corner is good for cooking/eating and will have commercial activities.
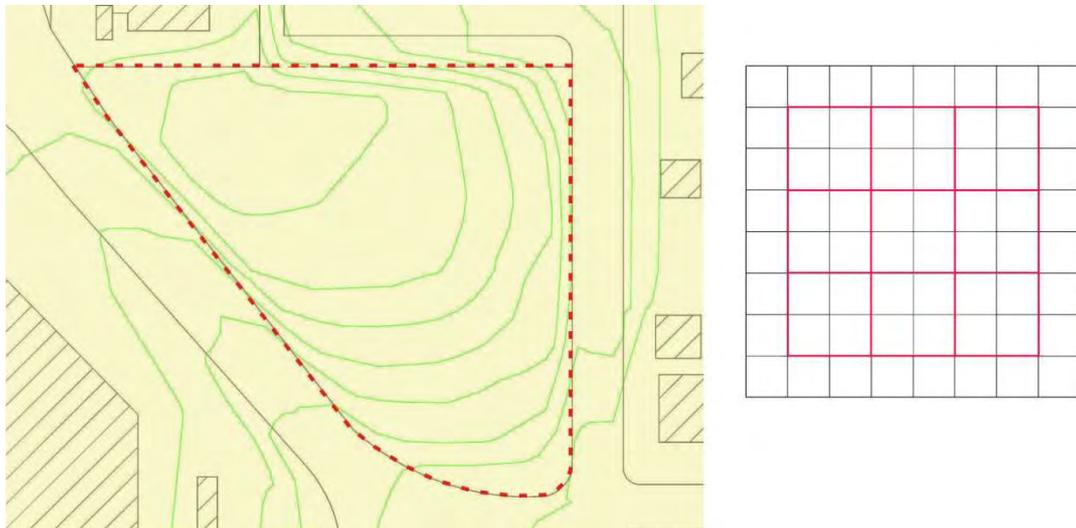
Figure. 11.4-1 illustrates the contours of site and the Vastu Mandala grid (Author's drawing, 2011).

The Vastu Shastra Mandala consisting of the 8x8 square modules is applied on the existing site which had a wedge shape. The Vastu principles will be applied to create energy flow and harmony in spaces. A square module is made from a dot. Then the module is replicated and a square grid of eight by eight modules is created to represent the mandala (Figure. 11.4-2). The mandala has an outer periphery of square modules used as buffer against noise and inner core as the quiet sanctum. The mandala is further divided into nine inner squares that represent the nine planets of the cosmos. Axial linkages are also demarcated at the four cardinals symbolically representing the four eras of time and evolution. The cosmic man is then placed in the mandala and it governs the zoning and functions of the spaces. Its head is positioned to the northeast which is the most sacred place and suited for spiritual practice.
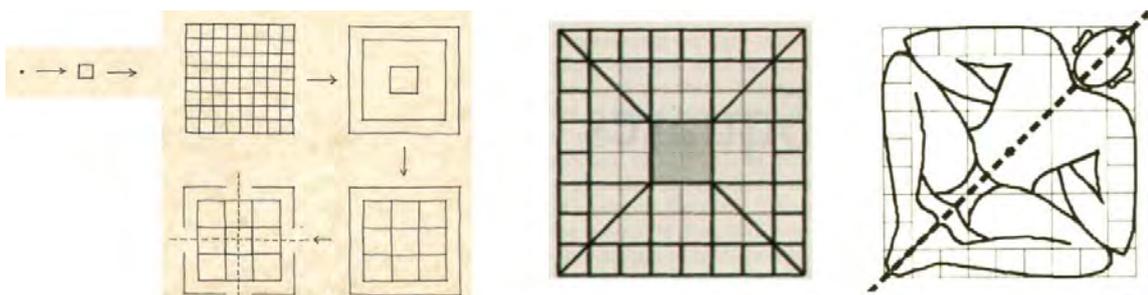
Figure. 11.4-2 illustrates the design of Vastu Mandala grid (Author's drawing, 2011).

Orientation is appropriate to allow natural ventilation by southwest and northeast winds. The longer facades will be exposed to the north and south to maximize natural light. Apart from that, a micro urban scheme (Figure. 11.4-6) has been proposed and it includes the macro linkages from the outskirts to the Chatsworth Town Centre. Axial linkages will be established from a macro and micro context to the site. The east-west axis will be the predominant linkage as the main entrance will be demarcated on the east which is where the sun rises and is symbolically the source of energy. The main pedestrian route will be directed towards the east on the site. The meditation hall will be located on the north east as it is the most sacred place for spiritual practices. It is also the quietest corner of the site. A green landscaped garden will be designed on site for outdoor spiritual practices while other functions will be designed accordingly in the related square modules. The design will be based on spiritual aspects of design that will be retrieved from the literature review, precedents and case studies. Another main linkage route is from the north from the railway station and from the Hare Krishna Temple. It is a spiritual link to the site.

11.5   Design Objectives

The design stage requires certain objectives that need to be met while generating ideas in the conceptual and development stage. These design objectives are listed below:

Assembling the pragmatic tools to create a spiritual environment: The main objective of the design is to create a place where the science of meditation is taught and spiritual practices are conducted by providing that the appropriate functional and spatial requirements.

Bringing together the larger local community and creating socio-cultural interchange: The proposed meditation centre will represent symbolic meanings and respond to the existing cultural and social wealth of the broader local community. The aim is to unify the various cultures for a common interest of spiritual practice. The spaces and forms should provide human comfort in terms of scale and volume so that they allow appropriate interaction among the users and the place.

Responding to the context and subtropical climate: The building will respond to its context informed by the benefits and drawbacks of the site. The design will

acknowledge the climatic and environmental conditions of the site. A dynamic approach will be sought in an aim to create an identity while also enhancing the image of the area.

Integration of man into his environment: The natural environment and natural elements are necessary to bring man closer to nature and the built environment. A sense of belonging is important in establishing an experiential journey with the use of appropriate materials, colour and detail. In a holistic environment, architecture will become a medium for man to become aware of his senses and his inner self.

11.6   Conceptual Framework

The purpose of the design is to establish a relationship between architecture and spirituality. The site is marked by two intersecting axes that have a significant meaning by welcoming all cultures in the place. The axes are demarcated as transitional nodes, where the visitors have a glimpse of what they see but as they tread on the journey they experience new dimensions of space. This illustration also ties in with the concept of Vastu Shastra which represents the universe as macrocosm in a microcosm form. The Vastu Mandala is a design generator that is marked by a linear grid structure. There is the layering pattern of the macro into the micro context; the big squares are further subdivided into smaller squares. Symbolically, the grid structure depicts a mini cosmos influenced by climatic, contextual, and flow of energies in space. However the conceptual design will adapt to its principles but will not be enslaved by being restricted through rigidity. Pure geometric shapes and forms will be used with appropriate compositions to define the spaces which will be unique from one another. The idea is to create various areas of interests with different characters and experiential feel. The planning and vertical dimension will be implemented with the same concept where there will be interplay of solids and voids. The ensemble will represent the notion of yin and yang, figure and ground, and spaces that interplay with the sky, as in the works of Charles Correa, by creating open-to-sky spaces to absorb cosmic energies through an experiential journey defined by the quality of light and air movement.

The journey through the building will be marked by the use of multiple levels and ramped structures. They will form spaces of transit and repose through the experiential journey. The genius loci principle will be applied whereby a place is regarded as a

complete phenomenon to create a holistic character in terms of hierarchy of spaces giving birth to a particular identity defined by the experience of a place through the senses in terms of movement and action, as stated by Pallasma and Norberg-Schulz. The design will adapt to the needs of the region and its users by restoring the balance between man and nature, as Mumford said. As such, topography with the appropriate use of climate and light will be used to enhance an existing urban fabric, as affirmed by Kenneth Frampton in his theory of critical regionalism. Hertzbeger's view will be considered where space will be experienced in various dimensions by the users in terms of sensations and feeling. A natural sacred relationship with the user, building material and the context will be established where a purified place will be created to unite the body and spirit, physically and psychologically, as seen in the works of Tadao Ando. A sense of belonging and orientation is essential in a place that is strengthened by the process of gathering. Heidegger states that poetry allows man to experience the sense of belonging to an environment that is visible with the application of the genius loci that allow elements to coexist in space. Pallasma says that a holistic environment is born when the silence of architecture is responsive and remembering -man becomes aware of his existence and attentive to the solitude that prevails. This is seen as the harmony between heaven and earth.

The aim is to synthesize between the pragmatic and the symbolic attributes that such a centre represents. The use of light, water bodies, hard and soft landscape are indispensible in this scheme where these elements will coexist to form the holistic and sacred environment required for spiritual practice.

The concept for this meditation centre is *interpreting Vastu Shastra to create balance in a spiritual environment*.

Meditation leads to freedom from duality, to control the senses, body and mind, to purify activities and to link oneself to greater consciousness, God/Self - realization. There is the composition of the three states: inertia, activity and the state of consciousness which is the balance of the other two states.

Spirituality is the balance between the material and immaterial world. The architectural design should capture the glimpse of the world and reflect it as a mystical image with alternative visions of reality. The centre is therefore the meeting place of eternal forces with the gasp of the ocean spray giving life to the rock and earth. Hence architecture is

about making spaces that feed the soul: sculpting spaces that integrate nature, the manipulation of light and making use of the nature's palette and texture in the building materials. A holistic approach will be sought for an ensemble of consistent and coherent design.

The material world is representative of the flesh while the immaterial is the soul. There are layers and misprints through these layers. The individual must embark on a process of cleansing to each the inner core. Architecturally, the layers will represent the buffers around the inner core – courtyard space. The building wraps around the inner sanctum. The focal point is the courtyard space that is sacred. Water bodies and soft landscaping will be designed in those spaces that are transitory. Layers are associated with the different bodies in spirituality; the seven bodies. Numerology, order and geometry will be applied in the design where pure forms and stable shapes will be used. The geometric order of yantra will be used. Triangular yantra is meaningful, the normal triangle is associated with fire and has masculine qualities and the inverted triangle is the symbol of water and is feminine in nature. Layers will also be representative of the journey from chaos to tranquility. The solid mass of the building will also be another layer of buffer. While its grand volumetric space will create intimacy and one will feel humble in that space. The colours of blue water and green grass will add to the aesthetic appeal of the building and experience inside the space. The inner walls will be rendered pale pink that signifies the colour of love and harmony. There is an inner and outer contrast of material and texture. Also the two buildings contrast as well. One is sacred the other is more secular. It represents the change from one state to the next.

11.7   Environmental Design Considerations

Passive design and implementation of technology: climate appropriate design

Use of Rammed Earth

Rammed earth provides has insulating properties and is beneficial as a noise barrier. The main building will be raised in a plinth. Rammed earth will be used to insulate retaining walls that will not only be designed aesthetically but also act as buffer for noise from the surrounding context. Trees will be planted on the noisy edges especially on the west to soften the urban fabric on that edge but also to reduce noise level.

Organic garden will be set up on the western edge and terraced downwards. The coutours on the site will be moulded to create a buffer zone against the street edge and trees will be planted on those edges, providing natural fresh air in the environment whilst reducing the noise level.

Orientation of Buildings

The blocks will be orientated to have maximum daylight and also passive design includes natural cross ventilation in spaces that require fresh air especially for spiritual practices. The areas will be accessed as which ones require air conditioning, mechanical ventilation and natural ventilation. 60 % of the usable area should be naturally ventilated in a passive design scheme. The main areas in need of natural ventilation are the meditation hall, painting, dancing studio, eatery area is openable to the garden while residential units have cross ventilation too.

Courtyard Spaces

Courtyard spaces have environmental characteristics apart from functional and social activities that occur. Courtyards will consist of shaded trees and scented plants. Water pools are also provided. Trees and water create a cooling effect and is beneficial in a hot humid climate. Apertures in the building will be provided to allow cool air to enter and hot air rising up to escape. Hence a human comfort space will be set up.

Windows

Windows should be provided at 5% per floor area, for example in 100 m², 5 m² should be provided with openable fenestration.

Rain Water Harvesting

Rain water will be collected on site. The water pool around the meditation hall is not only for aesthetic purposes but also serves as an attenuation tank. Rain water is

collected and is reuse to flush toilets and for irrigating organic plants. Essentially rain water runoff is collected in the attenuation tank which is also serves as a water feature. The attenuation tank allows water to gradually soak in the soil. Here water is stored in water tanks in the basement and pumped to flush tanks. A ground source heat pump is a desirable medium as compared to solar pumps.

Materials

From precedents especially in India where there is a hot humid climate as in Chatsworth, Vastu design has a certain type of shape of building and it is based essentially on climate. For instance, grass in courtyards, domes and stacks providing ventilation and also the venture effect of air flow in buildings. There will be use of brickwork and concrete. Brickwork over a time period of 100 years is best while concrete is suitable for a time period of 50 years. Since clay requires firing and there is more energy consumption resulting in a high embodied energy in brickwork. Concrete does not require that hence it has a low embodied energy but if we look at cement, then that process requires energy consumption. Other material to be considered is timber that will be sourced locally and protected when in use. It is an environmental friendly material. Resocrete is mostly used as it is 98 percent a green building material. Steel structures have long spans and will be appropriate to explore for large open plan spaces.

11.8   Conceptual and Design Development

The conceptual and design development are based on the theoretical and design concepts discussed above.

DESIGN PRIMER
THEORIES, PRECEDENT AND CASE STUDIES

BACKGROUND RESEARCH

Research: the study of the **qualities of architecture** that **influence the human physiological, psychological and spiritual well-being** towards establishing architectural guidelines that will facilitate spiritual practices such as **meditation and yoga**.

Issues:
A **sense of segregation** still occurs in socio-cultural groups especially in smaller group communities. Architecture could become a medium to **mediate** and encourage a dialogue between different **social and cultural groups**.
The **problem** arises out of a **need for self-education** towards creating a sane society devoid of conflicts and ills that have been the outcome of the abuse of education, lack of tolerance and respect for one another.
The **issues faced** are determining the **spiritual qualities** that architecture can bring to create space for the engagement of **socio-cultural groups**. These spaces must be designed to **accommodate the pragmatic requirements of spiritual practices** by embracing the socio-cultural and environmental context.

Research Problem:
Since **spirituality** is a universal doctrine and this project is **catering for multi-cultural groups**, it becomes difficult to cater for every different believer. However, the **main challenge is looking for architecture that is appropriate for all religions.**

Hypothesis:
The founding statement of this dissertation is that **spirituality influences architecture**. The **physical, psychological, symbolical** and **tactile** qualities of architecture are essential in creating an **environment conducive** for spiritual practices.

Theories:
Vastu Shastra:
Creating an energy flow on site
Applying rules of cosmology
Representation of the Mandala
(Prasad, 2007: 17-19)

Phenomenology of Place:
Creating character of place
Interaction of the senses
(Norberg-Schultz, 1980: 8); (Shirazi, 2011)

Critical Regionalism:
Integration and response to the needs of a place
Topography, tectonic of environment, light, culture
(Jencks, 1997: 97-98), (Frampton, 1981)

Place Theory & Sacred Architecture:
Characteristic of a place and human response
Physical, social, spiritual environment
Order, proportion and geometry
(Crowe, 1995: 76-77), (Day, 2004: 110)
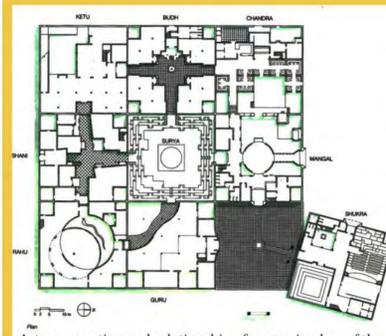
Interconnection and relationship of spaces in plan of the Arts Centre: Arts & Crafts of Rajasthan
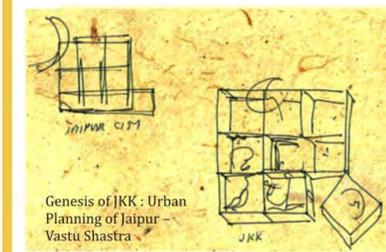
Genesis of JKK : Urban Planning of Jaipur – Vastu Shastra

Composition of form and texture in facades

Interdependence of spaces - each square of the Mandala is different

Precedent: Jawahar Kala Kendra, Jaipur by Charles Correa, 1991 (**Vastu Shastra**)
Contemporary building based on the archaic **notion of the Cosmos** – the **9 planets Mandala** with one square moved apart to provide a point of entry and recall the gesture of the original **plan of Jaipur** – relating to urban planning and context
Symbolic meanings of spaces: each square zoned by planet with its **texture and colour** with imprint of symbol on facade
Square sized 30m x 30m, defined by red sandstone walls 8m high.
The **central square** in the ancient Vedic Shastras is a **Void representing Nothing** and is the **true source of all Energy.**
Solid and void – 'gardens within garden'; open-to-sky spaces (Correa, 1996: 218-220)

Aerial roof view showing the proportion and order of structure

Optical identity: merges with its surroundings of lily ponds and gardens
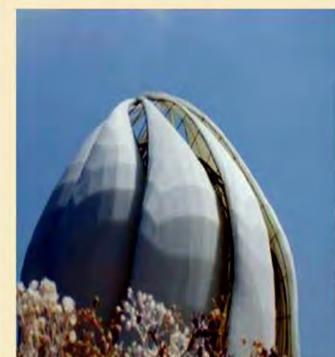
Monumentality and symmetry of wings rising to vortex

Precedent: Baha'i House of Worship, Chile by Samiak Hariri, 2010 (**Sacred Architecture**)
• Located at top of a hill in a **semi arid region**
• 30 m wide and high with capacity of 600 people
A dome-like element encloses the top forming a nest structure that has a **sense of order, proportion and symmetry** of the 9 wings
• Concept: to create **a glowing temple of light** to invite **people of all faiths**
• Achieve **transparency through light**: during day sunlight is filtered and at night the temple emits a warm glow of interior light
  The **inner space is huge and communal** with its **periphery compressed and private for individual experiences.**
• Innovative technology: use of **transparent materials such as Spanish alabaster** and clad **in forged glass to allow light through**
• **9 entrances** symbolically forming alcoves reduced to a human scale – **9 represents 9 planets** (Baha'i of Chile, 2010)

Dome: symbolic form as it attracts cosmic energies to create a sacred place

Verandah: functional for shading whilst allowing daylight and natural cross ventilation across the building

Spiritual retreat outdoors in the open natural land surrounded by green landscape

Case Study: Lao Tzu Meditation Centre, Mauritius by SGAS, 2009 (**Critical Regionalism**)
• Laboratory to cleanse the human body and attain **self-realisation**, accommodating 1000 people
• Located in a **green natural and religious context**
• Basic functions of a **main hall** and **support facilities to practise meditation**
• **Temporary and linear seating arrangement** facing a raised stage – **flexible indoor space**
• Design of the centre: **responds to the regional climate** - concrete and brickwork are the **local materials** used.
• **Colours used are warm on the exterior** while **soft and light colours** are used in the **interior space** to create a **serene atmosphere** with less decoration as **focus is inwards.**
-ve points
• Lack of linkages from one space to the next, from main space to sub-spaces
• Vehicular and pedestrian routes are not well demarcated (Swami Paramananda, 2009)

Yantra geometric representation
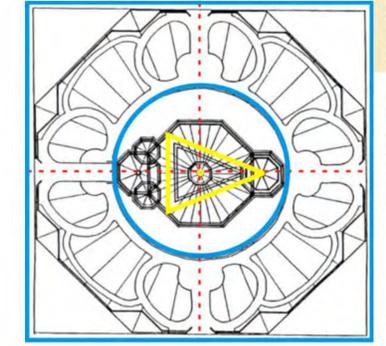
Plan showing Yantra design in Hare Krishna Temple

Case Study: Hare Krishna Temple, Chatsworth by Rajaram Das, 1985 (**Yantra**)
Yantra: dot, triangle, circle, square
• Circle: represents ignorance
• Triangle: signifies the duality.
• Square: the four eras of time and their gates of entrance
• Surrounding moats of water: the cycle of birth and death
• Strong **sense of order, hierarchy and axis**
• **Processional journey from exterior to interior spaces**
• Use of green landscape and water features
• To create **serene outdoor environmental friendly space for contemplation**
• **mix of traditional and contemporary architectural style** responding to the **region and climate**
• **Visual prominence and identity** in context - use of symbolic forms
• Use of **natural light** and **cross ventilation**
• **Textures and materials:** concrete and steel structure with steel roof and lots of glazing
• **Highly decorated interior space** to create a wonder and welcoming space.
(Naidoo, 1997: 7); (Kribashne, 2010: 14); (Dixit, 2000: 114)

-ve points
• Narrow and dark passages
• compressed spaces
• loss of sense of orientation
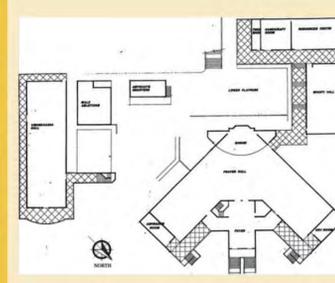
Part plan: prayer hall –1800 people
Male and female separate seating spaces, diagonally facing elevated shrine

Therapeutic indoor cascade: engagement with the senses when meditating

Case Study: Sivananda International Cultural Centre, La Mercy by Hans Ramdin, 1987 (**Critical Regionalism & Phenomenology**)
• Set in a **green natural context away from urban life**
• Blocks linked by **pedestrian pathways through natural landscape**
• **Colourful mix of textures** on facades with symbolic meanings captivating the senses
• **Blue**: peace, **Yellow**: love, **Green**: tranquillity
• Roofs green with wall tiles that are green and white.
• Use of openings for **cross ventilation and daylighting** (Swami Sivananda, 2010)
-ve points
• Long pedestrian pathways, no sense of orientation and hierarchy in spaces and design
• No demarcation of buildings' functions in architectural design
• Spaces not well ventilated, heat traps in interior spaces

Local materials: bricks, steel structures, metal roofing and mosaics

Indoor meditation inside pyramidal auditorium flooded by natural light

Yoga, Painting, Sculpting

Precedent: Osho International Meditation Resort, Pune India (**Critical Regionalism**)
• Resort for meditation and yoga: a balance between indoor and outdoor activities
• Accessible by various means of transportation in the region close to airport and railway station – located close to urban context
• **Silence is maintained** through speech, action and dialogue on site
• **Materials used blend with existing natural landscape**
• Use of **sacred geometry, order, proportion and symbolism** to create a **serene environment** complemented by aesthetic qualities
• **Creative activities** like painting, sculpturing, dancing, martial arts are also performed and form part of developing mind
• **Pyramidal structure**: form reveals mysticism and is designed to **respond to its context** - climate and environment
-ve points
• A high class facility not accessible to all spiritual seekers (Famous-India, 2000); (Rudra, 2010)

Main entrance to auditorium, pathway set on a water lake

Kresge Chapel, MIT, Cambridge by Eero Saarinen

The BARAI (Meditation/Spa), Thailand by Lek Bunnang

Palace of Peace and Reconciliation, Kazakhstan by Norman Foster
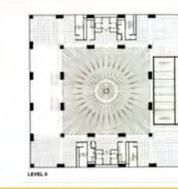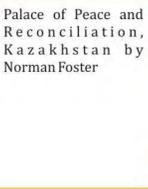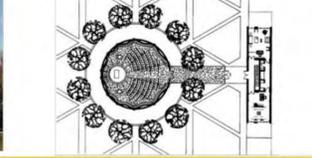
Lotus Pond of Water Temple, Japan by Tadao Ando

URBAN AND SITE ANALYSIS

SITE BACKGROUND

Site Selection Criteria:

LOCATION: In the heart of Chatsworth Town Centre. It has an urban context highly influenced by an activity and spiritual hub.

ACCESSIBILITY: Accessible by all modes of public transport: bus, taxi and private transport with the railway station close by.

VISIBILITY: Set on an elevated land from its surrounding roads with views to the outer surrounding context; easily seen from various points of location.

TOPOGRAPHY: Flat suface on a contoured land with banked edges formed by wild vegetation with an existing grass and earthed surface.

NATURAL ENVIRONMENT: Site offers opportunity for new development while enhancing its natural and urban landscape.

SOCIO-CULTURAL: Located in a culturally rich region of spiritual advancements.

SIZE: Area large enough for proposed development.

NOISE: Site bounded by roads on all edges and is nosiest on the west.

DRAWBACKS: Exposed to adjacent noises and this factor needs to be resolved architecturally.

SITE D: Chatsworth Town Centre (Selected Site)

Regional and Site Historical Background:

Chatsworth is a hub to which all the arteries are attached. Its main draw card is the Hare Krishna temple which is an established spiritual node in the area. The area being a rich cultural and Indian community links the other Indian places of settlement in the KwaZulu Natal province.

During the British colonial period, Indian labourers were brought in from the India to South Africa to work in the cane fields in 1860 mainly in the Natal province on the east coast which housed the harbour. About the expiry of their contracts, two-thirds of the workers stayed in the country and settled mostly in the province with few moving to the Transvaal. The majority settled in Natal from Stanger in the North to Umzinto in the South (Govender, 1993: 26). Chatsworth is a central core along the line of settlements from the north to the south strip along KwaZulu Natal. But its linkages links further to Escourt, Ladysmith, Harrismith and further up to Johannesburg on a macro level. The main access point is from the freeway linking all the regions to Chatsworth.

Chatsworth has become one of the biggest inner-city suburbs just south of the city centre of Durban. It is a growing, vibrant and cosmopolitan home with four hundred and fifty thousand inhabitants that extends to sixty four different suburbs in a mixture of old and new architecture. It has a diverse economy that ranges from spaza shops through big brand stores. Chatsworth known as a former township is an overhang from the apartheid era. Chatsworth is still predominantly an Indian community today although there is a mix of African, Indian, White and Coloured residents. The area has a rich flavour of mixed Indian cultures that had initiated the erection of the Temple of Understanding- the Hare Krishna Temple which has become a spiritual hub in the region with the Gandhi Centenary Park adjacent to it.

The Hare Krishna Temple, known as the Sri Sri Radhanath Temple of Understanding does not only add to the spiritual value of the area but also it serves as a tourist destination. Many locals also visit the place for its commercial function as a restaurant as well. It is aimed at the immediate community and wider communities. The township of Chatsworth has developed over the years to become one of the thriving suburban areas not only for the relocation of housing schemes but also in terms of cultural and spiritual hub. The majority of the people in the area are dominated by the Indian Community. There are strong public transport routes linking the various suburban units to the Chatsworth Town Centre. The latter has flourished over the past twenty years with a mixture of commercial, retail, judicial and light industrial activities.

The transport system is very effective in Chatsworth. The existing taxi and bus routes to the Chatsworth Centre are easily accessible from the surrounding areas and further to the Durban City Centre. There is also an existing railway line close to the Town Centre linking different areas from Chatsworth to the inner city of Durban (Govindsamy, 2002: 19). The business hub of the Town Centre has a circular form of major arterials that has led to a fragmented urban design whereby various island sites have been created. Some of these sites have been developed in various ways, yet there is not a coherent interrelation among them. An architectural intervention may promote the formation of linkages of the existing developments to enhance the urban design of the area towards creating a community linkage not only of the surrounding context but also on the larger scale (Govindsamy, 2002: 20). The open space areas help in developing a public realm whilst addressing the community needs.

The site is zoned as a place of worship and the land is owned by the Sunni Razvi Society, Durban Branch.

URBAN ANALYSIS

ZIMBABWE
MOZAMBIQUE
BOTSWANA
NAMIBIA
SWAZILAND
NATAL
KIMBERLEY JOHANNESBURG
PRETORIA
NEWCASTLE
DUNDEE
LADYSMITH
PIETERMARITZBURG DURBAN
REPUBLIC OF
SOUTH AFRICA
LESOTHO
EAST LONDON
INDIAN SETTLEMENT IN SOUTH AFRICA
PORT ELIZABETH

NEW GULDERLAND
BUTHDALE
STANGER
GLEDHOW
GROUTVILLE
SHAKAS KRAAL
FINLEY MANOR
UMHLALI
SHEFFIELD BEACH
SALTROCK
BALLITOVILLE
TONGAAT
MAIDSTONE
NYAMHGA
KUPFONTEIN
CANELANDS
UMHLOTI
VERULAM
MOUNT EDGECOMBE
PHOENIX
UMHLANGA ROCKS
UMGENI
UMBILO
ISIPINGO
AMANZIMTOTI
KINGSBURGH
LLOVO
UMKOMAAS
UMZINTO
SCOTTSBURGH
EQUEFA
PARK RYNIE
SAWOTI BRAEMAR
ESPERANZA
SEZELA
MARBURG
PORT SHEPSTONE

● INDIAN SETTLEMENT IN NATAL COASTAL STRIP

CHATSWORTH
N2 FREEWAY
HIGGINSON HIGHWAY
CHATSWORTH TOWN CENTRE

MACRO SCALE: Main Access to Chatsworth
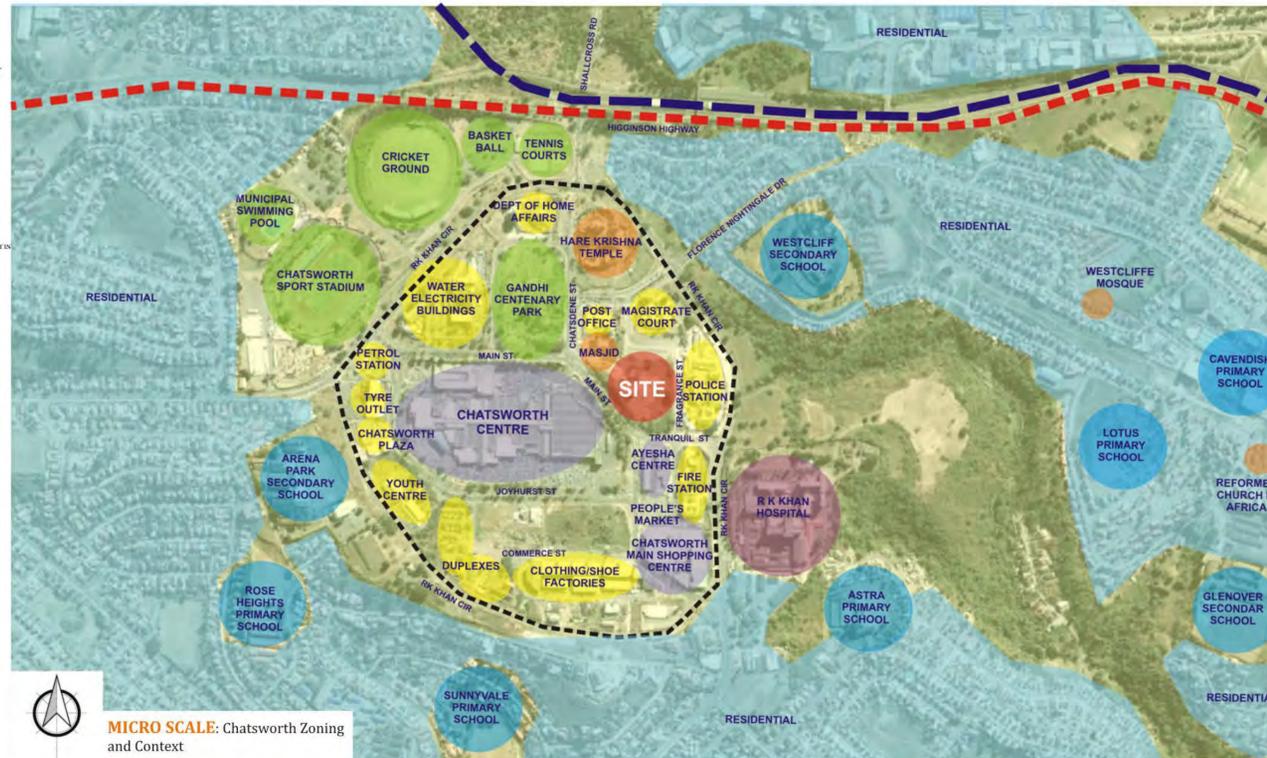
MICRO SCALE: Chatsworth Zoning and Context

RESIDENTIAL
CRICKET GROUND
BASKET BALL
TENNIS COURTS
HIGGINSON HIGHWAY
MUNICIPAL SWIMMING POOL
DEPT OF HOME AFFAIRS
HARE KRISHNA TEMPLE
WESTCLIFF SECONDARY SCHOOL
RESIDENTIAL
WESTCLIFFE MOSQUE
CHATSWORTH SPORT STADIUM
WATER ELECTRICITY BUILDINGS
GANDHI CENTENARY PARK
POST OFFICE
MAGISTRATE COURT
MASJID
RESIDENTIAL
CAVENDISH PRIMARY SCHOOL
PETROL STATION
MAIN ST
SITE
POLICE STATION
TYRE OUTLET
CHATSWORTH CENTRE
AYESHA CENTRE
FIRE STATION
LOTUS PRIMARY SCHOOL
CHATSWORTH PLAZA
ARENA PARK SECONDARY SCHOOL
YOUTH CENTRE
PEOPLE'S MARKET
R K KHAN HOSPITAL
REFORMED CHURCH IN AFRICA
DUPLEXES
COMMERCE ST
CHATSWORTH MAIN SHOPPING CENTRE
CLOTHING/SHOE FACTORIES
GLENOVER SECONDAR SCHOOL
ROSE HEIGHTS PRIMARY SCHOOL
ASTRA PRIMARY SCHOOL
SUNNYVALE PRIMARY SCHOOL
RESIDENTIAL

● RECREATIONAL
● PUBLIC/CIVIC
● EDUCATIONAL
● SITE
● CULTURAL
● COMMERCIAL
● MEDICAL
● RESIDENTIAL
- - - HIGHWAY
- - - RAILWAY
- - - MAJOR ARTERIAL

● SITE
● TRANSPORT NODE
- - - HIGHWAY
- - - RAILWAY
- - - VEHICULAR
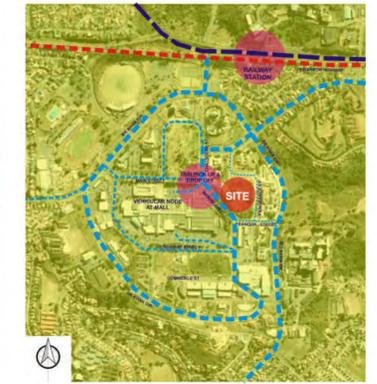
Vehicular Access to Chatsworth

● TRANSPORT NODE
● SITE
- - - PEDESTRIAN
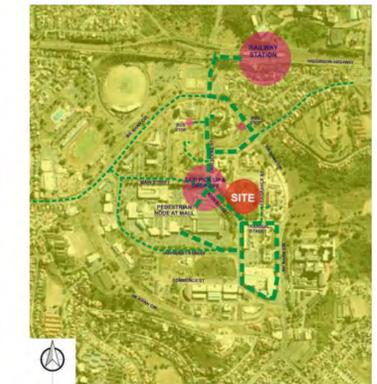
Pedestrian Access to Chatsworth

Figure Ground: Low density of commercial, retail and cultural activities; periphery: high density development of residential areas. Balance of open green spaces and commercial development in centre. Arterial grid layout unlike linear city blocks - arrangements are organic. Town Centre: heart of Chatsworth with linkages as arteries feeding out to the outskirts.

SITE ANALYSIS

A: North View to edge of site - trees and grass on sloping bank
B: North View to Magistrate's Court on northern block and the Hare Krishna Temple beyond
C: Post Office on northern block
D: Masjid for Sunni Razvi Society on northwest of site

E: View to the Gandhi Centenary Park at the southwest corner
H: South View from site showing the slope of site with the Ayesha Centre beyond
I: South View showing the elevated ground of site and pedestrian bank from west to east

F: Western View of edge of site with taxi drop off zone
J: East View to South African Police Service Chatsworth
K: East View showing the sloped bank and planted trees on the edge of site

G: Western View from site showing the flat grass land with the Chatsworth Centre beyond
L: North East View to Residential buildings along Florence Nightingale Drive
M: North View from site showing the Masjid and Hare Krishna Temple beyond

Views in and around Site

Climatic and Environmental Conditions on Site

Topography and Noise Factors around Site

Vehicular and Pedestrian Traffic around Site

URBAN DESIGN AND CONCEPTUAL DEVELOPMENT

LINKAGES TO EDUCATIONAL AND CULTURAL FACILITIES

CULTURAL/RELIGIOUS   RECREATIONAL   EDUCATIONAL   SITE

MICRO CONTEXT: IMMEDIATE COMMUNITY OF CHATSWORTH

MACRO CONTEXT: OUTSKIRTS, CITY OF DURBAN AND THE KWAZULU NATAL PROVINCE

SITE

CHATSWORTH TOWN CENTRE

The meditation centre caters for the **working and student culture**. The young generation is a target by the society to impart spiritual knowledge at a younger age. Students from various educational institutions will be invited to join meditation classes and practise yoga as well. Adults will be targeted from the working environment essentially and they will mostly use the centre during weekends while students will be able to participate during weekdays as part of their scholarly activities.

Since **spirituality is a universal doctrine**, all individuals from **all religions** and races are invited to embark on this journey.

Linkages:
Hence, the educational and cultural institutions will be linked to the site in this context. The aim is to primarily **serve the immediate community** and the **surrounding regions**. However, since the teachings are influenced by Hinduism and Chatsworth is a settled Indian community, it is foreseen that the local people will be keen to embark on this type of spiritual practice which is not available in the region since spiritual centres are located far away from the area as revealed an aerial map analysis of their locations.
On another level, the centre will reinforce the connection between the micro and macro context of not only the region but the entire province.

AIR		WATER
	SKY	
EARTH		FIRE

5 ELEMENTS OF MATTER IN VASTU SHASTRA DESIGN

Concept
"Interpreting Vastu Shastra to create balance in a spiritual environment"

Design Principles of Vastu Shastra
- universal doctrine, applies to the South and North hemisphere, it is based on planetary movement
- it has scientific and cosmic principles, design principles are the same in both hemispheres, planets are pertinent to Gods in Hindu religion
- the Mandala system is depicted from the 9 planets and functions are zoned according to the ruling Gods of those planets
- orientation is dealt with the particular place when the Indian principles of Vastu Shastra are applied to create energy flow spaces.
- main principles are:
- sacred place to be at north east of site; based on the cosmic man, its head is on northeast, symbolising consciousness
- creation of **axes** at cardinal points
- arrival at a quiet inner focal point, through **layers of noise to tranquility**
- **main entrance from east**, direction of sun rise, and represents energy
- **inner core** of mandala must be devoid of major construction, it is the source of energy in the mandala system
- spaces to incorporate **5 elements of matte**r: air, water, sky, fire and earth
- create open-to-sky spaces (Correa)
- ritualistic movement through spaces
- creating transitional spaces

"balance" = between material and immaterial worlds
outer core (flesh) *vs* inner core (soul)
layering of various bodies (7 bodies)
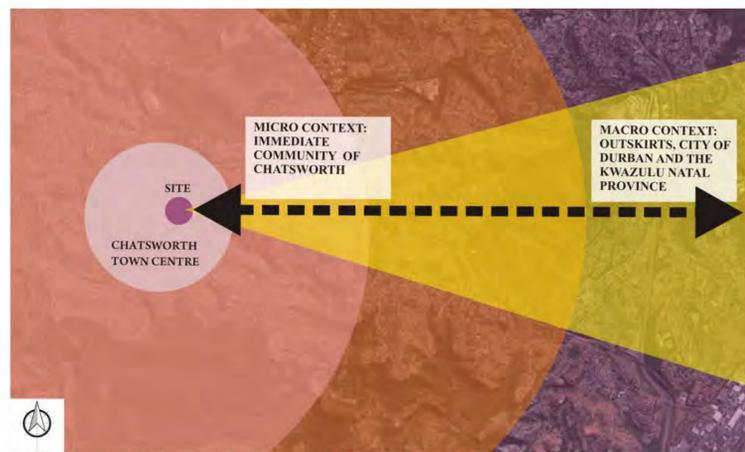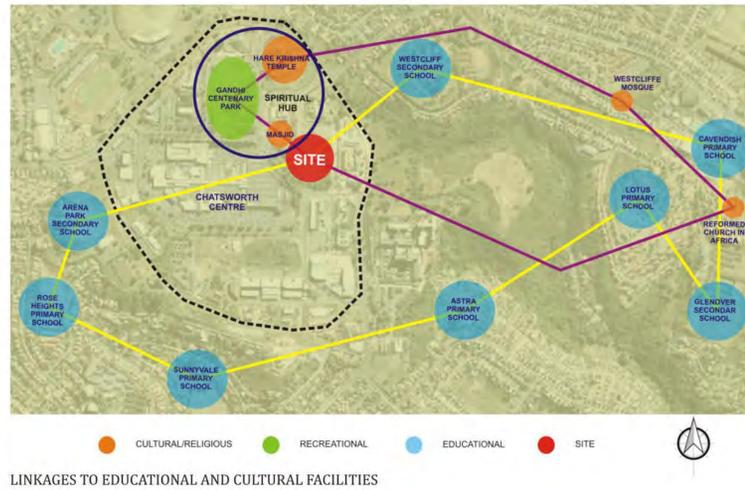
DESIGN OF VASTU MANDALA: 8X8 GRID MODULE WITH 9 INNER SQUARES - 9 PLANETS
An 8x8 grid module is preferred for spiritual buildings.

8 x 8 GRID   SITE WITH 2 m CONTOURS   VASTU COSMIC MAN

9 PLANETS   9 SQUARES INTERLOCKING   CENTRAL CORE AND SQUARES AT CORNERS
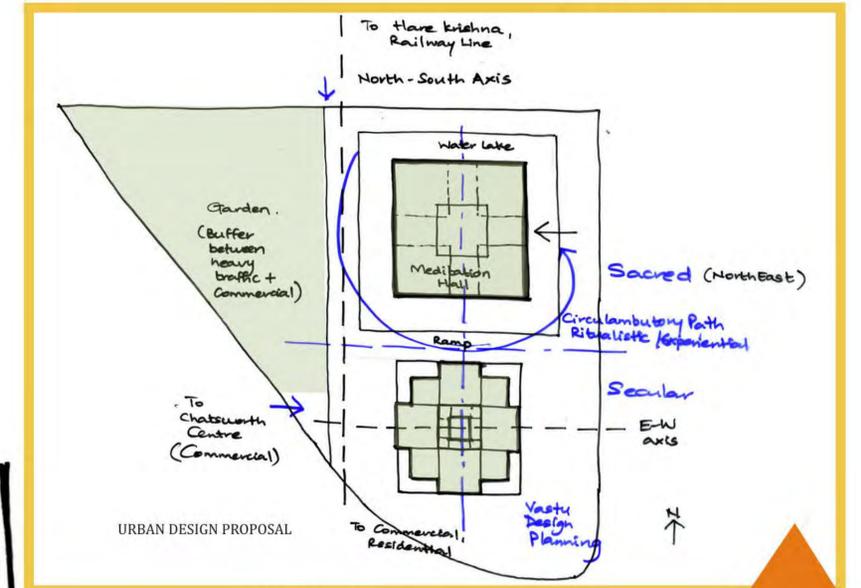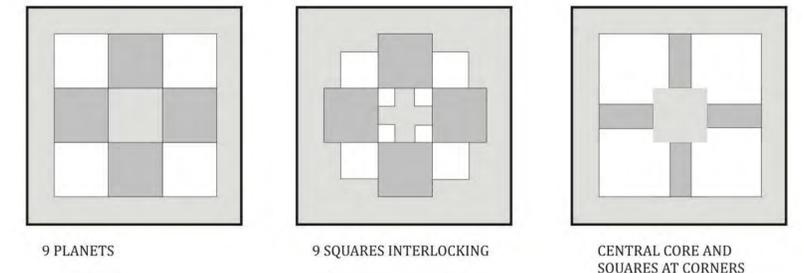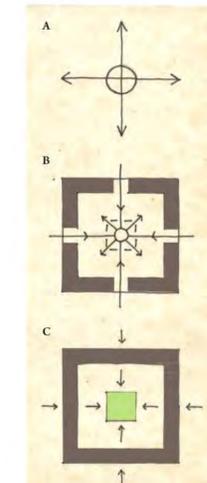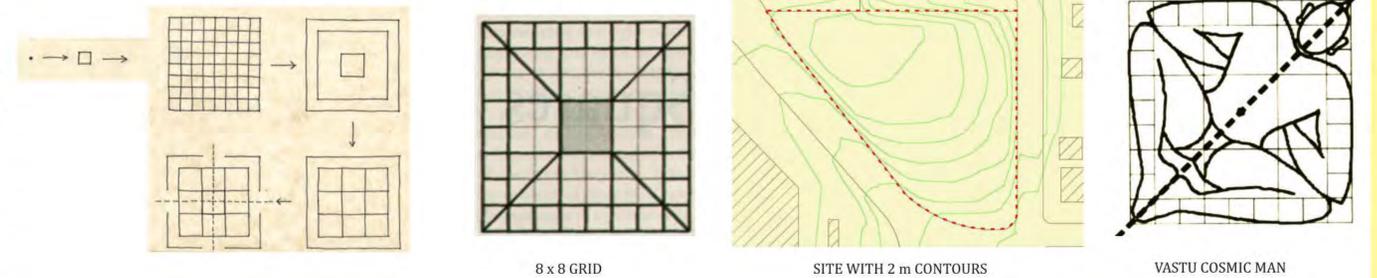
A: Urban Linkages & Axes at cardinals

B: Creation of a buffer zone around perimeter of site to reduce noise level

C: Arrival to an inner quiet and focal point on site - layering from noisy to tranquil space

URBAN DESIGN PROPOSAL

Ritualistic route

Cleansing:
(water symbol of purity)

Chaotic world   Soul

Processional journey through layers

Application of Yantra - geometrical representation
Triangular Yantra = duality
- harmony (shape)
- rhythm (layers)
- balance (in a chaos surrounding)
Normal triangle= represents fire with masculine power, static form

Inverted triangle= feminine, symbol of water having kinetic dynamics

Triangular Yantra

7 bodies of spiritual evolution (numerological figure) - layers of evolution

The upper and lower worlds of evolution and consciousness level

The 7 chakras in the human body

CONCEPTUAL DEVELOPMENT

CLIENT

The Satyam Gyanam Anandam Society (SGAS) is a universal spiritual organization located in the island of Mauritius.

The SGAS is an NGO that was founded by Swami Paramananda in 1988. Swami Paramananda is a spiritual Master who has attained enlightenment and is imparting spiritual knowledge to individuals, not only in Mauritius but also in Europe, Asia and America. SGAS has affiliates in UK and Canada.

The society's objective is to provide opportunities and guidance to seekers to discover their inner self through the science of meditation. The society is very much active on the local soil and international forums. There are two meditation centres in Mauritius already. The vision of the master is a global mind transformation, where the entire world needs to participate.

The society wishes to extend its affiliation in South Africa where the culture is very rich. Already, there are an increasing number of spiritual seekers in the country.

A new meditation centre is required to propagate spirituality and bring about a radical change in the

ENVIRONMENTAL DESIGN CONSIDERATIONS

Passive design and implementation of technology: climate appropriate design

Use of Rammed Earth

Rammed earth provides has insulating properties and is beneficial as a noise barrier. The western edge of the site will have rammed earth walls acting as buffer. Trees will be planted on that edge to soften the urban fabric on that edge but also to reduce noise level. Organic garden will be set up on that edge and terraced downwards. The coutours on the site will be moulded to create a buffer zone against the street edge and trees will be planted on those edges, providing natural fresh air in the environment whilst reducing the noise level.

Orientation of Buildings

The blocks will be orientated to have maximum daylight and also passive design includes natural cross ventilation in spaces that require fresh air especially for spiritual practices. The areas will be accessed as which ones require air conditioning, mechanical ventilation and natural ventilation. 60 % of the usable area should be naturally ventilated in a passive design scheme. The main areas in need of natural ventilation are the meditation hall, painting, dancing studio, eatery area is openable to the garden while residential units have cross ventilation too.

Courtyard Spaces

Courtyard spaces have environmental characteristics apart from functional and social activities that occur. Courtyards will consist of shaded trees and scented plants. Water pools are also provided. Trees and water create a cooling effect and is beneficial in a hot humid climate.

Windows

Windows to be provided at 5% per floor area, for example in 100 m^2, 5 m^2 to be provided with openable fenestration.

Rain Water Harvesting

Rain water will be collected on site. The water pool around the meditation hall is not only for aesthetic purposes but also serves as an attenuation tank. Rain water is collected and is reuse to flush toilets and for irrigating organic plants. Essentially rain water runoff is collected in the attenuation tank which is also serves as a water feature. The attenuation tank allows water to gradually soak in the soil. Here water is stored in water tanks in the basement and pumped to flush tanks. A ground source heat pump is a desirable medium as compared to solar pumps.

Materials

From precedents especially in India where there is a hot humid climate as in Chatsworth, Vastu design has a certain type of shape of building and it is based essentially on climate. For instance, grass in courtyards and stacks providing ventilation and also the venturi effect of air flow in buildings. There will be use of brickwork and concrete. Brickwork over a time period of 100 years is best while concrete is suitable for a time period of 50 years. Since clay requires firing and there is more energy consumption resulting in a high embodied energy in brickwork. Concrete does not require that hence it has a low embodied energy but if we look at cement, then that process requires energy consumption. Other material to be considered is timber that will be sourced locally and protected when in use. It is an environmental friendly material. Resocrete is mostly used as it is 98 percent a green building material.

SCHEDULE OF ACCOMMODATION

| Function	Area/sq.m
Pyramid	
Meditation Hall	1139
Ablutions	73
Administration/Educational/ Residential Block	
Ground Level	
Boardroom	27
Consultation Room	20
Waiting Area	22
Ablutions	61
Bin Area	9
Store	14
Kitchen	30
Refreshment	91
Offices	45
Workshops	46
Bookshop	33
Seminar Room	91
Classroom	34
Store	13
Subtotal	536
First Level	
Library	87
Recording Room	31
Control Room	23
Music Recitals	100
Ablutions	61
Gymnasium	144
Showers	34
Tai Chi	91
Change Room	9
Subtotal	580
Second Level	
Visitors' Accommodation	424
Total	2752
Parking (130 bays)	4248
Circulation (25%)	688
Net total	**7000**
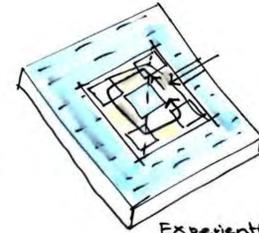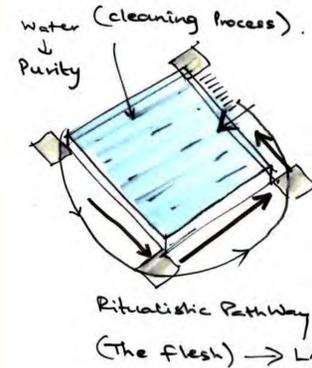
Ritualistic route in outer and inner spaces (continuity)
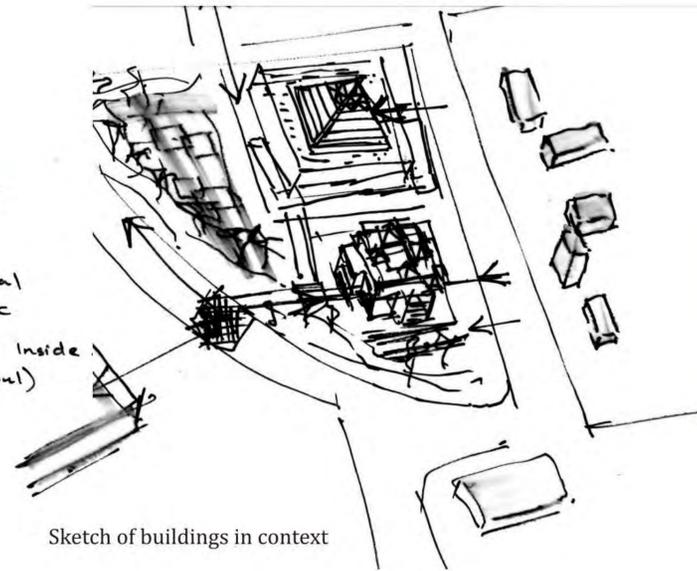
Sketch of buildings in context
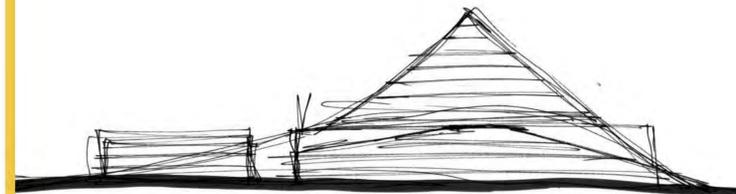
Sketch with layers and bands with existing contours
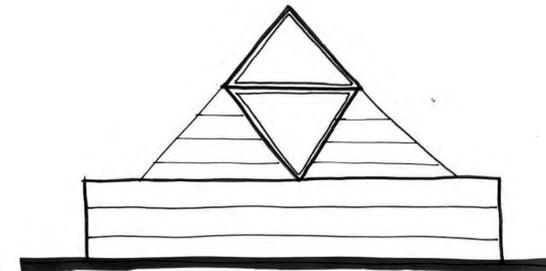
Sketch of yantra on building facade

Architectural language of buildings
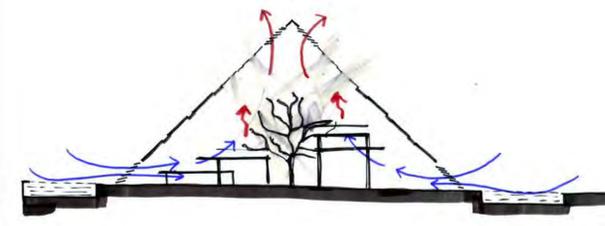
Air flow through the building

5 Qualities of Sacred Space

1. MEANING OF SPACE

SENSE OF COMPOSITION (SACRED ARCHITECTURE)
-INTEGRITY
(object not connected nor dependent)
-TOTALITY
(each detail is indispensable)
-SYMMETRY
(connection of elements)
-INFLUENCE
(distinct & unique object)
These conditions constitute the whole.
-Distinction between served and dominant spaces
-Composition of fixed points: constant values that form the structure of any composition
-Create ordered movement in space by establishing symbolic value through original expression
-Denominator of space is order that is enhanced by aesthetic and detail

2. RELATIONSHIP OF SPACE

-Relation between forms: materials or symbols
-Use of axes, perspectives, geometric
-Establish a relation between man and nature by judicious use of materials

THE RITUALISTIC PATHWAY (EXPERIENTIAL)
-For example, the Parthenon, movement through a sacred pathway up to Acropolis
-Transition spaces: elements clearly defined, with variations of air & light
-Buffer zones are created to reduce the level of noise from outer urban setting to inner serene environment through transitional spaces
-Architecture created by understanding of culture and climate of spaces
-Processional unfolding of spaces: pedestrian movement - axial or off-axis; like a river flowing in spaces
-Dimensions consisting of beauty & materials express the relationship with the Non-manifest world
-Use of Vedic principles of Yantra and Vastu Shastra (mandala) to depict the Non-manifest world

3. INTERCONNECTION OF SPACE

SENSE OF PLACE
-All elements must contribute to make a coherent whole
-Plan is determined by an ensemble of parts
-Plan is a reflection of the rhythm of life
Vastu Shastra is the science of construction in Indian architecture. It is used to create human comfort by designing spaces that allow positive energy flow by appropriate positioning of functions according to the rules of cosmology. The Vastu Purusha Mandala is a plan that represents the cosmos symbolically. It is divided into nine squares that represent the nine planets. The 8x8 grid is chosen as it is beneficial for any spiritual building

4. COLOUR AND TEXTURE OF SPACE

LIGHT & APPEARANCE (TACTILE QUALITIES)
-Give architecture character of coherence
-Explore solids & voids
-Volume of light transformed in 3D rather than in plane
-Architecture marked by human presence in space
-Urban windows: large square cut-outs on street facades framing views of urbanscape representing visual & gesture
-Bring back into balance the spatial tensions created by built form through murals & sculptures
-Set up of dialectic between built form & virtual imagery by the use of colours & realistic images that add layers of metaphorical & metaphysical dimensions to architecture

5. INTERDEPENDENCE OF SPACE

SENSE OF SPACE
-Spatial elements in plan must be in unity and interdependent of form of plan
-Unity is not abstract; it has a feeling of function, movement, light and human engagement (GENIUS LOCI)
- Each area of space has unique identity & character

DESIGN DEVELOPMENT

POST OFFICE

MAGISTRATE COURT

GANDHI CENTENARY PARK

MASJID

MAIN STREET

LVL 0 000

10 M HIGH RETAINING WALL

LVL 0 000

WATER LAKE

ORGANIC GARDEN

LVL 0 000

MAIN ENTRANCE
LVL 10 000

MEDITATION HALL

CHATSWORTH CENTRE

SAPS

LVL 2 520

LVL 5 000

LVL 7 480

DELIVERY AREA
LVL 0 000

PEDESTRIAN ACCESS
LVL 0 000

LVL 0 000

DROP-OFF AREA
LVL 0 000

BASEMENT ACCESS
LVL 0 000

7.5 M BUILDING LINE

SITE BOUNDARY

TRANQUIL STREET

AYESHA CENTRE

FIRE STATION

SITE PLAN 1:500

DESIGN DEVELOPMENT

WATER TANKS AND PUMP

NATURAL AIR EXTRACTOR ABOVE

FIRE ESCAPE

25

118

NATURAL AIR EXTRACTOR ABOVE

26

34

53

54

74

BASEMENT PARKING
130 BAYS

33

CHILLER ROOM

75

DISABLED DISABLED
78

SECURITY CONTROL

DISABLED DISABLED
90

DISABLED DISABLED
88

VERTICAL CORE

DISABLED DISABLED
99

77

MOTOR BIKES/ BICYCLES

130

100

117

NATURAL AIR EXTRACTOR ABOVE

LVL -4 000

EGRESS

ENTRANCE LVL 0 000

BASEMENT FLOOR PLAN 1:200

DESIGN DEVELOPMENT

B

LVL 7 480

LVL 2 520

LVL 5 000

SWITCH ROOM

METER ROOM

FIRE ESCAPE

FIRE ESCAPE

LOUVRE STRUCTURE TO VENTILATE BASEMENT

GRATING TO VENTILATE BASEMENT

GRASS

BOARD ROOM

GRASS

DELIVERY AREA LVL 0 000

FEMALE ABLU

MASTER'S CONSULTATION

BIN AREA

STORE

PARA

FIRE ESCAPE

WAITING AREA

DUCT

REMOVABLE BOLLARDS

MALE ABLU

LVL 0 000

KITCHEN

GRASS

OFFICES

GRASS LVL - 0 200

REFRESHMENT AREA

DROP-OFF AREA LVL 0 000

WATER FEATURE

WORKSHOP/ PAINTING

SUNKEN COURTYARD

GRASS

PEDESTRIAN ACCESS LVL 0 000

LVL 0 000

WATER POND

VERTICAL CORE

STORE

LVL 0 000

DISABLED LANE

BOOKSHOP

SEMINAR ROOM 72 SEATS

CLASS ROOM

DUCT

GRASS

GRASS

DISABLED BAY

DISABLED BAY

GRATING TO VENTILATE BASEMENT

ACCESS TO BASEMENT PARKING LVL 0 000

B

GROUND FLOOR PLAN 1:200

DESIGN DEVELOPMENT

FIRST FLOOR PLAN 1:200

Labels in plan: LIBRARY, FEMALE ABLU, PARA, RECORDING ROOM, FIRE ESCAPE, LVL 4 000, MALE ABLU, CONTROL ROOM, DUCT, TAI CHI STUDIO, COURTYARD BELOW, MUSIC RECITALS, CHANGE ROOM, STORAGE, LVL 4 000, VERTICAL CORE, SHOWERS, WEIGHTS, CARDIO, DUCT, GYMNASIUM, SHOWERS, BENCHES

SECOND FLOOR PLAN 1:200

Labels in plan: SPIRITUAL MASTER, FIRE ESCAPE, STORE, TEMPORARY VISITOR ACCOMMODATION, COURTYARD BELOW, VERTICAL CORE, LVL 8 000, CARETAKER

DESIGN DEVELOPMENT

ABLUTIONS AT LOWER GROUND FLOOR PLAN 1:200
LEVEL 7, 000

LVL 7 000

FEMALE ABLUTION

PARA

MALE ABLUTION

WATER PUMP

B

WATER LAKE

TO ABLUTIONS BELOW GROUND

GRASS YOGA/CHANTING

FALLING WATER

MEDITATION PLATFORM LVL 11 400

YOGA/CHANTING GRASS

GRASS

SPIRITUAL MASTER

BANYAN TREE

MEDITATION AREA 500 PEOPLE

MAIN ENTRANCE

REMOVAL OF FOOTWEAR

YOGA/CHANTING GRASS

LOTUS POND

REGISTRATION

MEDITATION PLATFORM LVL 10 600

YOGA/CHANTING GRASS

YOGA/CHANTING GRASS

MEDITATION PLATFORM LVL 10 600

A

DISABLED LANE

B

PYRAMID GROUND FLOOR PLAN 1:200
LEVEL 10, 000

MEDITATION PLATFORM LVL 11 400

MEDITATION PLATFORM LVL 16 000

MEDITATION PLATFORM LVL 13 000

LOTUS POND BELOW

MEDITATION PLATFORM LVL 14 400

A

PYRAMID UPPER FLOOR PLAN 1:200
AT LEVEL 10, 000

241

DESIGN DEVELOPMENT

EAST ELEVATION 1:200

SOUTH ELEVATION 1:200

DESIGN DEVELOPMENT & TECHNICAL RESOLUTION

Section BB

30 000 TOP OF PYRAMID

16 000
14 400 FIRST LEVEL

10 000 PYRAMID GROUND LEVEL

WATER LAKE/ ATENUATION TANK

MEDITATION PLATFORM

MEDITATION PLATFORM

SACRED PLACE

FALLING WATER

MEDITATION PLATFORM

FGL LVL 10, 000

WATER LAKE/ ATENUATION TANK

CANOPY

FGL LVL 5, 000

RAMP

CANOPY

NGL 0 000

TOP OF ROOF 16 182

VISITOR'S UNIT

PERGOLA

VISITOR'S UNIT

SECOND LEVEL 16 182

LIBRARY

CONTROL ROOM

MUSIC RECITALS

SHOWERS

GYMNASIUM

FIRST LEVEL 16 182

BOARD ROOM

COURTYARD

REFRESHMENT

WATER FEATURE

SEMINAR ROOM

ACCESS TO BASEMENT PARKING

GROUND LEVEL 0 000 NGL

BASEMENT PARKING

BASEMENT LEVEL -4 000

I H G F E D C B A

SECTION BB 1:200

Section AA

'KOOL ALUMINIUM' 70s louvre system with supporting rolls fixed to aluminium ribbed panel

Aluminium cover plate to manufacturer's details

1000 mm high varnished timber balustrade

Off-shutter concrete slab with screed supported on 450 mm x 450 mm reinforced concrete columns

Plasterboard coated painted and hunged from C140 x 60 Steel Channel to structural engineers detail

Reinforced concrete surface bed to struct. engineer's detail on 250 micron usb green waterproofing membrane to overlap with compressible foam on min. 50mm sand blinding

Concrete foundations to engineer's detail

Laminated glass aluminium powdercoated framed windows with coloured opaque film strip in between double glazing to specialist's detail

Reinforced concrete ring beam supported onto reinforced concrete column tapered to engineer's detail

Laminated glass aluminium powdercoated framed windows to specialist's detail

Reinforced concrete beam with face 650 mm and 150 mm spanning to tapered reinforced concrete column

15 mm resocrete cladding panels fixed onto steel structure using anchor mountings with white marmoran finish

Concrete pavers on bedding sand

Timber slatted door with coat of weather resistant paint

ORGANIC GARDEN

WATER LAKE/ ATENUATION TANK

MEDITATION PLATFORM

MEDITATION PLATFORM

SACRED PLACE

MEDITATION PLATFORM

FALLING WATER

ABLUTIONS/ WATER TANKS

CANOPY

NORTH ENTRANCE VIA RAMP

WALKWAY

MAIN ENTRANCE

FGL LVL 10, 000

NGL 0 000 ROAD LEVEL

CHATSWORTH SAPS BUILDINGS

30 000 TOP OF PYRAMID

16 000
14 400
13 000 FIRST LEVEL

10 000 PYRAMID GROUND LEVEL

SECTION AA 1:200

TECHNICAL RESOLUTION

TOP OF PYRAMID
30 000

Powdercoated aluminium capping fixed onto C300 x 140 Steel Channel to structural engineers detail

'KOOL ALUMINIUM' 70s louvre system with supporting rails fixed to aluminium ribbed panel

Aluminium closer panel to manufacturer's details

Laminated double glass 6 mm thick aluminium powdercoated framed windows with coloured opaque film strip in between double glazing to specialist's detail

Aluminium cover plate to manufacturer's details

Reinforced concrete ring beam supported onto reinforced concrete column tapered to engineer's details

Reinforced concrete slab with screed supported on 450 mm x 450 mm reinforced concrete columns painted brown

12 mm thick plasterboard wall cladding panels painted and hunged from C140 x 60 Steel Channel to structural engineers detail

6 mm double glazing with blue tint colour powdercoated aluminium frame window to specialist's details

15 mm resocrete cladding panels fixed onto steel structure using anchor mountings with white marmoran finish

16 000

MEDITATION PLATFORM

6600

Reinforced concrete beam with face 650 mm ad 150 mm spaning to tapered reinforced concrete column

14 400

1000 mm high varnished timber balustrade, with 100 mm x 50 mm wooden handrail bolted onto 100 mm x 100 mm timber posts by steel angle plates.
Screed floor finish

FIRST LEVEL
13 000

Off shutter concrete surface

500 mm x 500 mm Concrete pavers on bedding sand with an expansion gap of 10 mm apart

Sliding timber slatted door with coat of weather resistant paint, slats 120mm x 25 mm at 25 mm interval at 10° to horizontal for water run-off butt joint and glued with epoxy to 85 mm wide timber frame.

Reinforced concrete retaining wall to engineer's details

SACRED PLACE - SPIRITUAL MASTER

FALLING WATER

Concrete foundations to engineer's detail

Reinforced concrete surface bed to struct. engineer's detail on 250 micron usb green waterproofing membrane to overlap with compressible foam on min. 50mm sand blinding

Screed to falls, waterproofing and drainage all to engineer's details

MAIN ENTRANCE WALKWAY

PYRAMID GROUND LEVEL
10 000

FGL

500

WATER LAKE/ ATENUATION TANK

existing contour line

rainwater pipe from water lake to water tanks
water to irrigate organic garden

DETAIL A 1:50

DESIGN DEVELOPMENT

SOUTH WEST VIEW

DESIGN DEVELOPMENT

SOUTH EAST VIEW

DESIGN DEVELOPMENT

INTERIOR VIEW OF PYRAMID

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APPENDICES

APPENDIX 1: INTERVIEWS

Appendix 1.1: Interview Questions

1. What is your name and nature of work?

2. How long have you been engaged with the organization?

3. Is the institution easily accessible? How do most visitors travel to the place?

4. The complex is big and spread out. Is it easy to circulate from one block to the other?

5. Do you think the spaces have been well planned? Explain how.

6. Was the vegetation preserved in the natural state or have they been planted after construction?

7. Are there any spiritual activities conducted in the nature?

8. What contributions does landscaping bring to the seekers? How do they use the outdoor space?

9. How do the seekers socialise amongst each other?

10. Does the building conform to any architectural style, how was it designed?

11. All the buildings have the same texture, finishes and colours. What inspired the selection of the colours, what do they signify?

12. Are natural elements like water, sky and light included in the building? How and do they have any symbolic meaning?

13. Do the interior spaces have daylight and adequate ventilation?

14. Cleaniliness is said to be godliness. How often are the buildings maintained and cleaned?

15. Are the interior spaces designed to be in tranquil silence and attract positive vibrations? How?

Appendix 1.2: Interview of Respondent 1

1. What is your name and nature of work? (Note name of interviewee is kept unanimous)

My nature of work is running of a printing press under the leadership of Swami Sahajananda.

2. How long have you been engaged with the organization?

Since the age of 6 years old and now I am 32.

(You mean you stay on site)

Living full-time in the ashram, dedicate my entire life to its mission and to serve humanity.

3. Is the institution easily accessible? How do most visitors travel to the place?

The institution is very accessible through all of Sunday; embrace all religions, castes and creeds.

They do travel by their own transport to this organisation.

4. The complex is big and spread out. Is it easy to circulate from one block to the other?

It is very accessible to each block because Swami Sahajananda has designed this huge complex to suit the needs of all devotees.

5. Do you think the spaces have been well planned? Explain how.

I would say it is very well planned because God works through the saints and sages and they know what is best for us who live here and for the devotees who come in.

6. Was the vegetation preserved in the natural state or have they been planted after construction?

(I mean where they already here, plants that have been kept?)

Ya, what Swamiji has done is when he started 1985-1986, he decided to keep the natural look of the entire complex and he actually put a Sivananda Avenue in between trees because he said we should not be trapping trees and he was very close to nature, Swami Sahajananda. He has created a huge impact on the devotees and ourselves, individuals here.

7. Are there any spiritual activities conducted in the nature?

(I mean do you have any spiritual practice that is done outside, not inside the building but outside in the nature, example yoga)

Everything is done in the complex nothing is done externally from the ashram besides our branches, in KZN we got 14 branches

8. What contributions does landscaping bring to the seekers? How do they use the outdoor space?

(I mean how the space has been designed, how does it help the seekers, does it have any positive effect?)

It does have a positive effect. One, being in a natural environment. Two, is that it is overlooking the Indian Ocean. Three, Swamiji has mentioned that the natural vegetation around us, by looking at landscapes and looking at water it creates a very calming effect on our mind and therefore people enjoy coming here and feeling the serenity, the joy, the bliss in our complex.

9. How do the seekers socialise amongst each other?

(Example, apart from conducing spiritual practices, do they socialise while having a meal or any kind of discussion that goes around, in terms of their social growth?)

Do that pertain to the people that live here full time?

Not necessarily, also people that come in, like devotees

We embrace all of them that come in to our organisation. What is good about talking to one another is that we are able to share information on what happens to the outside world because we as full-time renunciates like to keep ourselves updated all the time especially on the economic world and the spiritual part of life because there is a steady decline of spirituality. I would say moral and spiritual degeneration have taken place as the whole world is notified. With that in mind we are able to talk to people and encourage them to use our spiritual literature by moving up that spiritual decline.

10. Does the building conform to any architectural style, how was it designed?

The building as I said earlier was designed by Swami Sahajananda and God works through the saints and sages. Whatever design one sees here in this complex is purely by divine grace and the way it is situated towards the ocean and some buildings facing the north, all was put in place by Swamiji. As the building was coming up if he felt that the door was not put in the right position he would say to the guys move this door and put it in another area. According to the Vastu principles, Swamiji always encouraged our builders to use that method.

11. All the buildings have the same texture, finishes and colours. What inspired the selection of the colours, what do they signify?

That is to do with the heavens, I would say. Swamiji once mentioned that the colours he selected here at SICC are what one sees when one reaches the heavens and hence they are visionaries, people are able to see the future. We believe strongly in that.

The colours that we have used are the primary colours. Blue symbolizes peace, yellow symbolizes love and green symbolizes tranquillity. And the building is quite outstanding as well. The peaceful calming effect as one enters the premises.

12. Are natural elements like water, sky and light included in the building? How and do they have any symbolic meaning?

Not really a symbolic meaning but probably from Swamiji's standpoint yes.

Where we have skylight roofs, the buildings were a bit dark in those areas, so Swamiji decided to put those skylight roofing but other than that I will not say there was something symbolic. I would not be able to define that.

Water, it creates a very positive impact on one's self. In our case, Swamiji has brought down Mother Ganga and her waters in four different points in the ashram and that keeps our spirituality in our complex. We worship Mother Ganga daily. We also went as having the Shembe following; they got about five million followers in South Africa and we share the same views about water. They worship water. They are the blacks in our country. We put huge Ganga pools where they can baptise their people. As I said, water creates a very calming effect on the mind. It is more like water therapy if one goes in Bhagirathi he will be able to see that.

13. Do the interior spaces have daylight and adequate ventilation?

Yes. I would say so. The way our windows are placed, we have got blinds in our buildings. Considering skylight roofs in certain areas it creates sufficient light in our areas.

(In terms of ventilation, circulation of air into the spaces, is it too hot inside or is it too cold?)

Circulation of air, we have looked at that quite seriously and you might have in a few buildings, you know, air circulation problems but we use extractors and air conditioners to compensate for that.

14. Cleanliness is said to be godliness. How often are the buildings maintained and cleaned?

Cleanliness is very close to Swamiji. Without cleanliness, he says that God is no way near. That also creates a positive impact on the mind. In this case here the ashram, you get devotees who come from our 14 branches that w have and each has been allocated to a building. They take care of those areas and they clean quite regularly. Every Sunday devotees are here to clean in huge numbers.

15. Are the interior spaces designed to be in tranquil silence and attract positive vibrations? How?

Yes the interior spaces are designed for that. If you look at Guru Kripa, for example, Swamiji has put deities on either side; you walk through an arched area and down an aisle. On either side you would see there are huge spaces for meditation purposes and that was created by Swamiji because he felt that meditating in groups and praying together achieve much more when one prays alone in a confined area in a smaller group. That is why you see most of the areas are huge halls to embrace all religions and create the good vibrations in and around the complex. By that we can see that one recharges the battery every time he comes into a spiritual environment very much attractive to his own home.

Appendix 1.3: Interview of Respondent 2

1. What is your name and nature of work? (Note name of interviewee is kept unanimous)

I am a retired lecturer at the University and I am now full time with the Divine Life society.

2. How long have you been engaged with the organization?

About 28 years.

3. Is the institution easily accessible? How do most visitors travel to the place?

For me, it is easily accessible, I travel by car but there is no public transport to the institution. Most people who come travel by their private vehicles.

4. The complex is big and spread out. Is it easy to circulate from one block to the other?

Yes and no. It depends what people want to see. But it is designed in such a way that the prayer hall and the dining facilities, which are the most important centres during satsang, those two are easily linked.

5. Do you think the spaces have been well planned? Explain how.

Well I suppose if the whole thing was planned simultaneously it would have been planned much better than it is at the present moment. But it grew in stages, the whole building was built in different stages but each stage was planned nicely. As the new land was acquired, then those buildings came up thereafter. So, planning had to be done in an ad hoc basis.

6. Was the vegetation preserved in the natural state or have they been planted after construction?

Originally the place was a sugarcane farm. Sugarcane had to be removed in order to give way to the building. There were trees originally again on the site and those trees have all been completely preserved. A lot of flower plants have been grown onto that soil. I cannot say whether they are natural because we know it to be sugarcane land. The flowers plants have come up very nicely and growing very well. The person who is responsible for buying the plants tries very hard to ensure you got indigenous vegetation.

7. Are there any spiritual activities conducted in the nature?

Yes, we have yoga camp once a month and we have a satsang that all the branches join together on another day of the month.

8. What contributions does landscaping bring to the seekers? How do they use the outdoor space?

Landscaping contributes towards a serenity and peace of the whole environment. We have as I said earlier we have a lot of trees and under those trees we have put park benches. Often people sit down just enjoy the shade, the coolness and the beauty of the trees. These trees are very large leaved and large branched trees. They provide a very good environment for peace.

9. How do the seekers socialise amongst each other?

(For example, do they socialise during any educational talks or discussion or during dining times?)

During the yoga camps, what usually happens is, presentations are made and the seekers, they sit in small groups and they answer questions which are pre-prepared. They have discussion sessions like that. I do not know whether you would call that

socialising. But certainly they communicate in smaller rather than in a large group that way. Of course during dining room sessions they also socialise. We start the Sivananda satsangs at half past eight but satsang itself starts at ten o'clock. So for one and a half hours, people move around and talk to each other. So socialisation takes place during that time.

10. Does the building conform to any architectural style, how was it designed?

I cannot answer that, I have no idea. All I know is that the Swami who designed this, he would give instructions on what to do and how to do it. When he was asked this question he simply said all the instructions came from God himself because he used to pray as the building was unfolding and ask for guidance. Whatever came in his consciousness he would proceed in that way.

A good example is the Ganga Rani. It started off as a children's swimming pool and then he said let us make it larger. After that the thought came that we should make it into a Ganga pool to bring water from the Ganges and consecrate it. So eventually it became a shrine. But the whole thing unfolded over a period of two years or so. It did not happen all at once.

11. All the buildings have the same texture, finishes and colours. What inspired the selection of the colours, what do they signify?

Again I am no parity on colours but I do know they were designed to look very pretty and colourful. They do not have perhaps the normal curves and a variety of different types of shapes as some modern buildings have. Many of them are very angular and straightforward with the exception of a few buildings like Guru Kripa which has got an arched wall and the various swimming pools that we have put into place. The colours on the wall tiles, many of them are green and white. There is something very spiritual about green that our Swamiji liked very much. I think it has got a lot to do with Divine Mother who represents creativity and productivity. Greenness is the colour of the earth, the trees, the grass and so on. All our roofs are green, the wall tiles many of them are green with a few exceptions.

12. Are natural elements like water, sky and light included in the building? How and do they have any symbolic meaning?

We have lots of water features; we have four pools as it is. These pools are consecrated with water from the holy river Ganges. They definitely have a spiritual meaning. We worship Mother Ganges as the Divine Mother herself. Water is the base of all life. We believe God herself has come down in the form of water to sustain us. Water is a very important aspect of our worship. We worship visibly in the form of water rather than abstract mother.

Also as far as the light features, there are some sections of the building where you have light coming from the outside so that it gives you a natural light. Other places of the building do not have natural light but they are all lit up well. All of them are done in order to make it as natural as possible.

13. Do the interior spaces have daylight and adequate ventilation?

(Sometimes it feels a bit hot inside).

Perhaps we do not have enough ventilation. Some of the halls, especially the swimming pools which are large, are very hot but part of the reason for that the buildings are extremely wide. One of them is 25 metres wide. It meant that we could not put gables. We were obliged to put light roof material, not tiles because the structure was not strong enough to hold the tiles. The moment you have metal obviously the temperature goes up. Both those pools are very large but the roofs are made up of materials that gather heat and that is problematic. But then since we use it only twice a month our Swamiji said it does not matter, let the people struggle a bit.

14. Cleanliness is said to be godliness. How often are the buildings maintained and cleaned?

Cleanliness is very important in our ashram. It is hard to maintain and keep it clean. We have two major functions each month both on Sundays and the days preceding that on

Saturdays devotees come in large numbers; they clean up every nook and cranny of the building so that it is readily available for the next day.

15. Are the interior spaces designed to be in tranquil silence and attract positive vibrations? How?

I do not think our Swami went and did a literature survey on that. He simply created a lot of halls so that people could meditate. The method of doing it was to get the right colours so that it could be used for meditation. He carpeted the whole area so that they can sit in comfortable postures. Sometimes music is played and other times the water features – the sound of the water – also help in meditation. These are different aspects which were taken into account to build the meditation halls. As far as possible we try to maintain silence in the buildings; we got signs all over the place so that people can do their meditation without interruption.

Appendix 1.4: Interview of Respondent 3

1. What is your name and nature of work? (Note name of interviewee is kept unanimous)

I am a medical practitioner.

2. How long have you been engaged with the organization?

35 years

3. Is the institution easily accessible? How do most visitors travel to the place?

Yes it is easily accessible. Most people travel by car.

4. The complex is big and spread out. Is it easy to circulate from one block to the other?

It is for a young person but the older one walking up the road is a bit of a problem.

5. Do you think the spaces have been well planned? Explain how.

Yes they have been spaced well. For example when we have yoga camps, it allows for the different age groups to be spread out. Also the main prayer hall is uniquely designed because in Hinduism we sit separately. If you look at that structure, the females and the males, the wings are almost separate.

6. Was the vegetation preserved in the natural state or have they been planted after construction?

They have been preserved in the natural state.

7. Are there any spiritual activities conducted in the nature?

Yes, we have yoga asanas, and then we have hiking which is also spiritual; chanting and walking around. Karma yoga is practised and is also part of it.

8. What contributions does landscaping bring to the seekers? How do they use the outdoor space?

With the greenery around it, it brings a lot of peace; it is away from the hustle and bustle. That also brings a lot of peace to the person and lot of them sit under the big trees. That is what is called natural air conditioning.

Is there furniture in terms of benches?

Yes benches for them to sit and we make use of a lot of outdoor space.

9. How do the seekers socialise amongst each other?

There are various forms of socialising. The devotees have been long together so they socialise; they talk. Also we have sports. We have a sports ground. They play various codes of sports.

10. Does the building conform to any architectural style, how was it designed?

Only architectural style was divine architecture. It was designed by Swamiji; it was done without any planning. The planning of the ashram came as it progressed.

11. All the buildings have the same texture, finishes and colours. What inspired the selection of the colours, what do they signify?

You find a lot of yellow, it signifies spirituality. The green brings nature and invokes calmness. Swamiji used a lot of blue which shows devotion.

12. Are natural elements like water, sky and light included in the building? How and do they have any symbolic meaning?

Water is one of the main themes of Divine Life Society. If you look at the buildings, there are a lot of pools, called Ganga Ranis. Ganga is an important aspect for the Hindus for liberation but also water scientifically has found to be therapeutic and sound of the water is therapeutic too.

13. Do the interior spaces have daylight and adequate ventilation?

Yes they do have adequate light coming in. The ventilation in the dining hall area is a problem; there is no cross air.

Do you think there would be better ventilation if the windows were open during most of the time of the day?

Yes, the chlorine at the pools suffocates the air. But I do not think it will make much difference.

14. Cleanliness is said to be godliness. How often are the buildings maintained and cleaned?

Well, cleanliness is one of the main themes of the Divine Life Society, Swamiji has emphasized during his stay here. The buildings are maintained on a weekly basis. There are teams that are allocated to different areas to maintain the building.

15. Are the interior spaces designed to be in tranquil silence and attract positive vibrations? How?

Yes it does attract spiritual vibration because of the vibrations created by the chanting and the colours that Swamiji has chosen, the type of music that we play in the time and also the sound of the water helps a lot in terms of the tranquillity.

16. Here is an example of a spiritual architecture with the use of water as a holy element. Contemplation occurs inside but viewing out to the natural element. This inspires the devotees to engage with nature, to meditate, to be in tranquil silence. It is the Church on Water by Tadao Ando (Plate. A-1.4-1). Next is the Temple of Light by Tadao Ando (Plate.A-1.4-2). Here the use of light plays an important role. It forms a Holy Cross. The light quality is subtle; an environment conducive for meditation. Do you think such a design will benefit the seekers in meditating, researching their inner self to attain God realisation?

Plate A-1.4-1 illustrates Church on Water by Tadao Ando. (Jodidio, 2007: 126).

Plate A-1.4-2 illustrates Church of Light by Tadao Ando (Jodidio, 2007: 126).

Yes I think it would. Using water is our theme; we do have it on the outside within an enclosed building but we can see the scenery and it will help to inspire the people because it brings one close to God.

APPENDIX 2: SABS 0400 INFORMATION

Appendix 2.1: Ablutions Requirements

TABLE 6

1	2	3	4	5	6
For a population of up to	**Number of sanitary fixtures to be installed relative to the population given in column 1**				
	Males			**Females**	
	WC pans	**Urinals**	**Washbasins**	**WC pans**	**Washbasins**
15	1	1	1	2	1
30	1	2	2	3	2
60	2	3	3	5	3
90	3	5	4	7	4
120	3	6	5	9	5
	For a population in excess of 120 add 1 WC pan, 1 urinal and 1 washbasin for every 100 persons			For a population in excess of 120 add 1 WC pan for every 50 persons	For a population in excess of 120 add 1 washbasin for every 100 persons

TABLE 7

1	2	3	4	5	6
For a population of up to	**Number of sanitary fixtures to be installed relative to the population given in column 1**				
	Males			**Females**	
	WC pans	**Urinals**	**Washbasins**	**WC pans**	**Washbasins**
a) Facilities subject to peak demand					
50	1	1	1	2	1
100	1	2	1	3	2
150	1	3	1	5	3
250	2	4	2	7	4
500	3	7	3	12	6
1 000	3	12	4	16	7
1 500	4	15	5	20	8
	For a population in excess of 1 500 add 1 WC pan for every 500 persons	For a population in excess of 1 500 add 1 urinal for every 300 persons	For a population in excess of 1 500 add 1 washbasin for every 500 persons	For a population in excess of 1 500 add 1 WC pan for every 150 persons	For a population in excess of 1 500 add 1 washbasin for every 500 persons
b) Facilities not subject to peak demand					
50	1	-	1	1	1
100	1	1	1	2	1
150	1	2	1	3	2
250	2	3	2	5	3
500	2	4	3	6	4
1 000	2	6	5	8	6
1 500	3	7	6	10	7
	For a population in excess of 1 500 add 1 WC pan for every 1 000 persons	For a population in excess of 1 500 add 1 urinal for every 500 persons	For a population in excess of 1 500 add 1 washbasin for every 700 persons	For a population in excess of 1 500 add 1 WC pan for every 300 persons	For a population in excess of 1 500 add 1 washbasin for every 700 persons

Table. A-2.1-1 illustrates sanitary requirements (SABS 0400).

APPENDIX 3: SITE INFORMATION

Appendix 3.1: Drainage
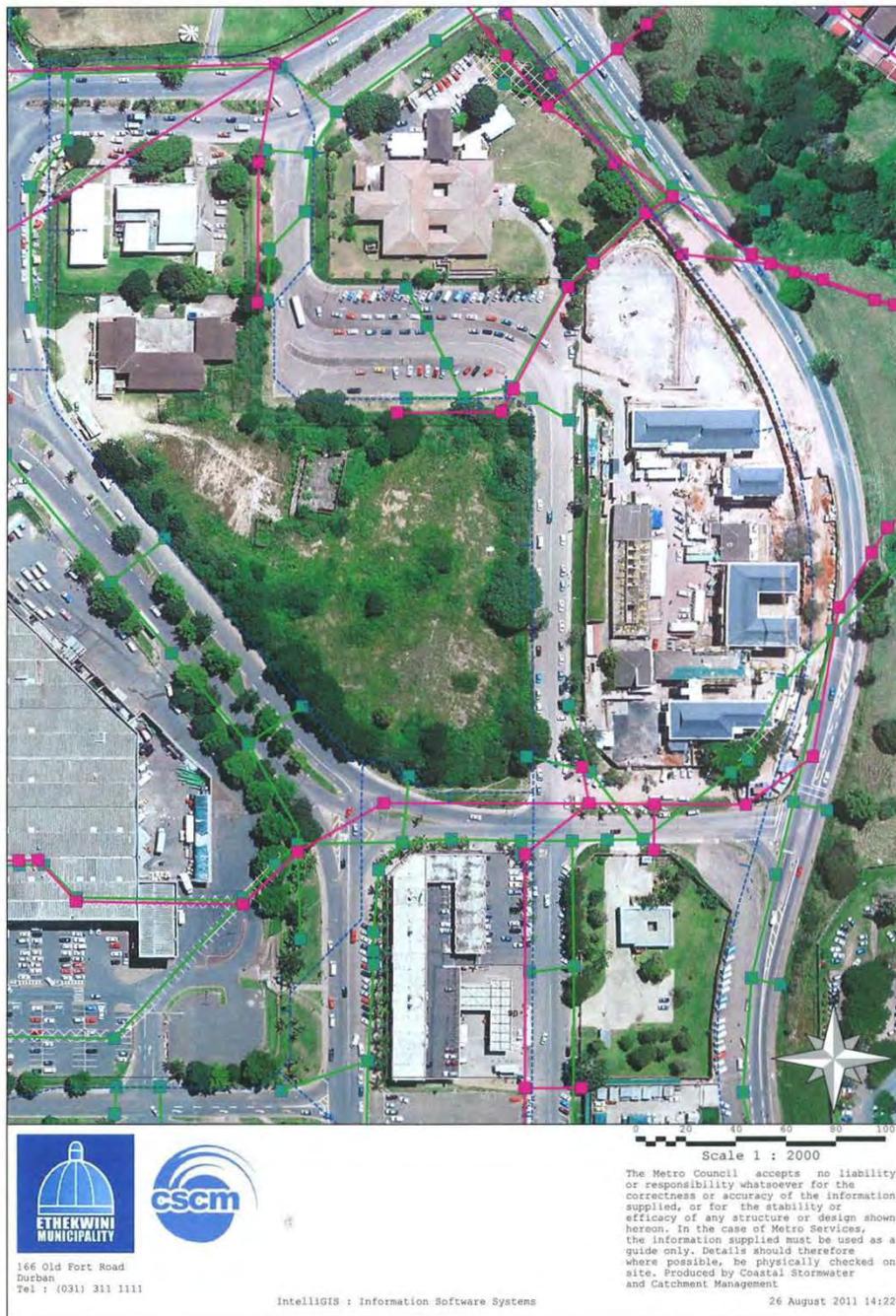
Figure. A-3.1-1 illustrates the existing drainage systems on site (Durban City Engineers, 2011).

Appendix 3.2: Contour Lines
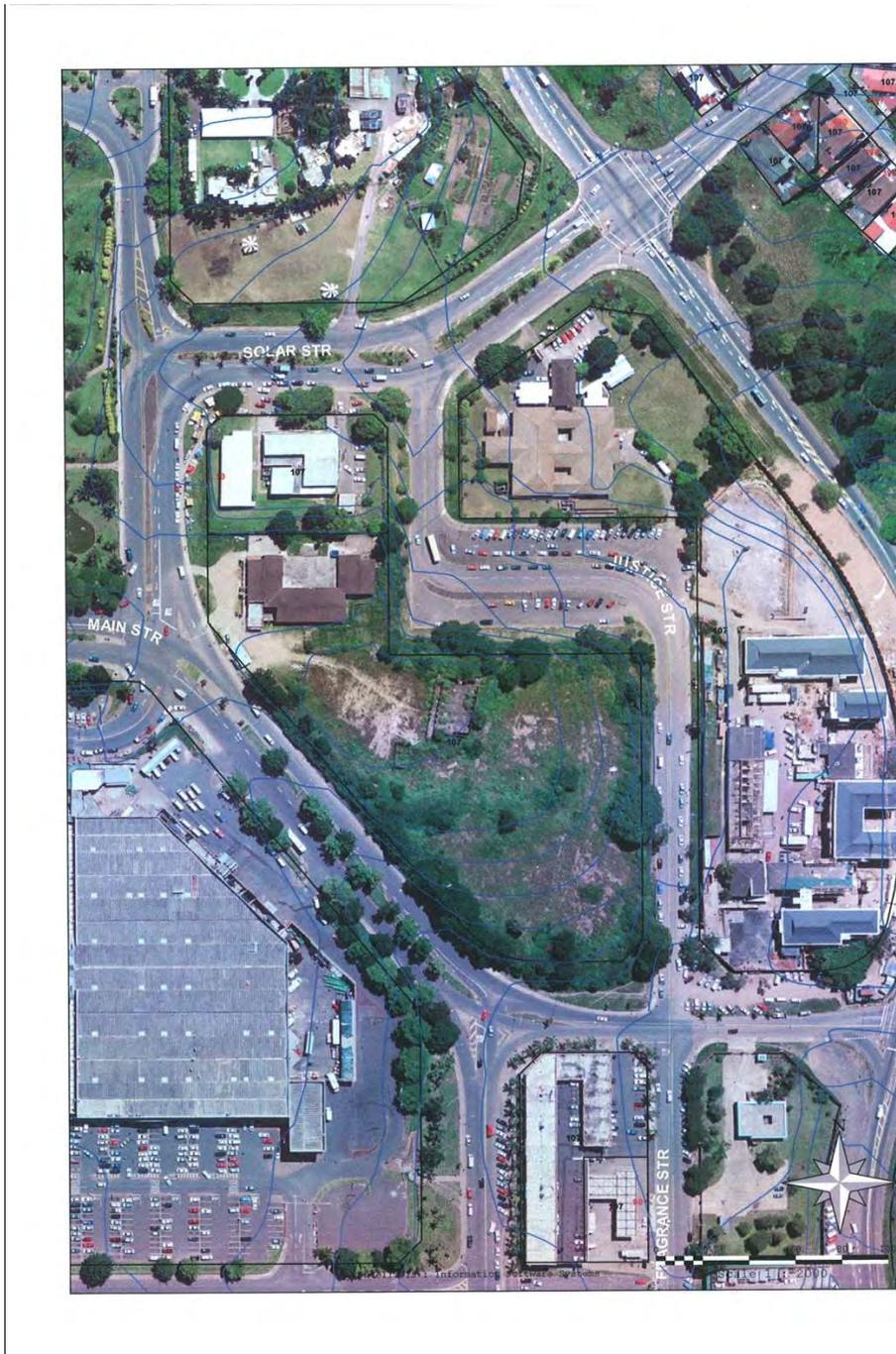
Figure. A-3.2-1 illustrates the existing two metre-contour lines on site (Durban City Engineers, 2011).

ANNEXES

ANNEX 1: Case Studies and Precedents Informing the Concept and Design

Hare Krishna Temple

The temple has a visual identity. It is a landmark in the area with an iconic architectural intervention. It is based on the Vastu Shastra planning principles. The site has entrances on four sides on the plot. They represent the four yugas – eras of time and evolution. The temple has pinnacles called 'vimana' that attracts cosmic energy into the used space in the temple. The atmosphere is turned serene with the positive vibrations gained by prayers and other spiritual practices. The building is surrounded by green landscape and is positioned in a man-made lake. The natural elements allow the users to integrate better with the environment. The main temple hall is octagonal in shape and is flooded with natural light from the large side windows and clerestorey lights. There is natural cross ventilation. The space is devoid of any obstructive structural elements and has a huge span steel truss roof structure. The space is voluminous and tranquil. The temple allows direct views to the outside world yet the inner core is peaceful compared to the hustle and bustle activities outside. The interior space is well ornamented and decorated. It represents a celebration of the supreme God.

Sivananda International Cultural Centre

The functions of each block are closely linked. The building responds to climatic conditions and the architectural intervention is expressed accordingly. The prayer hall has a well indicated seating space for each gender in the form of diagonal wings. The space is flooded by natural light. There is a complete tranquil atmosphere on site, away from noise and materialistic activities. Water elements are introduced symbolically in different forms in the design. It creates a calming and cooling effect as well. Spiritual colours relate to the colours one perceives in the after world and the works are elaborated in detail.

Prashant Ashram and Lao Tzu Meditation Centres

These centres display a simple approach in architectural style in relation to its regional context. Landscaping is part of the facilities. Green areas are required for outdoor

outreaches and spiritual retreats for specific meditation techniques. The colours represent the esoteric and mystical quality of the spirit. Warm colours and cool colours are effectively used. Verandahs and natural ventilation are provided to enhance the spiritual practices.

Osho International Meditation Centre

The auditorium has a contemporary design. The meditation practice occurs under a pyramidal structure. Outdoor space includes a hardened surface for yoga, dancing, painting, martial arts and other activities to take place, apart from the experiential green landscape. The latter incorporates a Zen garden and is accompanied by a swimming pool, rock gardens, decorated wooden pathways and waterfalls. Lighting in the volumetric auditorium is of a divine dimension. It is seen as the light of the divine self. The pyramid shape is symbolic as its peak represents oneness.

Baha'i Centre in Chile

The Baha'i centre depicts sacred architecture. It is in the form of leaf-like structures. It has a major communal space and also private meditation rooms in the periphery. There is a hierarchical definition of space with the public and private areas. The building is highly innovative in design and materials used. It is referred as the temple of light. It uses a transparent stone and glass to create a psychological and spiritual radiance of natural light. The structure is made of nine torque wings that enfold the space. The inner form is finely articulated with wooden texture that refers to cultural context of area. The diffracted sun rays create shadows in space. The building has radiating gardens and pools. Proportion, symmetry and order are used in this temple that offers human comfort.

Kresge Chapel

The chapel has a humble size and material, responding to the human scale in terms of the volume in space. The building is surrounded by moats of water that is used for contemplation purposes. The aim is to detach from the urban landscape and focus on the inner world. The building is devoid of any symbolic meanings yet the use of form and

light create a spiritual atmosphere. The undulating walls have a rough texture that signifies the past while the dark quality of space is designed to be comfortable and intimate. The space is invaded by an oculus light. The narthex has semi-transparent coloured glazing. The design intention was to create constriction and release so that the journey is experiential.

The Barai

The building is designed to have an experiential sense of spatial qualities. It is accompanied by natural elements such as water and light. Landscaping also adorns the space. The plan is square in shape. The procession leads the visitors from a noisy place to a less noisy medium to eventually a quiet internal space. The journey is marked by clarity of space and light qualities that manifest all along as wall perforations and skylight roofs. Walls are plain but colourful; each area has a different colour and gives a different experience. The aim is to become more aware of the solitude. The building integrates with its existing natural landscape which has been preserved. The sense of arrival in the spaces is subtle. One meanders through the tunnel of light designed to invoke a spiritual belonging to the space.