Global migration and multicultural environments: Integrating design systems to facilitate cultural hybridization

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Global migration and multicultural environments: Integrating design systems to facilitate cultural hybridization

by

Akshaya Sivasankar

A thesis submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of

MASTER OF FINE ARTS

Major: Interior Design

Program of Study Committee:
Diane Al Shihabi, Major Professor
Julie Irish
Tejas Dhadphale

The student author, whose presentation of the scholarship herein was approved by the program of study committee, is solely responsible for the content of this thesis. The Graduate College will ensure this thesis is globally accessible and will not permit alterations after a degree is conferred.

Iowa State University
Ames, Iowa
2020

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ABSTRACT

Global economies and global conflicts have led to unprecedented migration in the twenty-first century. This research argues for successful multicultural environments and the creation of a design approach that facilitates cultural hybridization. It examines traditional design systems — deeply rooted in cultures, values, and religions — that continue to be expressed in building construction. It identifies the fundamental ideologies and principles of the design systems of Western civilization (Classical principles of design), India (Vaastu Shastra), and China, Japan and Far East (Feng Shui) and the shared principles that allows the design systems to be integrated. It draws on literary and archival sources to understand defining principles and on case studies of historic and contemporary design integration, to show how and why traditional design systems have been successfully integrated. Findings are visually applied in two-dimensional prototypical plans and three-dimensional renderings.
CHAPTER 1. INTRODUCTION

Overview

Across the world there exist various systems of design, indigenous to cultures and countries, that have been practiced by different peoples for centuries. Some basic principles of historical design systems continue to reflect various aspects of a culture’s values, beliefs, and/or preferences across geographical regions, and they continue to be physically expressed in buildings. Examples include Classical principles of design (derived from Greeks and Romans, and advanced by Italians, French, Europeans and others), Vaastu Shastra (developed in India), Feng Shui, (practiced in China, Japan, Far East) and Islamic Design (originated by Muslims). From the perspectives of increased globalization, multiculturalism, and migration and immigration, this thesis examines how principles of fundamental design systems could be integrated.

To elaborate, with the turn of the twenty-first century, travel became more accessible and affordable, leading to a world that was more navigable by people of diverse cultures. Governments and businesses promoted international trade and facilitated the relocation of people to foreign countries. Within the last five years, global migration and immigration rates have increased to unprecedented levels. Primary influences include not only technical innovations, leading to increased global employment opportunities, but also global conflicts (terrorism, oppression, corruption, poverty, and so forth) giving rise to increases in refugees from multiple regions. While a number of people chose to migrate, many others were forced to move due to untenable circumstances in their home countries. In both cases, immigrants and

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migrants encountered and continue to endure challenges in their social and emotional wellbeing as they adjust to new environments.

The maps below show the extensiveness of current migration patterns (Fig. 1.1 and Fig. 1.2). People are moving across the world in search of better economic futures or for physical safety and emotional stability. From Fig. 1.1 we can understand that a majority of people move from countries like India, Mexico, Russia, and China, which are ranked highest for emigration. In Fig. 1.2 we can see that a majority of migrants are entering countries like the United States, Saudi Arabia, and Germany which are currently ranked highest at receiving people.


3 “Total Immigrant and Emigrant Populations by Country.”
Recently, many countries in the Middle East such as Syria, Iraq, Turkey, and Afghanistan, face debilitating internal conflicts and wars, causing families to leave their native lands. When these migrants seek asylum in other countries, independent new agencies document that they often face unanticipated aggression. For example, in an article in The Guardian, it is reported that the city government in Athens, arrested more than one hundred migrants mostly from countries like Syria, Turkey, Afghanistan and Gaza, who sought safety in the squats (slum areas) because they were being treated poorly in the refugee/migrant camps. One of the volunteers of the camps noted that the squats feel more like home to these migrants when compared to the camps which are like a prison. The squats are now continually raided, due to the new rightist
government, including Mayor Kostas Bakoyannis, who accused the previous government of holding a soft line when dealing with migrants.⁴

Further, new and more restrictive governmental policies in Hong-Kong have resulted in a large number of people resettling in different countries, including Taiwan, Australia, Canada, and the United States (US).⁵ Poverty and corruption in Mexico and Central America have led to an unprecedented number of citizens trying to emigrate to the United States to improve their educational and employment opportunities. This has led to overcrowded asylum camps at the U.S - Mexico border and a growing humanitarian crisis. Only a handful of bathrooms are provided for more than 2000 asylum seekers. Although, the asylum system in the United States is a legal right that has been designed to help the world's most desperate people, current policies pose restrictions for entering migrants to obtain asylum. The policy diverges strikingly from the special message delivered in 1947 by US president Harry S. Truman on the “Admission of Displaced Persons,” stating “…Victims of war and oppression look hopefully to the democratic countries to help them rebuild their lives...The only civilized course is to enable these people to take new roots in a friendly soil.” ⁶ His message is still applicable and important for countries to understand and follow in order to best help people around the world meet their humanitarian needs.

At the same time an increasing number of migrants from China and India are seeking education and long-term employment opportunities in the US.

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According to the Pew Research Center:

The U.S. foreign-born population reached a record 44.4 million in 2017. Since 1965, when U.S. immigration laws replaced a national quota system, the number of immigrants living in the U.S. has more than quadrupled. Immigrants today account for 13.6% of the U.S. population, nearly triple the share (4.7%) in 1970. However, today’s immigrant share remains below the record 14.8% share in 1890, when 9.2 million immigrants lived in the U.S. ⁷

Conversely, there are also a large number of people moving out of the US to other countries like Mexico, Canada, Europe, and India to further employment opportunities. As of June 2016, the US Department of State estimated that nine million non-military U.S citizens were living outside the country. It is anticipated that these numbers will continue to rise.⁸

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⁸ “Consular affairs by the numbers,” The U.S Department of State (December, 2018), https://travel.state.gov/content/dam/travel/CA%20By%20the%20Numbers%202019_Q1.pdf
Collectively, expanding immigration and migration have led to increased cultural diversity in Eastern and Western countries and an increased need for multicultural tolerance and understanding. This research suggests a need for a more diverse and inclusive approach for successful cultural hybridization and an environment of multiculturalism.

Interior design is a field and a specialization that can facilitate multicultural acceptance, inclusion, and cultural hybridization. In contemporary design, it is the responsibility of the designer to know and apply not only building codes, standards, and principles of design aesthetics, but also to understand and respond to the needs and preferences of clients based on social and cultural norms and preferences that may differ from the designer’s.

In the field of Interior Design, multicultural understanding and cultural hybridization can be facilitated through programmatic research and schematic designs that simultaneously appeal to multiple cultures. Cultures have different belief systems, standards of beauty, and notions about pleasing design principles. It is becoming increasingly important for designers to be conscious of diverse design systems that are culturally significant, still valued and practiced by large sectors of the global population. There is an increased need to integrate relevant principles of major cultural design systems, particularly in countries experiencing multi-cultural migration. A primary goal is to create a new form of design ideology and practice that can satisfy the diverse needs of people in a period of global multiculturalism. At the very least, contemporary designers need to be inclusive of multiple cultures and help facilitate cultural hybridization.

It is important to consider, that fifty percent of the world’s population has aesthetic foundations in just three design systems: Graeco-Roman Classicism, Feng Shui, and Vaastu
Shastra. To better understand how we can shape contemporary design approaches to accommodate unprecedented global trends, this research analyzes and compares the underlying foundations (design historical, philosophical, religious, cultural, geographical and technological) of these three major design systems. These systems govern architectural design in Western countries, including the United States, Canada, and Europe, and in Near Eastern and Far Eastern countries, including India, China, and Japan.

Since these three dominant design systems underlie traditional architecture styles of cultures for half the population of the world, they suggest that knowledge about the existence of these systems and their foundational principles should be made evident to contemporary designers tasked with developing designs that are inclusive of diverse multi-cultural heritages.

Stated differently, since the principles of these design systems are ingrained in the cultures of Eastern and Western countries and play a significant role in promoting physical and psychological well-being of the occupants, it is important that designers understand which principles yield pleasure and facilitate contentment, particularly when they remain unspoken and invisible to citizens of host countries. Thus, an important aim of the thesis is to give consolidated information on the cultural foundations of these design systems and help contemporary designers apply this knowledge appropriately and effectively.

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Research Questions

1. What are the underlying foundations and guiding principles of Feng Shui, Vaastu Shastra and Classical design systems and what if any, are the similarities or differences between the systems that may allow points of intersection?

   This research focused on identifying and understanding the principles of each design system, followed by an analysis of their applications in interior spaces. Understanding the principles, formed the basis from which the design systems were compared, which helped determine how similar and different they are to each other.

2. Are these design principles and systems still relevant to current design practice, and if so, are all principles and aspects of the systems relevant? For example, are there basic design principles that are obsolete, have others remained constant, and have any continued to evolve? If the latter, how have the specific design principles evolved and what are the circumstances that caused the change?

   The research included case studies to understand the past and contemporary applications of the design systems. This helped in understanding the evolution of these design systems across history and in evaluating their relevance to the modern era.

3. As a follow up to questions in ‘2’ above, is it possible to apply this insight to create a useful and relevant contemporary design system or systems that could guide today’s global designers, and if so, how could it be implemented?

   Understanding the differences between the design systems, helped determine their relevance to the modern era and to understand how to help bridge the gaps between these culturally significant historic systems with the present.
Literature Review

Answering the research questions required the study to first consider and understand each design system separately and then collectively. The design systems researched include Graeco-Roman Classical design, *Vaastu Shastra* and Feng Shui.

**Scholarly Works on Classical Principles of Design**

There are a number of scholarly texts that explain the principles and elements of design that were used in Graeco-Roman Classicism. One of the oldest and most important books is *The Ten books on Architecture* written by Vitruvius, translated by Morris Hicky Morgan in 1960. This book is a treatise for Classical principles of architecture and design and is the oldest surviving book on this topic from antiquity. It is of great value to the design community as Vitruvius explains the education that an architect (who was also the interior designer) should have, and what the principles and basic ideologies behind the designs are and how must one approach them. In understanding the contemporary uses and application of the Classical principles of design, one of the important texts is *Architecture: Form, Space, and Order* by Francis D.K. Ching, republished in 2007. This is considered a contemporary textbook for Classical principles of design because it explains in detail each of the different principles and elements of design and their characteristics with clear sketches of their application in buildings throughout history. It is still widely used around the contemporary schools of architecture and design around the world to teach upcoming designers about the basic Classical principles of design and how to use them appropriately. Another important text used by universities to teach the principles of Classical design is *Interiors: an introduction* by Karla J. Neilson and David A. Taylor, republished in 2011. It is written for entry-level interior design students and explains the Classical principles and
elements of design and their application through pictures and examples of different interiors. A work of literature that offers an explanation about Western design principles, which are Classical, is the *Universal principles of design* written by William Lidwell, published in 2003. It describes the principles of design and how they are being used universally to aid the design process.

**Scholarly Works on Vaastu Shastra**

Some of the important literature on *Vaastu Shastra* consists of the *Mayamata* by Mayamuni, translated to English by Bruno Dagens in 1985, and the *Architecture of Manasara*, Translated to English by Prasanna Kumar Acharya in 2011. These are definitive treatises that describe the foundations of *Vaastu Shastra* and how they can be applied to design, construction, and spatial organization of cities, palaces, and residential quarters. These two literary works are one of the oldest works on *Vaastu Shastra* and its applications and provides us with the knowledge about the history and development of *Vaastu Vidya*. Another scholarly work that describes the recent development on *Vaastu Shastra*, its principles and applications, is *Indian architectural theory: Contemporary uses of Vaastu Vidhya*, written by Vibhuti Chakrabarti and published in 1998. The author explains the history and workings of *Vaastu Shastra* and compares how the principles of *Vaastu Shastra* were applied historically and how they are being used in contemporary design. *Vedic Architecture and Art of living* by B.B. Puri, published in 1995 is about the science of *Vaastu*. It extensively describes different buildings throughout history that have applied *Vaastu* principles in their design and construction. *Building Jaipur: the making of an Indian city* written by Vibhuti Sachdev in 2002 is a further scholarly work that deals with the history of *Vaastu* and its importance, but it mainly focuses on
the city of Jaipur and how it was developed with Vaastu principles. This helps in understanding of how a city was planned by using Vaastu principles. *Vastu living* by Kathleen Cox, published in 2000 is a simple book that explains *Vaastu Shastra*, its applications and importance. This book focuses on the interior placement of furniture according to *Vaastu* principles and articulates them in a way that is easily understandable for anyone who wishes to learn more about the Indian science of architecture and design. One commonality that all books have is that they all refer to the importance of *Vaastu* and how it is ingrained in the culture and religious beliefs of Indians.

**Literary Scholarship on Feng Shui**

Feng Shui, unlike *Vaastu Shastra*, is not a science of architecture and design, but is rather an art of placement that is extensively practiced in Asian countries like China, Hong Kong, and Japan. One of the important literatures on understanding Feng Shui is the *Introduction to Feng Shui* by Ole Bruun published in 2008. It is an all-inclusive text that explains the history of Feng Shui, its basic and foundational principles, and the modern interpretations and uses of Feng Shui. The book explains in detail the process to be followed from finding the ideal site to finishing the interiors according to Feng Shui principles. One of the literary works that describes the history, principles and modern application of this design system is *Feng Shui design: from history and landscape to modern gardens & interiors* written together by Sarah Rossbach and Master Lin Yun and published in 1998. This book describes the philosophy of Feng Shui and the tools used in Feng Shui to assist the reader to achieve perfect furniture placement to increase harmony. It also covers the latest application of Feng Shui principles around the world and briefly explains Feng Shui for different building typologies. *Simple Feng Shui* written by Damian
Sharp and published in 1999 explains the basic principles and foundations of the Feng Shui system of design and its applications in the world. Theses texts also describe the ideal layout based on Feng Shui principles and how changes can be made to any layout to make it more compliant with Feng Shui principles.

What none of the books describe is how the individual design system could be combined with another to serve the needs and interests of more than one culture at a time. This is the gap in research and scholarship that this thesis seeks to ameliorate.

**Research Methods**

The research methodology integrated archival analysis and comparative case study analyses of singular design systems and multicultural integrations of design systems, using material cultural and iconographical analysis, and photographic and video analysis as needed.

Material culture analysis, supplemented with photographic analysis, was facilitated by direct observation at site visits to the Taj Mahal and Tirupati in India and to the Parthenon in Greece. Photographic and video analysis informed research about the Forbidden City in China and contemporary design integration in an apartment in London, England.

The research methodology then applied and integrated relevant design principles of different cultural design systems in a contemporary residential environment. The application included two-dimensional floor plans for an approximately 2000 square foot unit and three-dimensional Revit renderings of the proposed integrations.
Step 1. Literary and Archival Analysis

The thesis researched and analyzed each of the individual design systems to understand the foundational design principles, underlying spatial organizational and orientation. Literary and scholarly works from Iowa State’s library and partner libraries were studied to gain a better understanding of these design systems. Architectural plans of historical buildings from each of the design systems were obtained from the archives and historical literary sources, to study and understand the foundational principles and their application in design. For each of the design systems, a historic building was chosen to study, analyze and interpret the design principles, underlying spatial organizational and orientation. Plans, elevations, and other representations of the buildings were used to exhibit how the principles were applied in the design. The Parthenon in Greece was analyzed to explain the application, spatial organization and orientation principles in Classical principles of design; The Tirumala Tirupati Temple in India was selected to elaborate spatial organization and orientation principles of Vaastu Shastra, and the Forbidden City, China was outlined to decipher spatial organization and orientation principles of Feng Shui. Next, these basic foundational principles were compared to see if points of intersection between the different design systems could be determined.

Step 2. Case Study Analysis

The next phase analyzed historic and contemporary buildings that exhibited principles of one or more design system. Analyses included the history of design integration and research on the popularity of the building and its relatability to the masses as a result of the integration. The Taj Mahal was chosen as a case study for historic design integration. It has influences of Vaastu Shastra and Islamic design that is popular among multiple cultural and religious groups in India.
It also broadly appeals to diverse world populations, possibly because the building reflects design preferences from other design systems like the Classical principles of design. The Taj Mahal was analyzed through credible literary and scholarly research, and material culture analysis, from on-site and virtual visits. This helped in proving the importance of design integration. The second case study addresses design integration in contemporary practice through a high-end residential building in London, England by the design firm ‘One Point Six’, which is based in London. It caters to the increasing Indian demographic and their interest in a Vaastu compliant home. For this project, the firm re-designed an apartment in the Knightsbridge residential area at 49-51 Pont Street, in central London. Analysis of the different principles of Vaastu and contemporary design principles were completed through analysis of photos and plans obtained from the firm’s website and project catalog. This helped in proving the relevance of design integration in the contemporary world.

**Step 3. Integration and Two and Three-Dimensional Application (Creative Component, Part 1)**

With the help of the conclusions drawn from the analysis of the individual design systems and the integration of multiple design systems in a single building, a two-dimensional residential plan that integrates shared principles of spatial organization and orientation was proposed and developed. The primary goal was to preserve the essential meanings of each of the underlying design systems for each culture, while at the same time creating the potential for a new appreciation of multi-cultural design integrations. The process was demonstrated by applying a proposed integrated design system to the development of a 2,095 square foot residential building. This process helped to determine the relevance of these design systems in
contemporary architecture and aided in creating an amalgamation of these principles to develop a new system of design that could help current and future designers.

**Step 4 Stylistic Analysis and 3-D Revit Renderings (Creative Component, Part 2)**

In Step 4, the underlying stylistic elements including forms, motifs, and materials were analyzed and represented visually and three-dimensionally through Revit renderings. This phase included the selection and application of suitable finishes (floors, walls, ceiling, decorative arts, and fine arts) for each culture to most suitably ornament the residential plans developed in Step 3. The analysis included a brief synopsis of cultural beliefs, attitudes and values underlying the iconography and determined whether or not they are still culturally relevant. The primary goal was to exemplify how an integrated plan could be developed based on shared principles of spatial organization and orientation that could be personalized to appeal to diverse cultures.

**Limitations**

Since the majority of people do not have knowledge of the principles and ideologies underlying the traditional design systems, even though they may have shaped preferences that are engrained within their culture, questionnaires or surveys would not have been useful in assessing the demand for or interest over time for integrated design systems. Thus, the research methods relied on historical and contemporary case studies for this information. Due to time constraints, the study was limited in the number of historic and contemporary examples of integrated cultural design systems that could be included. Further studies of contemporary examples could have facilitated understanding of the current desire or need for such plans.
Chapters Overview

Chapter 1 elaborates on the purpose of the thesis, research questions, research methodology and the literature review; Chapter 2, include the foundations, ideologies of each of the design systems noted, with examples of to elaborate them. Classical principles of design (Acropolis), *Vaastu Shastra* (Tirupati Temple Complex), Feng Shui (Forbidden City). It concludes with identifying the points of intersection between the three design systems; Chapter 3 explains the case studies of historic design integration of The Taj Mahal (Indian, Islamic and Classical principles) and contemporary design integration of an apartment in London (*Vaastu Shastra* and Classical principles); Chapter 4 explains the proposal for the development of an integrated design system (Creative Component) for contemporary designers; and Chapter 5 explains the findings from the research.
CHAPTER 2. FOUNDATION OF THE DESIGN SYSTEMS

This chapter provides an introduction to each of the three design systems. It includes an explanation of the purpose and the history of each design system. It then draws on an example of a building pertaining to the design system and elucidates the application of foundational principles and the basic and important aspects of each of them.

Principles of the Graeco-Roman Classical Design System

Purpose

In the Graeco-Roman Classical design system, referred to henceforth simply as the Classical design system, the principles and elements of design are tools and vocabulary that are used to create and communicate specifics of successful design environments. There are many commonly accepted Classical principles and elements of design and they vary from one literature to another, and designer to designer. For the purpose of this study, a few books used by architecture and design schools, as expressed in the research by Erin Adams, will be discussed along with the basic principles obtained from Vitruvius’s Ten books of Architecture.

History

The principles and elements of Classical design came into existence during Graeco-Roman architecture. While developed by the Greeks, the earliest explanation of them was written by Vitruvius in his Ten Books of Architecture. According to Vitruvius, the fundamental principles of architecture being include Order, Arrangement, Eurythmy (rhythm), Symmetry,

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11 Adams, 163.
propriety and economy.12 Today many of the same ideas are applied but we use different vocabularies to describe them. In addition, while Vitruvius’ basic principles of Classical design related to architecture, over time new terminologies were added due to the increasingly complexity of practice and the fragmentation of designers into specializations within particular fields of design that have accumulated their own knowledge.13

**Basic Principles**

Principles of design are the ways a designer must use the elements of design to convey the design ideology. So, both elements and principles of design are important and must be understood by every designer. According to the two major books used by design schools to educate upcoming designers,14 below are the commonly used elements and principles of design that are rooted in Classicism but used in the contemporary world.

**Principles of design:**

Scale, Proportion, Balance, Rhythm, Emphasis and Harmony are considered to be the basic principles of design by Nielson & Taylor in their book *Interiors: an Introduction*.15

Axis, Symmetry, Hierarchy, Datum, Rhythm, Repetition and Transformation are the basic principles of design described by D.K. Ching in his book *Architecture: Form, Space and Order*.16

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Order, Arrangement, Eurythmy (rhythm), Symmetry, propriety and economy are the principles, Vitruvius considered to be the fundamental principles of architecture according to his *Ten Books of Architecture*.\(^{17}\)

The principles of design described by Vitruvius and D.K. Ching fall under the umbrella of terms used by Neilson & Taylor and so, further discussions will be based on their comprehensive list of principles of design. Before explaining them, there are few basic ideologies that were written by Vitruvius in his *Ten Books on Architecture*, that he believed were important and that he gave directions to designers on how to follow them appropriately. While the education of designers has evolved and technologies have developed to better analyze buildings, sites, and materials, the types of planning information necessary to develop a building remain similar.

*Education of architect* is the first concept he discusses in the book. Vitruvius says that the architect should be equipped with knowledge of many branches of studies and varied kinds of learning. Further, he says that only both practice and theory together can make an architect experienced and with authority. He then explains that an architect should be educated, skillful with the pencil, instructed in geometry, have knowledge in history, follow the philosophers with attention, understand music, be acquainted with astronomy and the theory of heavens.\(^{18}\) In the 2000 years since Vitruvius book, educational systems have evolved and changed according to needs, but the Classical ideology of architectural design still remains valid.

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\(^{18}\) Vitruvius. 5.
The site of a city is a general principle that is observed when choosing a site to build. Vitruvius says that a healthy site is one which is high, neither misty or frosty, and in a climate neither too hot or too cold and without marshes in the neighborhood. The designer must be aware of the direction of the winds, observe nature around the site and look for food and water sources to determine if the site is healthy or unhealthy. Today the selection of a city to live in and site to build on is dependent on where one is employed, the funding the client has to purchase land, the land available for building, and government authorizations. Access to food, water, and medicine remain a concern, but are generally services provided by a community. While the criteria have changed, the idea of evaluating the site remains important and the general principle should be taken to consideration.

Using of gnomon to determine the sun and wind path to help determine directions of streets when planning a city, and in case of residences placing of windows and doors to take the maximum advantage of natural lighting and ventilation. This is an age-old practice that has evolved along with the technological innovations of the world. In today’s world, technology has evolved where, one can get all the information regarding a site by knowing just the location. Hence, the need for a physical gnomon is redundant, but the concept of considering wind paths and sun is still relevant and is important to analyze the site and develop designs accordingly.

The above are some basic concepts discussed by Vitruvius which were considered important. But these concepts have developed over the years and are not being applied or used...
in contemporary design in the way it was originally intended or used. Nevertheless, the evaluation of the site, location of the sun, and wind paths remain relevant.

Remaining contemporary principles of design used and practiced today are explained below with the help of Parthenon, one of the greatest examples of Classical design principles.

**Parthenon and the Classical Principles of Design**

The Parthenon is a Greek temple that dominates the hill of the Acropolis in Athens. It was built in the mid fifth century BCE and was dedicated to the Greek Goddess Athena. The temple is considered to be the culmination of the development of the Doric Order, simplest of the Classical Greek order and an excellent example of Greek temple architecture displaying the Classical principles of design.\(^1\)

*Proportion* is the feeling of unity created when all parts (sizes, amounts, or number) relate well with each other.\(^2\) The ‘proportion’ principle is clearly exhibited in the Parthenon, as the golden ratio is followed ubiquitously. The rectangular plan, the elevation, and even the size of the columns and the space between them follow the same proportions in the ratio of 9:4. It is clear from Fig. 2.1,\(^3\) that both the plan and the elevation explains how the golden ratio was used in the Parthenon.

*Scale* deals with the actual and relative size in comparison to other objects next to it. Here, the Parthenon is the main temple in the acropolis and from Fig. 2.2, it is clear how the temple is scaled and proportioned to be bigger in comparison to the other small temples around it. We can also see in the plan, (Fig. 2.1) how the column radius reduces from exterior to

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interior. This change in scale helps in keeping the proportion of the building comfortable to the eye.

**Balance** is the distribution of the visual weight of objects, colors, texture, and space. It is equilibrium or the arrangement of objects to achieve a state of stability physically or visually. Balance, a state of equilibrium is achieved using either of the three ways – symmetrical balance, asymmetrical balance, or radial balance. In symmetrical balance, the elements used on one side of the design are like those on the other side whereas; in asymmetrical balance, the sides are different but still look balanced. In radial balance, the elements are arranged around a central point and may be similar.\textsuperscript{24} From Fig. 2.1, it is clear how both the plan and elevation exhibit the

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\textsuperscript{24} “Principles of Design.” 40-41.
quality of symmetry to perfection. The central line shows that both sides are the same which illustrates the symmetrical balance in Parthenon.

![Parthenon](image)

*Fig. 2.2., Acropolis showing the Parthenon, 2018, Photo by Author*

**Rhythm** is expressed as a quality which carries the eye along a certain path and at a certain pace determined by the elements that exemplify it. Repetition of a certain element, in this case the columns is the way rhythm is expressed in this building. Fig 2.3 and 2.4 shows that there is a continuous use of the Doric columns along the perimeter, which establishes a continuity and flow of rhythm while also providing unity which brings harmony in the design.

**Emphasis** is the creation of a focal point, an area visually important enough to draw and hold attention. In this building, this emphasis is placed on the linearity of the structure. As

soon as we climb the top of the hill, the view is of the Parthenon and its long linear row of columns (Fig. 2.3). Even in no longer in its best form, the Parthenon still emphasizes the scale and proportion of the building in comparison to the other temples in acropolis.

Harmony is the result of a delicate balance of the two sub-principles called unity and variety. Unity suggests uniformity which is achieved when all the various elements and furnishings are brought together. Variety is the absence of monotony. It brings the interest and diversity in a design. There is harmony in the Parthenon created by the use of both variety and unity. Variety is exhibited by using different sized columns in the temple. But unity is achieved in the use of Doric style columns throughout the temple.

There are other accepted terms in the principles of design, but the above discussed ones are a comprehensive list of terms which covers almost all of the other principles under them. Using these principles and elements of design in various combinations, contemporary designers are developing designs across the world.

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**Vaastu Shastra**

**Purpose**

‘*Vaastu Shastra*’ is a Vedic text of Indian origin which literally translates to ‘science of architecture’. The designs are intended to integrate architecture with nature utilizing geometric patterns, symmetry, and the cardinal directional alignment.²⁸

It is intended to be used as a guideline for the construction of small houses, cities, and temples complexes. The ultimate objective of *Vaastu* is to put harmony and order into any built form. Scientific reasoning flowed along with religious beliefs. *Vaastu*’s primary concern with the interrelationship of organisms and their environments makes *Vaastu* the oldest holistic architecture discipline and the precursor to the contemporary science of ecology.²⁹

**History**

*Vaastu Vidya*, the knowledge of the ancient text of *Vaastu Shastra* is as old as the Vedic scriptures which are dated to be around 1500-1000 BCE. The *Vaastu Shastra* had been completely developed technically by 1st Century AD, but the date of its emergence as a specialized science is speculated to be much before that. Most of the literary material between the 6th century BCE to the 6th century AD is lost and so, *Vaastu Vidya* as a knowledge of architecture is believed to have emerged between 6th century BCE to the 1st century BCE.³⁰

**Basic Principles**

The basic ideology of *Vaastu Shastra* have remained constant but the basic principles have evolved through the years. These principles have been accommodated to the changing

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technological inventions and to the way design is practiced. The basic principles of \textit{Vaastu Shastra} and how it was applied historically is explained below:

\textbf{Architectural team} is an important step in any project. Traditionally the architectural team consists of the main architect called the \textit{Sthapathi} who is responsible for developing the design. \textit{Sutragrahin}, the expert in drawing, initiates the implementation of the design concept. \textit{Vradhaki}, the expert in painting and masonry, does the finishing of the house and finally \textit{Takshaka}, one who does the carving and cutting.\textsuperscript{31}

But in contemporary practice, this concept of an all-inclusive team is highly fragmented. Each of the specific role mentioned above are now separate streamlines of work and all of them work separately to complete a project. Even though the concept of a single all-inclusive team isn’t feasible anymore, the ideology that all four members of the architectural team, which in contemporary practice is equivalent to the four streams of work (architecture, construction, interior design and carpentry) coming together to finish a project, still holds true.

\textbf{Choosing a site and preparing it} is the next step. All places available for man to dwell are called \textit{‘dwelling sites or vastu’}.\textsuperscript{32} A dwelling site is one which is “chosen after thorough examination of color, odor, flavor, form, orientation, sound...”\textsuperscript{33} The site is chosen based on the natural resources available in and nearby. Fertile and clayey soil with medicinal plants and trees are considered auspicious.\textsuperscript{34} The site is examined with all five sensory perceptions of touch, smell, sight, sound and taste and the site should also be pleasing to the mind.\textsuperscript{35} In

\textsuperscript{31} Chakrabarti.20
\textsuperscript{32} Mayamuni., Mayamata : An Indian Treatise on Housing, Architecture, and Iconography Translated by Bruno Dagens, 1985. 3
\textsuperscript{33} Mayamuni.3
\textsuperscript{34} Mayamuni.5
\textsuperscript{35} Chakrabarti, Indian Architectural Theory : Contemporary Uses of Vastu Vidya.130
general, a square or rectangular shaped site with a downward slope to the east, north or northeast is favorable.\textsuperscript{36} All of these guidelines are only to suggest the most favorable and auspicious site and are not rigid and so it can be followed to the best possible extent.

In the contemporary world, where the land is categorized by the master plan of the city and the local government authorities, the clients don’t have a huge range of options in choosing a site and the designers have learned to work with what they have. Modern designers have started treating the sites as their canvas in which they exhibit their designs and so, the site constraints are just taken as a challenge and are dealt with creatively.\textsuperscript{37} Even though the freedom to choose any site is not always available, these guidelines are still applicable to current practice and with the technology at their disposal, designers can apply these rules and wield the site to their advantage.

**System of measurement** During the Vedic era and for years of the *Vaastu* practice, the system of measurement of space and time was different from the contemporary system. The units were based off traditional materials and human body dimensions. The units are: \textsuperscript{38}

\[
\begin{align*}
8 \text{ atoms} &= 1 \text{ speck of dust} \\
2 \text{ vitasti} &= 1 \text{ Hasta (18") or forearm} \\
8 \text{ specks} &= 1 \text{ tip of hair} \\
4 \text{ Hasta} &= 1 \text{ danda or pole} \\
8 \text{ tips} &= 1 \text{ louse} \\
2000 \text{ Danda} &= 1 \text{ kosha} \\
8 \text{ lice} &= 1 \text{ grain of barley} \\
2 \text{ kosha} &= 1 \text{ gavyuti} \\
8 \text{ grains} &= 1 \text{ angula (3/4") or digit} \\
2 \text{ Gavyuti} &= 1 \text{ Yojana} \\
12 \text{ angula} &= 1 \text{ vitasti or span of a hand} \\
100,000 \text{ Yojana} &= \text{ Earth}
\end{align*}
\]

\textsuperscript{36} Chakrabarti.132  
\textsuperscript{37} Chakrabarti.139  
\textsuperscript{38} Chakrabarti.38
Like the units of measurement of space, the measurement of time is also a little different. It is the sun and the moon that create and define day, night, fortnight, month, season and year. The measurement of time, with the relationship of macro and micro time are:  

- $15 \text{ Nimesha} = 1 \text{ Kastha}$
- $30 \text{ Kastha} = 1 \text{ Kala}$
- $30 \text{ kala} = 1 \text{ Muhurtha (48 minutes)}$
- $30 \text{ muhurtha} = 1 \text{ ahoratra or day-night period}$
- $1 \text{ ahoratra} = 24 \text{ hora} = 60 \text{ Ghati} = 8 \text{ prahara}$
- $(1 \text{ Ghati} = 24 \text{ minutes}, 1 \text{ prahara} = 3 \text{ hora or hours})$

$15 \text{ ahoratra} = 1 \text{ Paksha or a lunar fortnight}$

$2 \text{ Paksha} = 1 \text{ Masa or Lunar month}$

$2 \text{ Masa} = 1 \text{ Ritu or a season}$

$3 \text{ Ritu} = 1 \text{ Ayana (the period of sun’s progress in the north/south of the ecliptic)}$

$2 \text{ Ayana} = 1 \text{ Varsha or year or 1 divine day hours}$

$360 \text{ days of God} = 1 \text{ divine Year}$

Unlike olden times, today’s values assigned for measurement are in terms of absolute numbers rather than relative proportions. It would not be possible to derive a universal system of relative proportion for the modern environment because contemporary architects do not follow a framework that is derived from one world view. Now with the dedicated regulations set by local authorities in the countries, the measurements of space are limited to the building codes and urban planning committee. The measurement of time has been agreed upon universally. Because of this, it is difficult to adopt the Vaastu Vidya system of measurement to contemporary world. But the concept of having a system of measurement is still valid and it has been made convenient by agreeing to a universal system of measurement whether metric or Imperial, which helps design to be comprehensive to people of all language and backgrounds.

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39 Chakrabarti.44
40 Chakrabarti.57
Building materials and knowledge about it, is considered one of the important qualities of a designer. The main building materials discussed in the texts of *Vaastu Shastra* are timber, stone, and bricks. But the texts also accept the importance of knowledge about other materials that maybe in use. Since these texts were written in a period where new age materials like concrete, steel and iron weren’t in use, the usage of the above-mentioned building materials are the only ones discussed. The texts describe in detail how to pick the perfect wood for timber, and the correct composition of the soil for making bricks and the quality and strength of stones to be used. There are still many architects and designers who give importance to the local materials and might require the help of these texts to help their process of choosing and using these materials in their design. Understanding the types of materials available and the potential of each material is important.

The rest of the basic principles of *Vaastu Shastra* will be discussed below using the example of the temple complex in Tirupati, India to help understand them accurately.

**Tirupati Temple Complex and *Vaastu Shastra* Principles**

The Venkateshwara temple is a widely popular and a landmark temple, dedicated to Hindu God –Vishnu. It is situated in the hill town of Tirumala at Tirupati in Andhra Pradesh, India. The temple is dedicated to Venkateshwara, an incarnation of Vishnu. The temple is constructed in Dravidian architecture style and is believed to have been constructed over a period of time starting from the 300 CE. It is the richest temple in the world in terms of donations received and wealth and is also the most visited Hindu temple. This temple is built

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41 Mayamuni., Mayamata : An Indian Treatise on Housing, Architecture, and Iconography Translated by Bruno Dagens. 75-80
42 Chakrabarti, *Indian Architectural Theory : Contemporary Uses of Vastu Vidya*. 141-146
with *Vaastu Shastra* principles and it is thus believed that it’s because of the rigorous following of these principles that the temple is successful.

![Site](image)

**Fig. 2.5.** Tirupati temple complex, Andhra Pradesh, India, 2019, Courtesy of Google maps

**Site** The entire temple complex (Fig. 2.5) is a perfect square with a little extension on the northeast part of the site. A square is considered one of the purest forms because, in the Vedic view, the square is the form that represents the cosmos or universe. The fixed and symmetrical form is an expression of the absolute harmony and balance that the celestial realm presents.44 Pundits and scholars are recommending four-sided site, tapering to the northeast.45 The Tirupati temple complex satisfies all the discussed rules making the site *Vaastu* compliant.

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44 Cox, *Vastu Living: Creating a Home for the Soul*.40

Vaastu purusha mandala Vaastu Shastra’s one of the most important basic principle is the usage of Vaastu purusha mandala and designing spaces based on it. It is a grid that facilitates the start of the design, while also conveying underlying meaning to the design as it unfolds.\textsuperscript{46} Vaastu means land/site, purusha means spiritual energy. The phrase Vaastu purusha means ‘cosmic spirit of the land’. The mandala serves as a tool or guide to design with harmony and attain enlightenment.\textsuperscript{47}

The Vaastu purusha mandala can take shape of various polygons according to the shape of the site but the square is considered the most perfect form. Its fixed and symmetrical form is an expression of the balance and harmony in the spiritual world.

Another important factor in Vaastu Shastra is the five elements: Wind, Water, Fire, Earth and Sky or Ether. A building designed in accordance with Vaastu, permits the positive vibrations that flow through the universe to be channeled throughout the built space. Each of the five elements of nature are considered important because they are backed by spiritual or religious stories that relate them to be associated Vedic gods who control those elements.

In Vaastu Shastra, each the building is designed in accordance with specific rules or guidelines. To begin, Vaastu Shastra uses cardinal directions and each cardinal direction is associated with a set of Vedic deities that connects to the direction and determines the function of the space that falls in that direction. The intermediate directions are associated with one of the five elements of nature with the center occupied by Brahma and also the element of sky or ether.\textsuperscript{48}

\textsuperscript{46} Chakrabarti, Indian Architectural Theory : Contemporary Uses of Vastu Vidya.63
\textsuperscript{47} Cox, Vastu Living : Creating a Home for the Soul. 39
\textsuperscript{48} Cox.45
The *Vaastu purusha* mandala, a planning tool can be divided into grids of 1, 4, 9, 16, 25, 36, 49, 64, 81, 100 and so on up to 1024 sections. The divisions with one (Fig. 2.6) and four (Fig. 2.7) are used only for ritualistic purposes, while the plot of nine (Fig. 2.8) and above can be
used for dwellings of man and God. According to the grids, the deities occupying the squares in the grid keeps increasing as the number of squares increase. The simplest grid is the one and four divisions in which the main four gods Varuna (associated with rain/ocean), Soma (moon god), Aditya (sun God), Yama (God of Death), rule four sides that make the square on west, north, east and south respectively (Fig. 2.6 and 2.7). The nine square grid has additional Gods on each corner along with the four Gods mentioned above. Isa (water) in the northeast quadrant, Agni (fire) in the southeast, Prithvi (earth) in the southwest and Vayu (wind) in the northwest. As the grid becomes larger, the center is occupied by Brahma (Fig. 2.8 and 2.9). With increasing grids, additional gods are added and each of them represent peripheral plots of the site and are related to the divinities of the nine square mandala.

Site and orientation So according to the mandala, the northeast is guarded by the Vedic God Isa (water) and so having a body of water in the northeast is said to be auspicious. It is clear from Fig. 2.5, that the temple complex has a theerthakund (ablation pond) in the northeast quadrant. The northeast direction is considered the gateway to the gods and is believed to be the source of positive power and positive cosmic energy.

The entrance to the temple is on the east side which is the most auspicious and conducive to success side, to have an entrance, particularly in a temple, since it faces the Sun god, Surya. This is because Surya rules the east side of the mandala and provides light and enlightenment.

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49 Chakrabarti, Indian Architectural Theory: Contemporary Uses of Vastu Vidya.64
50 Chakrabarti.65
51 Cox, Vastu Living: Creating a Home for the Soul.47
52 Cox.53
The southeast quadrant belongs to the Fire God Agni. Agni represents the light of knowledge and awakening of the soul. The fire element is also considered to help in freeing of the soul from entrapment within the body. The south is ruled by Yama, the God of death who also oversees the world of our ancestors. Using this space efficiently can help in receiving the strength and wisdom of the ancestors. So here, in the temple complex (Fig. 2.5), the main temple is located in the southeast and south part of the site which enforces that people visiting this temple will be blessed with knowledge and will experience an awakening and freeing of the soul and can also obtain the blessings of their ancestors.\textsuperscript{53}

The southwest quadrant belongs to Earth God Prithvi and is associated with wisdom. This quadrant helps activate the knowledge and wisdom in the minds of the user. It can be used to place gardens with heavy stones and sculptures because this part of the site should be the heaviest. If the site has a natural elevation in the southwest, it can be left alone.\textsuperscript{54} As you can see from the plan of the temple complex (Fig. 2.5), the southwest quadrant is left as it is with a little landscaping to enhance the visual element while still keeping with the Vaastu guidelines.

The northwest quadrant is ruled by the God of wind, Vayu. Vayu helps in the movement of thoughts that lead to accomplishment and success. Since movement is associated with this quadrant, placing guest bedrooms or temporary spaces in this quadrant helps in removing the stagnant group of people.\textsuperscript{55} So, by taking advantage of this element, guest complexes, public toilets and amenities are placed in the northwest quadrant of the temple complex, which helps in maintaining the huge influx of people to the temple.

\textsuperscript{53} Cox.52
\textsuperscript{54} Cox.49
\textsuperscript{55} Cox.50
In general, the north side, which is ruled by Soma and Kuber, Lord of moon and health respectively is the perfect location for any space that needs success. The blessings of both Kuber and Soma (i.e., wealth and health) will be available.\(^{56}\)

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<th>North</th>
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<th>South East</th>
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<td>Good</td>
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<td>Pooja / Spiritual / Tranquil space</td>
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<td>Garage / Parking</td>
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<td>Verandah / Balcony</td>
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*Fig. 2.10., Vaastu Planning matrix, 2020, Drawing produced by author*

The above matrix prepared by the author after understanding the basic principles shows the recommended placement for the rooms according to the Vaastu purusha mandala. This can be used as a key to figure out the planning of spaces on any site and can be customized according to the needs of the user and the site.

*These are just guidelines and not hard and fast rules.

\(^{56}\) Cox.52
Feng Shui

Purpose

Feng Shui pronounced as “fung shway” and translates to “wind” and “water” is the Chinese art of placement. Feng Shui is a way of understanding the flow of the earth’s energy and cooperating with it rather than opposing it, and of channeling it for beneficial results. Chinese Feng Shui is a popular organizational system used to redecorate or clean up houses to achieve happiness and balance. It is also used to improve career opportunities and work performance, focus on simple living, achieve harmonies relations with the environment or just quick solutions to increase the quality of life and also to simply add personality and interior design. “The Feng Shui tradition is a piece of Chinese history, inseparable from Chinese cosmology and popular religion and deeply intertwined with the social and political processes of Chinese history.”

History

Feng Shui as a terminology became common only during the Song dynasty (960-1279), but earlier mentions of some of the terms related to the present-day Feng Shui existed in the practice of forms of divination. These terms like yin-yang and dili (earth principles/geography) and zhanbu, xiangzhai, kanyu (heaven and earth) found in early Chinese historical records had commonalities with Feng Shui in theory and practice. But only during the Song period (960-1126) and late Song period (1126-1279), Feng Shui was constructed as a separate branch of

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58 Damian Sharp, Simple Feng Shui (Berkeley, Calif.: Conari Press; Distributed by Publishers Group West, 1999). 1
59 Ole Bruun, An Introduction to Feng Shui (New York: Cambridge University Press, 2008). 1
60 Bruun.1
study. Divination was practiced in China mainly for Imperial and religious functions. Later the same divination rules along with Chinese cosmology were applied to the planning of cities. It is believed that the four ancient capital cities of China were chosen as capitals because they were all built on auspicious land. The cities were laid out with reference to the classic *Zhou li (Rites of Zhou)* which is said to predate Feng Shui. The ancient Chinese observed nature and how it reacts to human actions. For example, how building a high tower could cause gushing winds or how diverting rivers for irrigation affects the soil in the longer run etc. They understood that human actions have a deep impact on natural forces and so it was only logical for these powerful natural forces to have a profound influence on the lives of human beings. When inhabitants of ancient China were looking for lands for agriculture, they were already aware of this knowledge of Feng Shui and had developed basic principles. Over the years, these principles have been modified and adjusted by generations of practitioners and thereby Feng Shui became a geometric and geomantic art form. After all these years, Feng Shui is still the study of how we are affected by the environment and how we can manipulate our surroundings to enhance our lives.

**Schools of Feng Shui:**

Feng Shui is practiced in many ways and there are a few schools of thought. In China, two schools of thought are typically recognized: The School of Forms (Form school) and the School of Directions (Compass school).

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61 Bruun.11  
62 Bruun.31  
63 Sharp, Simple Feng Shui .2  
64 Rossbach and Lin, *Feng Shui Design: From History and Landscape to Modern Gardens & Interiors*.10  
65 Bruun, *An Introduction to Feng Shui*.110
Form school The ‘Schools of Forms’ exhibits greater continuity with earlier philosophy of divination. It is associated with the ‘influence of forms and outlines’ including mountains, hills and water courses. The School of Forms reads the configurations of the landscape surrounding a site. It considers all aspects of including mountains, ridges, slopes, rocks, streams, and vegetation. It also considers the flows of wind water and ‘chi’ in order to comprehensively study a site and understand the forces at play.66

Compass school Under the influence of Zhu Xi’s school of metaphysics, another school of Feng Shui came into practice. By granting principle importance to Ba Gua as well as the constellations, it became attached to the compass and therefore the name, School of Directions. This school of Feng Shui is to a greater extent occupied with determining directions according to compass points, using the luopan (the Feng Shui compass). Unlike Form school, which gives importance to outlines and breath of nature, the Compass school is more occupied with cosmological order and correlations to the compass directions, potentially bringing the entire range of Chinese cosmology into play when investigating a site. While the Form school is based on the subjective interpretation of the landscape which is easier to practice, the Compass school is based on mechanical applications of its principles and is very difficult to practice due to lack of internal consistency.67

There are other schools of thought which stemmed later, like Black Hat Sect Tantric Buddhist Feng Shui developed by Master Lin Yun which is a combination of Tibetan Buddhism, Taoism, and Classical Feng Shui. Schools such as the Ba Gua School of Feng Shui, the Flying Star

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66 Bruun.110
67 Bruun.110
School, and others have been developed recently to cater to the Western civilization and offer cures that are more suited to the Western way of life.68

**Basic Principles**

Even though there are various schools of thought, the basic principles used in each of them are the same. These schools of thought vary only in the way they use these principles especially Ba Gua to determine and obtain the harmony within nature and man.69 But for the purposes of this study, the Form school of thought which is the oldest and the easiest to practice will be used for further discussions. The basic principles of Feng Shui will be explained using an example. The planning of Forbidden City will be used to explain how the basic principles have been implemented in them and why it is important for the Asian culture.

**Forbidden City and Feng Shui Principles**

Forbidden City is the Imperial palace complex at the heart of Beijing, China. It was commissioned in 1406 by then Emperor Yongle of Ming dynasty and was first officially occupied in 1420.70 It was named so because, access to the area was restricted to most of the subjects of the realm. Government functionaries and even the imperial family were permitted only limited access. Only the emperor alone could enter any section at will. The Forbidden City was designated by UNESCO as a World Heritage Site in 1987 in recognition as the seat of Chinese power for the past five centuries, as well as for its exceptional architecture. The architecture of the palace complex rigidly coheres to the Chinese practice of Feng Shui. 71

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69 Rossbach and Lin, *Feng Shui Design: From History and Landscape to Modern Gardens & Interiors.*
71 “Forbidden City.”
Yin-Yang are complementary opposites of Taoist philosophy. Taoism is one of the three major religions of China, the other two being - Confucianism and Buddhism. From heaven and earth, the philosophy of yin and yang was developed. Yin is female, negative, dark, soft, receptive, the Earth. Yang in male, positive, light, hard, creative and Heaven. The two opposite principles complement rather than complete each other. Both are needed to complete and balance the universe.  

Chi is the universal life energy that flows between spirit and matter. The most important concept in Feng Shui is to have good Chi in the space. Chi is neither yin nor yang but flows between the two seeking natural balance. When the flow of Chi is disturbed it turns into negative form of energy which causes bad things to happen. When it is left undisturbed, the
lives are enriched. Chi, like wind and water moves in a gentle flowing motion and is said to be disturbed by harsh straight lines (lines of furniture and sharp corners).\(^{73}\)

**Eight trigrams and Ba Gua** Trigrams are three rows of lines either broken or solid which has a specific meaning with respect to what kind of lines they have. The broken lines indicate Yin and the solid lines indicate Yang and the resulting trigrams symbolize natural forces and formations. The collective image of the trigrams creates the Ba Gua which literally translates to ‘eight trigrams’ is the symbol of cosmic energy and wholeness.\(^{74}\) The Ba Gua is a diagram which in traditional Feng Shui is a static template. The individual trigrams are superimposed on a site according to the cardinal directions and the space is designed accordingly. In the newer schools of Feng Shui, the Ba Gua is not static, but rather changes. But the goal of all schools is to raise the Chi in a location and to improve the lives of the occupants.\(^{75}\)

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\(^{73}\) Sharp, Simple Feng Shui .4

\(^{74}\) Rossbach and Lin, Feng Shui Design : From History and Landscape to Modern Gardens & Interiors 33

\(^{75}\) Rossbach and Lin. 33
In the Forbidden City, the emperor resided in the chyan area, Ching gung (the Palace of Heavenly Purity) named for the gua or trigram chyan – three yang lines, which represent the Yang and the south. The empress lived in the Kuen Ning gung (The Palace of Earthly Tranquility) names for the gua kuen – three yin lines – which symbolizes yin and the north.  

**Location of site** The basic idea of the Feng Shui lies in the principle of ‘induction’ and the belief that human and natural events interact with each other. In order to induce the beneficial chi into the human habitable spaces, the first rule is to find a land or site where chi is most accumulated. The elements present in and around the site determine the type of energy in the space. By designing the space in harmony with the surroundings, we can enhance the chi in the space. The natural forces and elements that are considered in each site are, ridges of mountains (dragon), the enfolding hills (sand), watercourses (water) and the site (cave).  

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76 Rossbach and Lin. 65-66  
The imperial palaces and capital cities were constructed in an orderly fashion. They were situated south of a mountain and north of water or surrounded by natural or man-made moats. They were constructed in the north-south and east-west axis and followed a rigid placement of walls, gates, and towers along these axes.78

The Forbidden City contained a water system to cool and provide drainage for the palace. The water feature enters from the northeast corner and exits from the southwest corner. A man-made river wandered in the southern section, to protect an area in the south which is associated with fire. Even the cemeteries are positioned in the north or west of the capital in the quadrants that symbolized winter and autumn, seasons of death and decay.79

**Five elements** Taoism recognizes the five elements of nature: metal, wood, water, Earth, and Fire. They correspond to each of the four cardinal directions and the center of the Ba Gua. Each of these four directions also represent a season east-Spring; south-Summer; west-Autumn; north-Winter. The five elements affect one another and there are fixed cycles in which they are used, which is either the Generative order or the Destructive order. When assessing the Feng Shui of a site, it is important to understand how these five elements come into play and which element is predominant on the site, so as to devise a plan according to the orders to help design spaces depending on the need. These five elements when superimposed on the Ba Gua can instruct us on how to use their associated colors and attributes to enhance the life and surrounding of the habitants.80

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78 Rossbach and Lin, *Feng Shui Design: From History and Landscape to Modern Gardens & Interiors.* 66
79 Rossbach and Lin. 66
80 Sharp, Simple Feng Shui. 32
Colors in Feng Shui have associated meaning. Yellow is associated with power and earth and the roofs of Forbidden City are primarily roofed with yellow tiles to symbolize his position and rule with authority over the realm. The emperor also dressed themselves with golden silk robes. The imperial library’s roof was with black tiles, because it symbolizes the color of water element and thus symbolically protected the archives and library from fire. Both physical and the political positions are expressed and reinforced by the usage of color.

<table>
<thead>
<tr>
<th>Attributes</th>
<th>Direction</th>
<th>Color</th>
<th>Element</th>
<th>Best Room Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel &amp; Helpful people</td>
<td>North</td>
<td>White, Gray, Black</td>
<td>Metal</td>
<td>Garage</td>
</tr>
<tr>
<td>Career</td>
<td>North</td>
<td>Black</td>
<td>Water</td>
<td>Living Room, Study room</td>
</tr>
<tr>
<td>Knowledge/Spiritual Growth</td>
<td>North East</td>
<td>Blue, Green, Black</td>
<td>Earth</td>
<td>Spiritual place Study room</td>
</tr>
<tr>
<td>Family / Health</td>
<td>East</td>
<td>Green</td>
<td>Wood</td>
<td>Family Room, Living Room</td>
</tr>
<tr>
<td>Wealth &amp; Prosperity</td>
<td>South East</td>
<td>Purple, Blue, Red</td>
<td>Wood</td>
<td>Any room to activate</td>
</tr>
<tr>
<td>Fame</td>
<td>South</td>
<td>Red</td>
<td>Fire</td>
<td>Kitchen, Bedroom</td>
</tr>
<tr>
<td>Love, Marriage &amp; Relationships</td>
<td>South West</td>
<td>Pink, Red, White</td>
<td>Earth</td>
<td>Master Bedroom</td>
</tr>
<tr>
<td>Children &amp; Creativity</td>
<td>West</td>
<td>White</td>
<td>Metal</td>
<td>Children Bedroom, Study Room</td>
</tr>
<tr>
<td>Health</td>
<td>Centre</td>
<td>Yellow, Orange</td>
<td></td>
<td>Least Clutter</td>
</tr>
</tbody>
</table>

Fig. 2.15., Feng Shui Planning matrix*, 2020, Drawing produced by author

*Feng Shui just gives suggestions for placement of rooms, but the rooms can be located in any of the squares as needed to activate the required attribute of that corner.

81 Rossbach and Lin, Feng Shui Design: From History and Landscape to Modern Gardens & Interiors, 66
82 Rossbach and Lin, 67
Similarities and Differences Between the Design Systems

By studying the three design systems, it is clear that there are multiple similarities in the way each of these design principles were formulated. The basic ideologies and principles of *Vaastu Shastra*, Feng shui and Classical design overlap in the following ways.

**Choosing the Site** Selection depends on the surrounding and the soil type, and availability of water though regarded as common sense, has been practiced in both of these design systems for so long under the name of design principles and religious superstitions. Even Vitruvius who wrote books on architecture has dedicated a chapter on how to choose a site.

**Using a Gnomon** Each of the design systems follow a type of gnomon, or a measurement tool, that is superimposed over the site to determine the orientation of the space to be designed. Classical design systems have the gnomon divided into sixteen parts to measure the shadow cast by the gnomon, Feng Shui has the Ba Gua with the trigrams, while *Vaastu Shastra* has the *Vaastu purusha* Mandala.

**Using Five Elements of Nature** A common practice between *Vaastu Shastra* and Feng Shui is to use elements of nature. Feng Shui uses the five elements: Wood, Fire, Earth, Metal and Water. *Vaastu Shastra* also has five elements of nature which consists of Earth, Fire, Water, Space and Air. Though the exact same five elements haven’t been used, the usage of natural forces and their influence in the design is considered important by the two design systems.

**Importance of Cardinal Directions** Both *Vaastu* and Feng Shui give importance to the cardinal directions and how they manipulate their site in accordance with them. This importance given to the cardinal directions shapes the design of space and also helps in the idea of living in harmony with nature, which again is a similar philosophy found in both systems.
Even though the basic principles of these design systems have a lot in common, the way each of them is applied, varies from one design system to the other. And this difference is because of the difference in culture and geographic region they were developed and practiced.

A distinct difference between Feng Shui and Vaastu is that Vaastu Shastra is considered a pseudo-science of architecture and it gives guidelines on how to design and also provides guidance on what to avoid. By doing this, Vaastu Shastra gives a template to work around which can be customized and manipulated according to the site and the needs of the user. This template gives enough freedom while limiting the architect or designer who uses them as guidelines to work around.

Unlike Vaastu, Feng Shui is an art of placement. This is mostly used to help rearrange the furniture, or placement of rooms in accordance with the Ba Gua map to bring in or increase harmony and tranquility. This Ba Gua map serves as the tool that helps the user decide on the design and placement of furniture in the house. So, this tool is more helpful and convenient to use to rearrange in an already built environment.

The principles of design along with elements of design are guides that can be used to help in the aesthetic part of the design that can go along with any of the cultural design systems to make the design aesthetically and practically pleasing.

Since there is considerable overlap between the design systems, combining them to create a universal design system is feasible. When deciding to combine these design systems, using the Vaastu principles to create a floor plan and then applying the Feng Shui and Classical principles of design on the interiors would be compliant to all of these cultural design systems, while also developing an efficient design that is in harmony with nature and natural elements.
CHAPTER 3. INTEGRATION OF MULTIPLE DESIGN SYSTEMS: HISTORIC AND CONTEMPORARY

The importance of integration of multiple design ideologies has been understood by many historic cultures. This chapter discusses examples of design integration in the past and in the present, to suggest the historical importance and the contemporary need for it. In this chapter, the historic design integration of Islamic and Indian cultural systems is represented by the Taj Mahal mausoleum in Agra, India. The contemporary example is represented is a Pont street apartment in London, designed by the firm One Point Six. Within it, the architects have integrated the Indian system of Vaastu into an existing luxury apartment, thereby combining Vaastu and Western design systems.

Taj Mahal, India

The Taj Mahal is a mausoleum complex located in Agra, India, in the state of Uttar Pradesh. The Taj Mahal is a blend of Indian, Persian, and Islamic styles of architecture. It was built by Mughal emperor Shah Jahan for his wife Mumtaz Mahal in 1643 with an idea to immortalize her and their love for each other. It is one of the finest examples of Indo-Islamic architecture and as such, was designated a UNESCO World Heritage Site in 1983. It is one of the Seven Wonders of the New World and, one of world’s most iconic buildings which is visited by millions of tourists every year.83

The combination of different cultural styles of architecture, which includes the play of geometric figures from Indian architecture and the calligraphy and symbolic representations of the Islamic culture make it relatable to multiple cultures and a popular architectural edifice in

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India. Importantly, also expressed in Taj Mahal and a characteristic that makes it popular and relatable to every person in the Western world is the integration of Classical principles of design. Even though the Classical principles haven’t been applied in their true form, certain principles of Indian and Islamic design, overlaps with the Classical design, making the Taj Mahal to be considered an exquisite beauty by people from at least half of the world’s cultures.

The Taj Mahal is the culmination of Indo-Islamic architecture in India. But the journey that this combination of architectural styles went through, is clearly visible from the images below. These are of earlier structures of mosques and mausoleums that were built during the sultanate and the early years of the Mughal period.

Fig. 3.1., (left) Mausoleum of Iltutmish, Delhi, by 1236, with corbel arches, Bikashrd, Accessed March 10,2020, https://en.wikipedia.org/wiki/Indo-Islamic_architecture#/media/File:Tomb_of_Altamash.jpg, CC BY-SA 4.0

Fig. 3.2.,(right) Buland Darwaza gate to Jami Masjid mosque, Fatehpur Sikiri, India,1601CE, Marcin Bialek, Accessed March 10,2020, https://en.wikipedia.org/wiki/Indo-Islamic_architecture#/media/File:Fatehpur_Sikiri_Buland_Darwaza_gate_2010.jpg CC BY-SA 3.0

Fig. 3.1 and 3.2 illustrates that there is a clear overlap of traditional Indian palace architecture and Islamic architecture in the structures built during the early periods of Indo-Islamic architectural style. The usage of red sandstone which was available locally created a characteristic look for Indo-Islamic buildings. Also, the usage of features from Indian palace architecture and features from Hindu temples and old abandoned buildings combined with the
traditional Islamic features of ogival domes, pointed arches, minarets and usage of calligraphy gave way to the Indo-Islamic architecture.

![Fig. 3.3., Taj Mahal, 2016, Photo by Author](image)

Indo – Islamic architecture was at its peak during the construction of Taj Mahal. So, earlier construction of mosques, tombs of Indo-Islamic architecture have a huge influence of Indian architecture in them. The motifs and decoration were of Indian origin and were later refined to include Persian and Islamic motifs. Even though, the Taj Mahal has a lot of features from Islamic design, it also has some influence of Indian architecture. Indo-Islamic style still follows a few decorative elements and motifs from Indian palace architecture.
Some of the characteristic features of Islamic design include the usage of the onion shaped dome (Fig. 3.5), the perfected pointed arches, and tall minarets (towers) (Fig. 3.4). The famous Mughal gardens known for their symmetrical balance and use of geometric designs, present in the mausoleum grounds and the Quran verses intricately inscribed in calligraphy on the walls of the Taj Mahal are also some identifying characteristics of Indo-Islamic design. All of these elements of design can be found in the Taj Mahal.

![Taj Mahal with minarets](image)

*Fig. 3.4., Minarets, Taj Mahal, 2016, Photo by Author*

The Indian architectural features used in Taj Mahal, in conjunction with the above-mentioned Islamic design include the usage of Chhatris. Chhatri meaning canopy or umbrella are elevated dome-shaped pavilions, a classical Rajasthani architectural element, embraced as an element in Indo-Islamic architecture. The chhatris can be found on top of the minarets (Fig. 3.4), on four corners of the main onion dome and also on top of the columns that arise from the base. All of the chhatris have a lotus motif on top which is again a classic Indian/Hindu decorative element.
Motifs in the pietra dura in Taj Mahal and the carvings done inside the Taj Mahal represent multiple species of nature that are common to the area. “The floral decorations reflect the extent of floricultural knowledge in the Mughal period. Most of the plants that make up the floral imagery of the mausoleum are indigenous to India and the Mideast and represent plants frequently illustrated in Persian paintings and rugs.” 84

The usage of the red sandstone has been very common in Indo-Islamic structures. The most important buildings used red sandstone in combination with white marbles for domes and cupolas as seen in Humayun’s tomb. “By using white and red in their buildings, the Mughals represented themselves in the terms of the two highest levels of the Indian social system: architecturally speaking, they were the new Brahmins and the new Kshatryas of the age.” 85

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It is also clear that the Classical principles of design—symmetrical balance, scale and proportion, emphasis, and rhythm—are all visible in Taj Mahal.

**Symmetry** The Taj Mahal is one of the best examples of symmetrical balance as not only the main mausoleum is symmetrical, but the entire garden complex is perfectly symmetrical. The Mughal architecture, famous for its gardens display perfect symmetry, on all four directions.

**Rhythm** The series of trees that line up along the central waterbody, creates a movement in the eye and a rhythm in the design. It is achieved by repetition of the features along the central pond in a symmetrical fashion to make the eye travel to the main tomb.

*Fig. 3.6., The Taj, Taj Mahal, 2016, Photo by Author*
**Emphasis** Emphasis can be achieved through a few ways. Here is it achieved by the use of repetition and rhythm which creates an emphasis on the central onion-shaped dome. The emphasis is also done in a hierarchy. As soon as one enters the complex, we can see that the entire building of Taj Mahal is emphasized through the central arched gateway (Fig. 3.6). Then as one moves further along in the complex, the gardens and the central pond uses symmetry and rhythm to create an emphasis on the central hexagonal part of the Taj Mahal.

**Scale and Proportion** The Taj Mahal is a carefully planned and executed Mughal design. The Char Bagh, (garden) is a perfect square of 300m long and is designed to be the best of Mughal gardens. The main mausoleum is 56.9m X 56.9m. The minarets on four corners act as frames for the Taj Mahal. The letters of the calligraphy on the façade increases in size according to the vantage point, to give the illusion of a uniform appearance.86

It is clear from the discussion above; how multiple cultural design styles are blended together to make a style suited for the demographic of India at the time of Muslim invasion. The evolution of the designs arose from first having a ruling majority favoring Indian influence and then to having a ruling majority favoring Turkish and Islamic influences. It is evidence that combining traditional design systems can accommodate the changing demographics of any country and yield a design of much broader appeal.

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86 “Taj Mahal.”
49-51 Pont Street, London

The London firm One Point Six recently developed a luxury apartment at 49-51 Pont street in the Knightsbridge enclave, an upscale area in central London, located near Hyde Park and Sloane Street, the high-end shopping district with Harrod’s, Harvey Nichol’s, and other elite retailers. Due to the increasing demand from Indian customers, One Point Six redesigned apartments on Pont Street to have renovated rooms with modern features and Vaastu principles of orientation. While keeping the exterior of the historic architectural facade intact, apartments have been opened to maximize space and a flexible, free-flowing layout.

Fig. 3.7., 49/51 Pont Street, One Point Six, 2018, © One Point Six Development Ltd.,

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Fig. 3.8., (Above) Old plan, 4951 Pont Street, One Point Six, 2018, © One Point Six Development Ltd. 88

Fig. 3.9., (Below) New plan, 4951 Pont Street, One Point Six, 2018, © One Point Six Development Ltd. 89

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89 ibid
As we can see, from Fig. 3.8 and 3.9, there’s a distinct difference between the old layout and the new layout. The entire apartment has been redesigned to accommodate to the contemporary architecture and design, while also in accordance with the Vaastu purusha mandala, trying to achieve the maximum compliancy possible with the already present restrictions of the apartment. They were able to achieve an 80% compliant plan.

The longer side of the apartment faces north (Fig. 3.8 and 3.9), with a long wall of windows bringing in the therapeutic and medicinal aspects that belong to the northern quadrant ruled by Soma, the lord of health and the prosperity because of the God Kuber, the lord of wealth and indulgence. The entrance faces east, which is one of ideal locations as it brings in the light and enlightenment provided by Surya, the Sun god, ruler of the east.

Comparing the two layouts, it is clear that the kitchen in the old layout is in the south, rather than the southeast which is the ideal location. In the new layout, the kitchen has been moved to the ideal southeast side as it is associated with fire god Agni. This is the corner which is associated with the light of knowledge and the awakening of the soul. Since the kitchen is dealing with a lot of fire and electric equipment, placing them in the southeast quadrant is the ideal location. Even the placement of the appliance in the kitchen is arranged to be Vaastu compliant as much as possible. The appliances like the oven and the microwave which radiate heat, are best to be kept near the southeast corner according to Vaastu, as it is dealing with the fire element. This is also followed in this apartment and the appliances are placed along the east wall, in the southeast corner (Fig. 3.10).
The dining area should be placed along with the kitchen and can be on the west or east side of the home. The apartment is designed to have an open layout, with flow between the kitchen, dining and living, while also following the Vaastu guidelines.

The ideal living room should be in the northwest, north or northeast side. In the new layout, we can see the living and dining area is in the northeast, which is the quadrant belonging to water god Isa, which will make it a repository of positive cosmic energy. Because it is also the gateway to the gods, this place will be serene, which is highly important for a family room. This specific placement of the family room can help promote family bonding, while also bringing in positive energy inside the home.

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91 Cox, Vastu Living : Creating a Home for the Soul.
92 Cox.
Bedrooms can be placed anywhere in the house, but the preferred locations are southwest, west or northwest. The new layout (Fig. 3.9) has taken the entire west side to use it for the design of bedrooms. It is recommended to have the position of the bed in a way that one sleeps with their head to the south or east and it is achieved in two of the three bedrooms.

Changing the old layout to the new and making is Vaastu compliant has made the apartment more open, filled with light and also take advantage of the natural elements available to create harmony in the house. Even though achieving 100% Vaastu compliance in layout is the ideal sought, even an 80% compliancy can make a significant positive impact in a space that wasn’t Vaastu compliant before, bringing in happiness and harmony.

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This apartment was listed at 4.75 million pounds and has had a lot of viewings and interest in the property. It was said to be sold when the researcher contacted the company via telephone in December 2019 in search of information about the property. This suggests that there is demand for culturally integrated housing and the importance for such a collaboration.

The need for integration of different cultures is increasing and to have an high-end apartment listed in an upscale neighborhood and being sold with high demand, emphasizes the need to formulate an design philosophy that is more inclusive to diverse cultures and that can be made available to not only wealthier members of the population, but also to designers who can help people with multiple cultural background reach satisfaction.

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CHAPTER 4. CONTEMPORARY INTEGRATED DESIGN SYSTEM

Creative Component Part 1 – Integration and Two-Dimensional Application

After analyzing and understanding the design systems and also establishing the similarities between them, an integrated design has been proposed. As discussed in Chapter 2, the Vaastu Shastra has definitive principles revolving around the cardinal directions, making it easier to be applied in any site and in any geographical region. Applying the Vaastu purusha mandala on a site, helps in determining the placement of different rooms according to the orientation of the site and the needs of the user.

Then the Feng Shui principles can be applied to help with the aesthetics of the house, since the Feng Shui Ba Gua has the attributes to each quadrant and a color and natural element associated with it. This can help in deciding the shape and color of the furniture, furnishings and themes to be used in the house relating to the activities in each of the quadrant and activate the attribute of the space to achieve overall harmony and prosperity.

The Classical principles of design along with the elements of design can be used in combination with Feng Shui to boost the aesthetics of the house while making the circulation inside the house practical. The Classical principles of design can be used to decide on how to use the colors suggested by Feng Shui principles to create a visually harmonious design. It can be used in conjunction with Vaastu to enhance the practicality and harmony of the design.

As shown in Fig. 4.1, the planning of the house according to the Vaastu principles can also help in dividing the house into three zones, public, semi-private and private, which thereby keeps the privacy of the house intact. Fig. 4.2 shows the same nine squares with the corresponding attributes, colors and elements associated, according to Feng Shui. Both the
diagrams overlapped together, along with the matrix (Fig. 2.10 and 2.15) derived from the understanding of the design systems, helped in preparing a new integrated residence design.

This design created is a layout that has been developed after thorough understanding of the cultural design systems. This is just a suggested layout and not the only possible solution. All of the discussed design systems give only suggested rules and guidelines which can be wielded and customized to the site and the needs of the user after careful understanding of the client’s requirement. This design demonstrates that combining the design systems can not only be helpful for the immigrant and migrant population, but can also create sensible and beautiful designs, that is also harmonious to the surrounding environment.

By overlapping both the diagrams of 9 square grid, a design for a 2095 square feet residence was developed (Fig. 4.3). The placement of the rooms was guided by the diagrams Fig. 4.1 and 4.2, and the interiors were designed accordingly with the color scheme obtained from the Feng Shui guide diagram (Fig. 4.2).
Car Park space or garage on the northwest quadrant, according to Vaastu and activate the travel attribute according to Feng Shui Ba Gua and metal element

Bathrooms placed on the west side, color themed white according to the Feng Shui Ba Gua and designed to be a tranquil and as a place of relaxation

Central quadrant is left open according to both Vaastu and Feng Shui principles to connect to the cosmos and bring in positive energy inside the house. It is also decorated with orange furnishings

Master bedroom placed in the southwest quadrant according to Vaastu principles to assert strength and dominance and decorated with the color theme according to Feng Shui Ba Gua (Pink)

Bedroom placed on the south quadrant, decorated with color theme according to Feng Shui (Red) and furniture placement according to Vaastu, bed placed in the east-west direction

Entrance in the northeast to bring in positive cosmic energy in accordance with Vaastu. Foyer to give space for Chi to collect and spread into the house, according to Feng Shui

Living room in the north quadrant for success, according to Vaastu, usage of color Black according to Feng shui Ba Gua to activate the career attribute, and designed with principles of design – Emphasis

Spiritual corner occupies northeast and east quadrant according to Vaastu, and activates Spiritual and Family attributes according to Feng Shui Ba Gua

Deck or Verandah on the east side to soak in the morning sun according to Vaastu. Wood element activated according to Feng Shui Ba Gua

Kitchen and dining placed in the southeast corner according to the Vaastu Guidelines and the color scheme is according to the Feng Shui Ba Gua (Blue), and is designed in contemporary style with principles of design – Emphasis and Harmony
Creative Component Part 2 – Iconography Analysis and Three-Dimensional Renderings

After the design of the plan, underlying stylistic elements from each of the design systems including forms, motifs and iconography is identified and analyzed. The motifs and imagery that are most commonly used in the design system, their value to the culture and the validity of these imagery are discussed below.

Graeco-Roman Iconography

Order The Graeco-Roman order consists of five major orders: Doric, Ionic, Corinthian, Tuscan and Composite. Ancient Greek architecture developed two distinct orders – the Doric and Ionic and later developed the Corinthian order. The Romans created the Tuscan order as an adaptation of the Doric and then later the ionic and the Corinthian adaptation of the Roman order was developed. It is called Composite because of the combination of the ionic volutes and the Corinthian acanthus leaf decoration.95 These types of columns are still relevant to contemporary design and are used structurally as well as for decorative purposes.

Motifs and moldings Greek fret or Greek key pattern is one of the several types of embellishing ornament that are used as decorative borders. It is constructed from a straight

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line usually connected at right angles or G shapes to make bands of lines that are repeated to form a continuous motif. The Greeks used it for pottery and painted decoration of architectural members such as capitals and also in ceilings and floor tiles. Fig. 4.5 shows the different types of motifs that are still relevant and used in interior design, textile design and furnishings. Fig. 4.6 shows different types of Graeco-Roman moldings. The basic profiles of moldings like cavetto, ovolo, cyma recta and cyma reversa and others have traditionally been enhanced by carvings inspired by natural forms. These carvings usually consist of stylized flower or leaf forms, geometric motifs, spirals, or combinations of rounded and angular forms such as the familiar egg and dart pattern. Egg and dart and Crown molding are some of the famous types of moldings that are still used and considered valuable addition to interiors.97

Fig. 4.5 (Left), Greek border ornaments, meanders, courtesy of Shutterstock, ID: 158049533

Fig. 4.6 (Right), Six decorative bands and modular elements to create others in any dimension, Courtesy of Shutterstock, ID: 193097027

Indian Iconography

**Flower and animal motifs** Indian decorative arts are inseparable from the use of flowers and animal motifs. India is rich with various form of decorative arts developed in different

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regions of India. A lot of these are Indian folk art that have been passed on through generations and some have survived to become an important form of art. Such forms of art take inspiration from the local flora and fauna and use local materials for production. Some of the motifs like lotus, different types of indigenous flowers and vines, paisley motifs and prints of animals like elephants and peacocks are used in these forms of art and are still relevant and commonly used in interior design and décor.

Fig. 4.7 (Left), Blue Lotus, Olivia Fraser, courtesy of Architectural Digest, 2010, https://www.architecturaldigest.com/story/olivia-fraser

Fig. 4.8 (Right), Pooja room door, Accessed March 25, 2020, https://dressyourhome.in/6944/vipul-patel-architects-sets-bar-high-show-apartment

**Religious imagery and Figurines** Another form of décor that is very common in a majority of Indian household practicing Hinduism is having imagery and statues of Indian Gods. Hinduism is the most popular religion in India and a large number of Gods are worshipped and revered. Depending on the space available in the house, the pooja room or the spiritual space in a house is dedicated to house these imagery and figurines. The Pooja room can have framed pictures of different gods and figurines ranging from a few inches tall to life size statues. The
concept of the usage of such imagery is important in the culture and belief of Hindus and is
religiously practiced by a majority of people even today.

![Image of Ganesha](image1.jpg)

![Image of Goddess Saraswathi](image2.jpg)

![Image of Pooja Room](image3.jpg)

**Chinese and Oriental Motifs**

**Dragon motif** The Chinese dragon also called a ‘lung’ or ‘long’ is a type of majestic beast
that lives in rivers, lakes, oceans and roams the skies. This imagery is associated with
beneficence and fecundity. It was originally a rain divinity, and rain rituals during 6th century
BCE involving the dragon image being animated by processions of dancers. Such type of dances is still practiced in traditional Chinese communities to bring in good fortune.  

![Image of a Chinese dragon](https://creativecommons.org/licenses/by-sa/4.0/)

Fig. 4.12, An asset of a Chinese dragon, taken from the Qing flag, 2019, https://creativecommons.org/licenses/by-sa/4.0/

Ancient Chinese cosmology believes in four different type of dragons: Celestial dragon (*Tianlong*), who guards the heavenly dwellings of the Gods; the Dragon of Hidden Treasure (*Fuzanglong*); the Earth Dragon (*Dilong*), who controls the waterways; and the spiritual dragon (*Shenlong*) who controls the rain and winds. Generally, though depicted with scary features like horns, claws and large demonic wyes, the *long* is considered the king of animals the image was appropriated by Chinese emperors as a sacred symbol of imperial power. 

**Buddhist and religious imagery** In China, some of the major religions and practices include folk religious practices, Chinese Buddhism (Han), Taoism, Confucianism, other forms of Buddhism, Christianity, and Islam. Buddhist imagery may include paintings, figures and sculptures of Buddha or Bodhisattvas. Some schools of Buddhism use mandalas and diagrams

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99 “Long.”
to practice meditation. So religious figurines and imagery are entwined in the practice of these forms of Buddhism and so they are really important and relevant in contemporary design.

These imageries are also famous in countries like India, Japan, Nepal etc. and images and sculptures of Buddha are used in tranquil and meditation spaces to help bring peace and harmony.

![Fig. 4.13(Left), Seated Buddha, 1411 courtesy of The Metropolitan Museum of Art, Accessed March 25, 2020](image1.png)

![Fig. 4.14(Right), Mandala of Jnanadakini, 14th century, courtesy of The Metropolitan Museum of Art, Accessed March 25, 2020](image2.png)

After identifying and analyzing the different motifs and commonly used elements of different cultures, they are used to decorate the interiors of the developed residential layout. The different rooms (Fig. 4.15 – 4.20) are placed according to the nine square grid and designed and decorated using elements of different design system to visually show how they can be used in a cultural hybridization project.
The living room is the first room that is visible as soon as entering the house. The placement of the room is in accordance with the Vaastu and Feng shui principles (Fig 2.1 and Fig 2.12). It is placed in the north part of the house, in the quadrant ruled by Soma and Kuber and so helps in bringing in success, health and wealth. Also according to the Feng Shui Ba Gua, the quadrant has the attribute of career, and so the living room, where a lot of time is spent can help activate the quadrant and bring in good career opportunities for the people in the house.

The position of the living room in the Ba Gua map, dictates the color theme, as Black is the color in the Career quadrant of the map. Using this as the guide, the living room is designed with blacks, grays and browns.

The living room is designed according to the principles of design – Harmony, Balance and Emphasis. The accent wall expresses the principle of Emphasis and the TV unit exhibits Balance. The usage of the colors black, brown and gray are used cohesively. Different shades of blacks and browns exhibit Variety, and the usage of all of the shades in a relation to one another created unity in the design. Hence, the design principle harmony is used in the design of the space.
The kitchen is one of the important rooms in the house and is also a place where a lot of time is spent. So, the placement of the room is done in accordance with the Vaastu and Feng shui principles (Fig 2.1 and Fig 2.12). It is placed in the southeast part of the house, in the quadrant ruled by Agni, god of Fire and so is the best position for the kitchen according to Vaastu. Also according to the Feng Shui Ba Gua, the quadrant has the attribute of wealth and prosperity, and can bring in cash and increase harmony and opulence for the people in the house.

The design of the kitchen involves the use of colorful cabinets which exhibits the design principle of Emphasis.

The usage of gold metal accessories for the handles of the cabinets, the plumbing in the kitchen, the lighting fixture and the legs of the dining table, ties the design together. This is done by applying the Harmony-Unity principle of design.

The kitchen is placed in the Wealth and Prosperity quadrant of the Feng Shui Ba Gua and the colors associated with the quadrant are Purple, Blue and Red. So, the kitchen cabinets were made to be in a dark blue color to be compliant to the Ba Gua, while also giving a modern and contemporary look to the kitchen. This combination of usage of principles of two different design systems to create the design exhibits that integration of multiple design systems can be successful.
The bedroom is one of the rooms in the house where a person spends the most time. The placement of the room is in accordance with the Vaastu and Feng shui principles (Fig 2.1, and Fig 2.12). It is placed in the southwest part of the house, in the quadrant ruled by Prithvi, Earth God, which emphasizes strength and authority and so is the best position for a master bedroom according to Vaastu. Also according to the Feng Shui Ba Gua, the quadrant has the attribute of Love and relationship, and is the best for married couples to help strengthen their relationship.

The position of the living room in the Ba Gua map, dictates the color theme, and Pink, Red and white, are the colors in the Love, marriages and relationship quadrant of the map. Using this as the guide, the bedroom is designed with pinks, red, whites and purples.

Fig 4.17, Master Bedroom, 2020, Rendering produced by Author
The bedroom is one of the rooms in the house where a person spends the most time. This bedroom is located in the southern quadrant. According to Vaastu Shastra, this quadrant is ruled by Yama, which can emphasize the awakening, freeing of the soul and also obtain blessings from the ancestors. According to the Feng Shui Ba Gua, the quadrant has the attribute of fame, and placing a bedroom here can activate the space and help the person in the bedroom get more fame and pomp.

The position of the living room in the Ba Gua map, dictates the color theme, and Red is the color in the fame quadrant of the map. Using this as the guide, the bedroom is designed with red fabrics and accents of red in the wallpaper.

The bedroom is designed with motifs and elements from the Indian culture. The accent wall is embellished with Indian themed patterned wallpaper. Although it follows the color theme guided by Feng Shui, it also utilizes the color theme and combines it with colors like green and yellow which are commonly used in Indian design. The carpet has some of the commonly used prints. The pillows are prints used in Rajasthan.

Fig 4.18, Bedroom, 2020, Rendering produced by Author
According to both Vaastu and Feng Shui guidelines, the central part of the house has to be left empty or the least cluttered to achieve maximum harmony (Fig 2.1, and Fig 2.12). The residence is designed to have the central part of the house, open to sky, but covered with glass to protect from rain. According to the Feng Shui Ba Gua, this quadrant is associated with the Health attribute and leaving it uncluttered can increase the overall health of the household.

The position of the room in the Ba Gua map, dictates the color theme, as Orange is the color in the Career quadrant of the map. Using this as the guide, the room is designed to be empty with accents of orange.

The central open space overlooks the verandah and has a bench to sit and enjoy the view. The central area has a sunken floor and is filled with indoor plants to bring in nature inside the house. This can help bring more positive energy into the house because according to Vaastu Shastra, the central quadrant ruled by Brahma can bring in positive cosmic energy inside, connecting the ground and the sky.

Fig 4.19, Open to Sky, 2020, Rendering produced by Author
The pooja room is important to an Indian and Hindu household. This space can also be treated as a spiritual corner, or a tranquil space depending on the culture followed by the people living in the house. So, the placement of this space is done in accordance with the Vaastu and Feng shui principles (Fig 2.1, and Fig 2.12). It is placed in the northeast and east part of the house, which is the gateway to the gods according to Vaastu. Also according to the Feng Shui Ba Gua, the quadrant has the attribute of knowledge and spiritual growth, hence best suited for this space.

This space is designed as a typical Indian pooja room. It includes the pooja mandap, which is quite common in the design of a space of this nature as it resembles the Hindu temples in India. It is the house of God and so this place is revered and treated with utmost care. A typical pooja room, consists of imagery and figurines of the various gods of Hindu mythology as depicted in the image.

Some of the features of the room are distinct to a Hindu architecture and design. The wooden mandap and the lattice work is quite common and valued in the design of a mandap for the Gods.

The usage of brass bells are also very common in a typical pooja room design.
CHAPTER 5. CONCLUSIONS

With economic globalism and increased global conflicts, migration and immigration have risen to unprecedented levels, amalgamating diverse cultures at an accelerated pace. This has created a global need to support environments of multiculturalism and to facilitate successful cultural hybridization. Those immigrating from different geographical regions are in need of homes that support their belief systems and preferences, yet that are also expressed in ways that also are acceptable to the adopted countries. This thesis examines how principles of diverse cultural design systems could be integrated through the field of Interior Design to promote cultural hybridization.

Traditional design systems of world cultures have design principles that continue to be physically expressed in buildings across geographical regions. These design principles are ingrained in cultures and reflect part of a culture’s belief systems, preferences, and standards of beauty. Cultural design systems are not limited to borders of the countries that developed them or the cultures that furthered them. Significantly, fifty percent of the world’s populations have foundations in Classical principles of design, Feng Shui or Vaastu Shastra.

This thesis asked, 1) What are the underlying foundations and guiding principles of Feng Shui, Vaastu Shastra, and Classical design systems and what are the points of intersection, 2) Which aspects of the principles are still relevant or have successfully evolved, and 3) How could this information be used to create an integrated multicultural contemporary design system? The research methodology integrated archival analysis and comparative case study analyses of cultural design systems and multicultural integrations of design systems, using material cultural and iconographical analysis, and photographic and video analysis as needed.
The study identifies and explains the fundamental principles and ideologies of the design systems of Western civilization (Classical Principles of design), India (Vaastu Shastra), China, Japan and Far East (Feng Shui). It shows the principles have been implemented in the design of culturally significant buildings including the Parthenon in Greece, the Tirupati Temple Complex in India, and the Forbidden City in China, respectively. It also identifies similarities across these systems that would allow them to be integrated.

Through the Taj Mahal mausoleum in Agra, India it analyzes a successful example of cultural hybridization in the past, showing how designers of the Taj Mahal integrated Indian, Islamic, and Classical design principles. With an apartment in London’s Knightsbridge district, designed by the firm One Point Six, it provides an example of successful cultural hybridization in contemporary design, showing how the design combined Vaastu Shastra principles with Western or Classical principles of design.

The understanding of the basic principles of each of design system, similarities across the systems, and the knowledge of how different design systems were successfully integrated in the past and in the present, allows the researcher to create feasible prototypes of cultural hybridization. This study illustrates the idea through residential design.

After the clear identification of shared points of intersection across design systems, two-dimensional residential plans and three-dimensional renderings are developed to show how these principles could continue to be integrated in the future. Varying according to the location of the site, culture and religion of the client, it shows how the designer can use different combinations of the design systems and the iconography associated with them to create custom designs for people of various cultures seeking to experience the sense of home in a new
country. Renderings of the interiors provide visual guidelines as to how diverse principles can be applied together and used to create a cohesive design. They also show how different design elements and motifs can be used to create a room in a specific design style by understanding the iconography of each design system.

This research is useful for interior designers and architects and will facilitate planning for successful multicultural residential designs globally. It aims to facilitate multi-cultural understanding, acceptance, and cultural hybridization in a way that protects and reflects individual cultural values. It fills an important gap in the current interior design research and scholarship by identifying specific principles of each design system and by providing a basis for successfully integrating principles of design systems from multiple cultures within a single plan.

While this study illustrated integration of tradition design systems through residential design, the idea of such an integration is application to other interior design specializations including hospitality design and office design, and other design disciplines including architecture, landscape architecture, and industrial design. It is also applicable across income levels and to broader society rather than to just migrants or immigrants.

**Future development**

Looking forward, additional research is needed to understand the characteristics of other culturally significant design systems and the possibilities of the combination and application of them in contemporary design. Further, creation of an app or a software program with the collected information, that could suggest potential changes/options for multicultural residential design, allowing personal customization would further this research. This would serve as an additional tool to help contemporary designers use the principles of the diverse design systems to develop designs universally that are culturally significant and accurate.
REFERENCES


