

Vernacular Architecture of Bhutan as a Brand: Paradigms and Paradoxes

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Abstract

Bhutan is an inland country in the Himalayan region of South-central Asia, and is known for its unique culture and vernacular architecture. Vernacular architecture of Bhutan reflects its rich cultural heritage, religious beliefs, and historical significance and the natural setting. This paper examines the unique attributes of vernacular architecture of Bhutan and how the Government of Bhutan has gainfully utilized it for promoting Bhutan's unique identity.

The study includes observational study of the settlements in Bhutan, documentation of architectural styles, field-based notes on vernacular terminology related to building units, materials and elements of culture around the buildings. The study also examines the collaborative approach of the Bhutan government with organizations like UNESCO, World Bank and NGOs that have promoted the vernacular practices for building.

The paper findings show how the successful examples of promoting vernacular architecture from Bhutan can be used as a model or strategy for conserving cultural and built heritage as a brand and can be relevant in the South Asian context. The paper also discusses the paradox of how the balance between tourism and the unique identity of a place must be strategically placed to protect the distinctiveness of built environments, which otherwise depends significantly on tourism for sustenance.

Keywords: Vernacular architecture, City Branding, Bhutanese traditional architecture.

Introduction

Bhutan is an inland country, located in the South Asian region. The country is situated in the eastern Himalayan region, and is known for its unique culture, vernacular architecture and rich tradition. As a kingdom, it did not have external invaders and hence the influence of other cultural practices by way of invaders has not transfigured the native construction practices. Bhutan has always been a sovereign state and it has maintained its unique identity as a state with sustainable practices in culture, art and built forms. It is also well-known for its traditional architecture that has been preserved for centuries. Maintaining uniqueness in a built heritage is the most sustainable strategy to developing a brand identity (Al-Hinkawi & Zedan, 2021). To maintain and promote this uniqueness in built and cultural heritage the Royal Government of Bhutan is working in close association with the organizations like UNESCO and ICOMOS etc.

This paper examines the unique Bhutanese architecture and the government's approach to construct a brand identity through it. Its aim is to understand the strategy for promoting unique architecture of Bhutan as a brand. Its objectives are:

1. To document the vernacular architectural styles of Bhutan.
2. To identify the Bhutanese government and institutional support & collaborative approach for promoting vernacular architecture as a brand.

The paper discusses the background of Bhutan and its vernacular architecture. The literature study discusses the various research on the subject of vernacular architecture as a brand, building regulations and policy framework by the Bhutan government and the tourism policy of Bhutan. This study includes documentation of architectural styles from different settlements in Bhutan, including Haa, Thimphu, Paro, and Punakha. The different typologies, nomenclature and their building elements have been summarized based on the field studies. The paper includes a discussion on the initiatives by the government to promote vernacular architecture as a brand. This case study has been studied as a paradigm and its inherent paradox-of over tourism and gradual erosion of unique identity.

Bhutan: Geographical Location & Climate

Bhutan has an area of 38,394 Sq.Km and is located in the South central part of Asia. It is situated to the south side of the Eastern Himalayas and shares borders with Tibet Autonomous Region (TAR) to its North, and India towards the East, South and the West. It lies within a latitude of 27.5142° N and Longitude of 90.4336° E. (gps-coordinates.org, 2023). The country is situated in the southern Himalayan steep slopes intersected by river networks resulting into formations of deep valleys towards the Indian Territory.

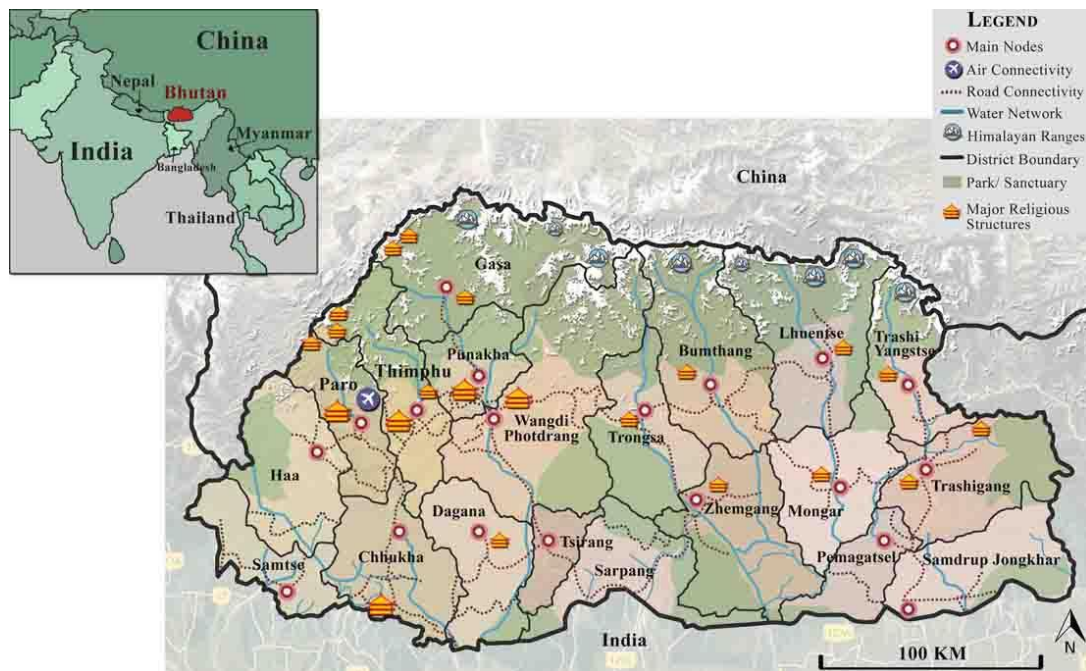


Fig.1: Base-Map showing location, Neighboring Countries

Source for Boundary Overlay: United Nations, 2021

Source for Geography Overlay: nationsonline.org, 2023

Edited by Author

As shown in the Fig.1, Bhutan is surrounded by Tibet Autonomous Region, Nepal, Myanmar & the Indian States of Arunachal Pradesh, Sikkim, Assam and West Bengal, all of which have various cultural and architectural influences. Geographically, Bhutan is divided into three regions: Great Himalayas, Lesser Himalayas and Southern Foothills. Due to the

varied geography ranging from steep mountains to valleys and Himalayan foothills, Bhutan experiences a subtropical climate towards the South, a temperate climate in the highlands and a cold-arid type of climate in the Himalayan ranges. Climate of Western Bhutan is characterized largely by the heavy rains during the monsoon, hot humid summers and cool winters in Southern Bhutan; whereas, Eastern and Central Part of Bhutan has temperate type of climate with cool winters.

This unique geographical location of Bhutan, and its existing geographical and diverse climatic conditions play major roles in shaping the architectural characteristics of the country. Schuelka has observed that to a considerable extent, the distinctive topography of Bhutan has kept it isolated from global movements, in both positive and negative ways (Schuelka, 2012).

History and Development of Traditional Bhutanese Architecture

Historical accounts mention Bhutan's history since 747 CE, with the arrival of the revered Tibetan spiritual mentor Guru Padma Sambhava known as Guru Rimpoche, who brought Buddhism to this country (pbs.org).

Bhutan's traditional architecture has its roots in the 17th century when the Bhutanese King, Zhabdrung Ngawang Namgyal, played a significant role in uniting the country and establishing its unique cultural identity. This was also the time when the Bhutanese began to build their distinctive fortresses, known as Dzongs (Amundsen, 2001).

Later, in the 19th Century, hereditary monarchy was formed with Wangchuck chosen as a king of Bhutan (Leigh, 2022). Bhutan's traditional architecture is a mix of Tibetan, Indian, and native Bhutanese design elements. It is an essential part of Bhutanese culture and heritage and reflects the country's history and cultural beliefs. The strong historical, cultural and religious connections to the neighboring countries has given rise to a unique architectural character, distinctive to Bhutan: 'The Bhutanese architecture'.

Review of Literature

Bhutan has emphasized on branding its image for residents and visitors, especially after the pandemic in 2020-21. It has maintained a consistent policy of 'High-Value-Low-Volume tourism' which has allowed it to preserve the cultural and architectural uniqueness in its Himalayan landscape (unwto.org, 2023). In 2022, the country launched its unique identity as a brand owing to its distinctive culture, sacred spaces, wilderness, architecture and peace. Tourism council of Bhutan has noted that Promote brand Bhutan, as a policy has increased revenues generated by tourism, and provide livelihood to the local community (Tourism council of Bhutan, 2021). The support to vernacular building styles is embedded in major departmental policies such as- Ministry of education, Royal Government of Bhutan, June 2022, wherein the education policy statements mandate all institutions to promote national language Dzonkha and national dress of the country. All school infrastructure must be eco-friendly and follow Bhutanese style of Architecture (The National Education Policy, 2022). Under the Department of Human settlements, Ministry of works and Human settlements, Royal Government of Bhutan, the Bhutan Building Regulations 2018, the visual characteristics of the streets are maintained in their vernacular style by means of architectural controls documented in Bhutanese Architecture Guidelines (Bhutan Building Regulations, 2018). Bhutanese Architecture Guidelines provide a reference document to conserve, repair and develop the vernacular architectural methods of construction.

Elahi (2022) has observed that vernacular architecture has a significant influence towards city branding and has a domino effect on cultural values of a city. Preserving and developing natural landscape, unique local design, will have a significant effect on the image of the city and its branding. A design, symbol, or a name can be associated with a brand that identifies a product or a place. On similar lines, imageability of a city owing to the buildings and the impressions it gives to people can also be identified as branding of architecture. Architecture, building facades, community spaces, natural and manmade landscape, traditional festivals and activities and people all contribute towards building a brand identity of a city

(Lukić 2022). Branding of a city comes with the integration of its identity with the region or country which it belongs to (Wu & Chang, 2020). One of the elements to promote branding is the visual-scape of the city (Mörling & Strannegård, 2004). Wu et al. have noted that in the past few years, values of city culture have become important elements of city development, and the formation of city culture through “cultural Regeneration” has become a kernel element of City Branding (Wu & Chang, 2020).

Bhardwaj, et al have noted that vernacular architecture primarily applies to the indigenous architecture, typically characterized by features and decorative elements that are predominantly local, yet not specifically planned or created by a professional architects (Bhardwaj & Garg, 2016).

Visual scape of a city includes façades of buildings, arts and crafts, natural landscape elements like trees and water bodies etc. These elements that exist in its native form give them an identity which is unique to a place due to its geographic features, demographic spread, and cultural practices etc. All these constitute tangible and intangible cultural traditions which reflect in the built heritage of countries. Ferreira1 et al. have observed that traditional built heritage forms a paradigm of sustainability as they combine the preservation of cultural values and collective identities together with landscape integration (Ferreira, 2023). Ardhyanto, et al. have concluded that vernacular architecture serves as a historical testament, encapsulating the values of a community and reflecting their evolution and agreements over time (Ardhyanto et al., 2023).

Misra (2016) has observed that with a regulatory system in place, like which is available in Bhutan can also be used in South Asia: India, Pakistan and Sri Lanka as all have inherited legislative and judicial systems which in theory can protect the vernacular styles (Misra, 2016).

According to the world bank report on improving resilience in Seismic risk in Bhutan headed by Dechen Tsering - Workshops, training sessions, the development of equipment and systems, along with publications, represent fundamental prerequisites that can be implemented across various sectors like health and cultural heritage within the nation, as well as in other developing countries facing technical constraints. (WorldBank, 2018). Prominent Bhutanese architects like Rebecca Gurung support this approach of protecting vernacular traditions for a sustainable future (SouthAsianMonitor, 2023).

Research Methodology

This paper has adopted a case Study approach to understand the uniqueness of the vernacular architectural style of Bhutan (Groat, 2013). The study has adopted the following structure.

1. Identification of Study Context: Karahan, et al. have conducted study of typical architecture of Turkey based on typological analysis across six cities (Karahan, 2020).
2. They studied cases based on construction techniques, their construction date; materials used. A similar approach was undertaken for this study. Following cities were selected.

Table 1: Vernacular buildings studied in Thimpu, Punakha, Paro & Haa: Cities in Bhutan
Source: Author

1	<p>City Name: Punakha Location: West central Bhutan at 5000 ft above sea level Site Context: Was once the capital of Bhutan and now the winter capital of head of clergymen. The Royal coronations and marriages take place in Punakha like King Jigme Khesar Namgyal Wangchuk coronation and marriage. Notable buildings: Khamsum Yulley Namgyal Choeten.</p>
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2	City: Thimphu Location: West central Bhutan on the banks of Raidak river at 7000 ft above sea level Site context: National capital of Bhutan and reflects the culture and traditions. The famous mask dance called as Cham dances are performed during Tsechu festival in the courtyards of Tashichho Dzong. Notable buildings: Tashichho Dzong, Simtokha Dzong.
3	City Name: Paro Location: Situated in Western Bhutan Site Context: It was cultural, commercial and political centre. Notable buildings: Rinpung Dzong, Private residence.
4	City Name: Haa Location: West of Bhutan bordering Sikkim Site Context: The summer capital celebrating the culture and traditions of Bhutan Nomadic tribes. Notable buildings: Karapo Lakhang, Chimmi Lakhang, Haa Dzong (formerly known as Wangchuk Lo Dzong)

3. Vernacular elements in the following typologies were studied. The buildings corresponding to each typology have also been listed in the table no 2

Table 2: Documentation of Distinctive Building Typologies in Bhutanese architecture

Source: Author

	Building Typology	Building Name
1	Temples (Lhakhang & Zangdok Pelri) & Monastery (Goenpa)- Vernacular structures	(i) Karapo Lhakhang, Haa (ii) Chimmi Lhakhang, Haa (iii) Gangteng Monastery, Punakha
2	Stupas (Choetan) -Vernacular structures	(i) Khamsum Yulley Namgyal Choeten, Punakha
3	Fortresses (Dzongs) -Vernacular structures	(i) Tashichho Dzong, Thimphu (ii) Rinpung Dzong, Paro (iii) Dzong, Haa (iv) Wangchuk Lo Dzong, Haa (v) Simtokha Dzong, Thimphu
4	Residence (Yue Chim) - Vernacular structures	Private Residence, Thimphu
5	Commercial Hotel -Modern Building with Vernacular Elements	Tashi Taj Hotel, Thimphu
6	Public Building -Modern Building with Vernacular Elements	Post Office, Thimphu
7	Traffic signal booth -Modern structure with Vernacular Elements	Main traffic square, Thimphu
8	Institutional building -Modern Building with Vernacular Elements	Textile academy, Thimphu
9	Commercial market place - Modern Building with Vernacular Elements	Handicraft Market, Thimphu
10	Public square -Modern Building with Vernacular Elements	Clock tower, Thimphu
11	Street -Scape	Norzimlam Main street, Thimphu

Outcomes are documented in the form of architectural drawings & maps showing the location & geographical analysis, identification of primary and secondary elements on exterior facade, mapping the street-scape highlighting the uniform architectural elements.

4. Field Survey (unstructured interviews) to understand cultural and intangible vernacular practices. The above selected settlements in Bhutan, were visited for documentation of architectural styles, field-based notes on vernacular terminology related to building units, materials and elements of culture around buildings, with photographs. Based on the observational study, the significant features of architecture across typologies of built form have been characterized in the paper. The same have been corroborated with the literature available in Bhutanese Architecture Guidelines (Bhutanese Architectural Guidelines, 2014).
5. The study of architectural elements was undertaken by visual mapping and photographic survey carried out by author during site visits to the selected settlements in four cities. Study and review of Policy documents that protect and promote vernacular architecture as a Brand: The study reviews the policy documents across the following departments - Human settlements, Urban development & Housing, Tourism to understand how the Royal government of Bhutan has modeled the collaborative approach with organizations like UNESCO, World Bank and NGOs to promote the vernacular architecture practices for contemporary buildings. Theoretical outcomes are recorded with the help of analytical tools such as flow chart of government initiatives, Comparative bar chart of income revenue vs tourism statistics.
6. Survey to understand the outcomes of the initiative to brand Vernacular Architecture for tourism: The author conducted a visual survey, using photographic records and field notes of unstructured interviews with approximately 60 people for the purpose of assessing the benefits of branding initiatives. Approximately 35 responded The field notes were summarized into general findings and have been discussed in the later part of the paper- benefits of branding. Visit to architecture and Tourism department in Government of Bhutan, Interviews with handicraft shop-owners & local architects played crucial role in shaping the conclusions. For this part of study, the major limitation was- language, willingness of people to come forward and reply, understanding of questions was arbitrary, for the reason- the author preferred to take down notes from interaction and summaries this later.
7. The paper findings discuss how the successful example of promoting vernacular architecture from Bhutan can be used as a model or strategy for conserving cultural and built heritage as a brand and can be relevant in South Asian context.

The paper also discusses the paradox of how the balance between tourism and the unique identity of a place must be strategically placed to protect the distinctiveness of built environments, which otherwise depends significantly on tourism for sustenance. This balance has been embedded in the 'high value low volume' approach towards tourism. This aspect is particularly important in the context of India, where traditional tourist sites such as Shimla, Nainital are facing critical situations due to over tourism.

Findings

Bhutanese Architecture

Origin of Bhutanese architecture can be traced back to the 7th century when Buddhism was naturalized in Bhutan by Tibetan spiritual mentor Guru Padma Sambhava. As a consequence, traditional architecture of Bhutan is heavily influenced by Tibetan Buddhism and is characterized by the use of stones, wood, and clay as building materials. With its distinct style, traditional materials, incorporation of Buddhist elements and the country's natural environment, Bhutanese architecture has helped to create a strong cultural identity for the country (Dujardin, 2000). Bhutanese architecture has significant cultural, religious, and historical importance. Its architecture also embodies the country's spiritual beliefs and values, with religious symbols and motifs incorporated into the design of buildings which makes it a unique architectural style. Dujardin has noted that architectural uniformity and coherence among dzongs and traditional villages has been continuously present throughout Bhutan's history (Dujardin, 2000).

Traditional Bhutanese architecture has played a vital role in branding the country as a unique and culturally rich destination.



Fig.2: Bhutanese Architecture

Map Boundary Overlay Source: nationsonline.org, 2023

Images captured by the Author during the Site Visit

Traditional Architectural Typology of Bhutan

It is observed that traditional Bhutanese buildings are characterized by their ornate details embodied in bright colors and intricate carvings. The buildings are typically multi-tiered and have sloping gable roofs and balconies. The doors and windows are intricately carved and feature intricate designs that reflect the country's cultural and spiritual heritage. Bhutanese Architectural Guidelines (Ministry of Works and Human Settlement 2014), identifies four types of traditional Bhutanese roof forms namely- Jabzhi roof, Jamthok roof, Drangim roof, and Chenkhep roof. Jabzhi roofs are either single layered or multi layered roofs, which are square hipped having four distinctive corners (Chettri et al., 2022).

Based on their functions and designs, traditional architecture of Bhutan can be divided into two main categories: residential and religious. This is shown in Figure 3

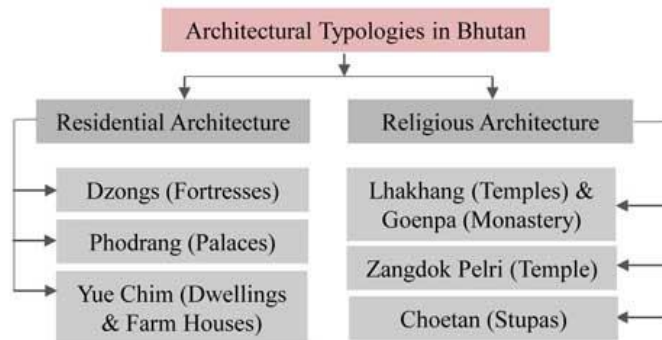


Fig.3: A Typology of Architecture in Bhutan

Source: author

Residential Architectural Types of Bhutan

According to the Bhutanese architecture guidelines, residential architecture is exhibited in various fortresses, palaces, dwellings and farmhouses in Bhutan. Among them, the most iconic structures of Bhutanese architecture is the Dzong. These are the fortresses that serve as administrative and religious centers, and are some of the largest and most impressive structures in the country. Dzongs are typically multi-storied structures planned as Fortresses and comprises of spaces like courtyard, monk's residences, and government offices. Elevation of the dzongs is dominated by the massive walls with carving on the upper part supported by steep roofs that are made of wooden shingles. They are designed to be durable and resistant to the harsh climate and natural disasters. Walls are painted in white whereas, the windows are coloured in red which gets highlighted due to the pristine green natural landscapes in the backdrop. Windows designed with the horizontal band have intricate designs and carvings that depict religious and cultural themes.

As shown in the figure 4, the striking visual features such as load bearing stone walls with massive height, windows exhibiting intricate Bhutanese motifs, levelled steep roofs give a definition to the Bhutan's architectural character.

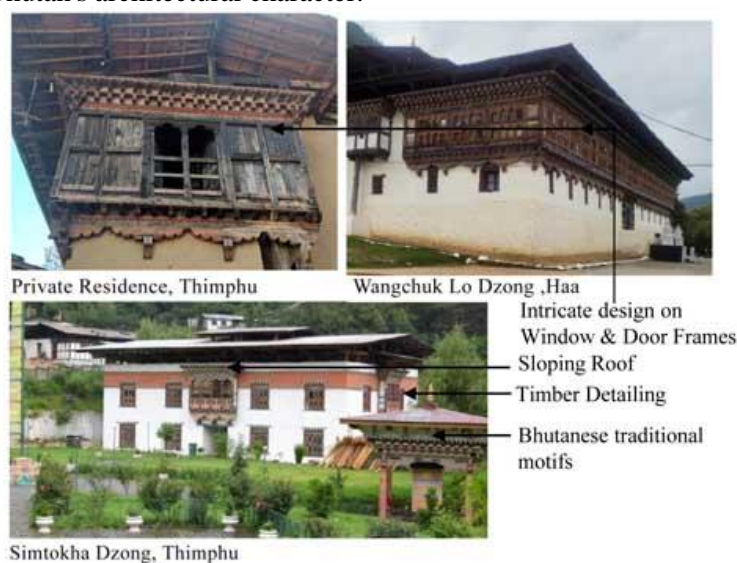


Fig.4: Residential Architecture of Bhutan
Source: Author

The architectural style of Phodrang (Palaces) exhibit the same character as that of Dzongs. Layout of Phodrang consists of the main temple (Utse) and chambers for the Royal family designed around a central courtyard. The elevation comprises of a load-bearing stone wall and decorative elements similar to the Dzongs.

Yue Chim (Private dwellings and Farmhouse) are the residential structures with G+3 height usually built in clusters. The space allocation within the house exhibits vertical zoning of spaces based on the utility pattern of the residents, such as living, bedroom, storage, spiritual rituals used by the family, and the guests etc. The typical construction of Yue Chim features an architectural style identical to that of Dzongs, displaying similar construction methods, use of colors, steeply sloped roofs, and the inclusion of intricate designs around the openings, all within a courtyard-oriented layout.

Religious Architecture of Bhutan

Religious architecture in Bhutan is characterized by its stunning designs and intricate details. Bhutan is a predominantly Buddhist country, and its religious architecture reflects its religious beliefs and cultural heritage. As per Bhutanese architecture guidelines, Bhutanese architecture has various types of religious structures such as, Lhakhang (Temples), Goenpa

(Monasteries), Choetan (Stupas), Zangdok Pelri (Special type of a Temple) (Bhutanese Architectural Guidelines, 2014)

Similar to residential architecture, religious structures also have large windows adorned with intricate designs and carvings that depict religious and cultural themes. The walls and ceilings are adorned with intricate carvings and paintings that depict religious themes.

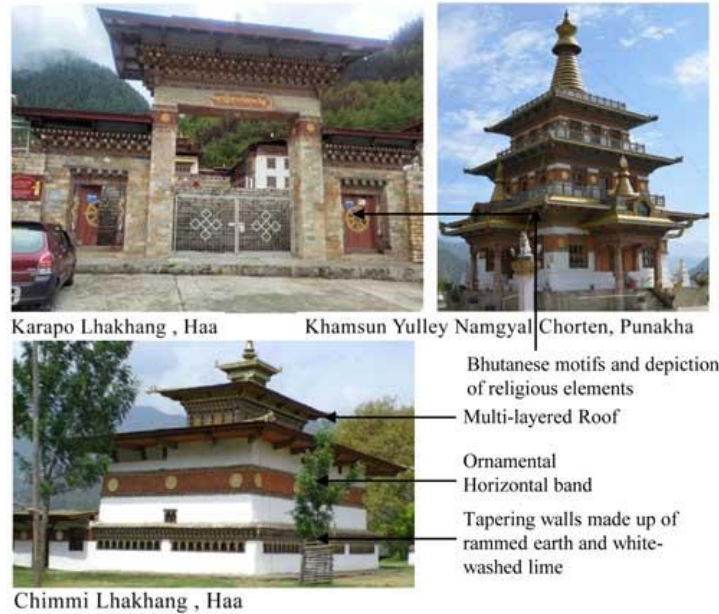


Fig.5: Religious Architecture of Bhutan

Source: Author

Lhakhangs are some of the most notable structures of Bhutanese architecture. According to the Architectural Guidelines of Bhutan, there are around 2000 Lhakhangs and Goenpas in Bhutan. Typical temple complexes are usually square or rectangular and their residential wings for the monks are arranged around a temple. Temples are usually large, multi-tiered structures with levelled sloping roofs. Architecture of the fourth type of religious buildings – Zangdok Pelri consists of a mixture of a temple and stupas. This structure has ground, middle and upper levels which also work as the celestial palace of the Gurus (religious mentors).

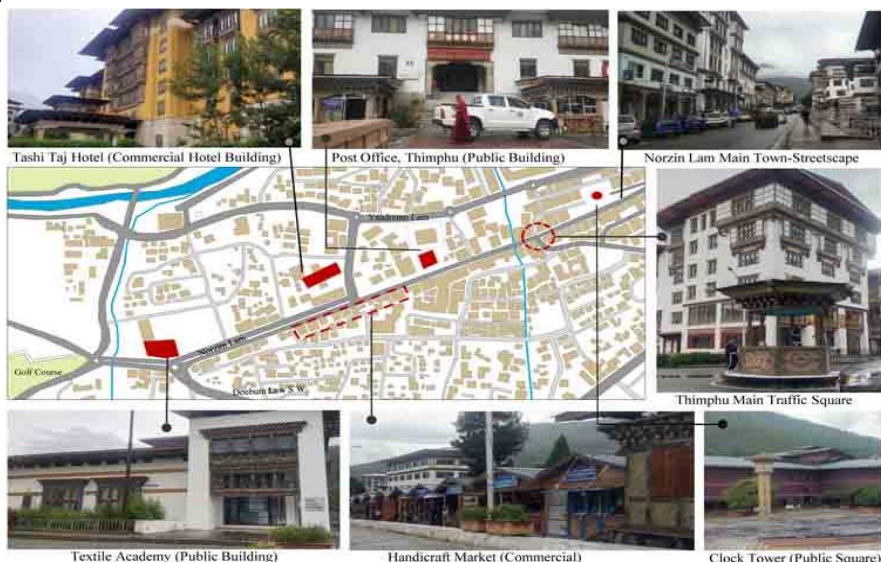


Fig. 6: Visual Characteristic of Norzim Lam Street, Thimphu

Source: Author

Figure 6 shows the modern age public, residential and commercial buildings located on the main market street of Thimphu. These modern structures also employ similar architectural language to that of heritage buildings.

Elements of Bhutanese Architecture

Architecture of Bhutan exhibits the amalgamation of strong culture and its interpretation into traditional architectural styles. They show the use of symmetry and balance into planning of building layouts as well on the exterior facades. This is reflected in the layouts of buildings, which are often square or rectangular in shape, with a central courtyard surrounded by rooms. The buildings are also typically positioned to maximize the views of the surrounding landscape. The large windows and balconies help to bring in maximum light and ventilation into the interior spaces. Another notable aspect of Bhutanese architecture is its incorporation of Buddhist elements. Many historical building facades feature intricate carvings and paintings on the exterior walls that depict Buddhist deities and symbols, reinforcing the country's connection to its spiritual heritage.

Building facades are the most significant exterior elements that help in creating interactions between structures and the surroundings. In the case of Bhutan, architecture is strongly influenced by its traditional, socio-cultural values which are depicted on the facades as well as the interiors of the buildings. Elements of facades are emphasized so as to focus on the relations between the facades and their implications for city imageability.

It is observed that all the religious and residential structures have certain visual elements in common which are predominantly visible on the historic building facades. These structural and decorative elements produce not only a similar architectural language but also affect the visual character of the building facades. In fact, the regional cultural heritage of Bhutan has a strong influence on the basic construction elements like columns, capitals, roofs and openings in the built forms of Bhutanese structures which is seen in the detailing of these primary elements.

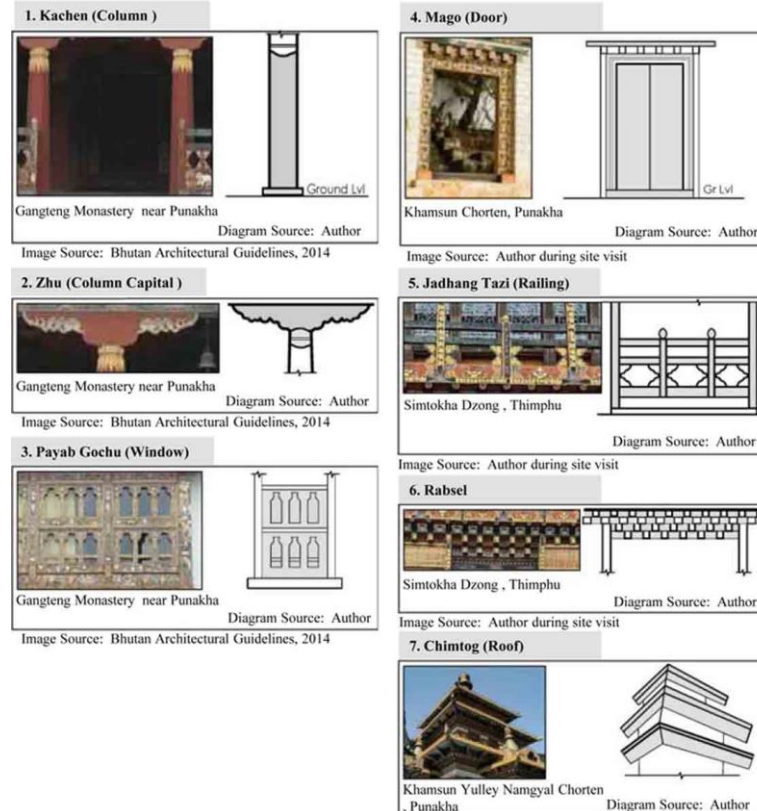


Fig. 7: Primary Elements of Bhutanese Architecture
Image Source: Bhutan Architectural Guidelines

A facade of a Bhutanese building is emphasized due to prominent primary elements such as Kachen (Column), Zhu (Capital), Jadhang Tazi (Railing), Mago (Door), Payab Gochu (Window), Rasbel & Chimtog (Roof) as shown in the figure 7. As mentioned in the Bhutan architecture guidelines, 2014 the elements of Bhutanese traditional architectural enhances its values and exhibits the hierarchy of the design.

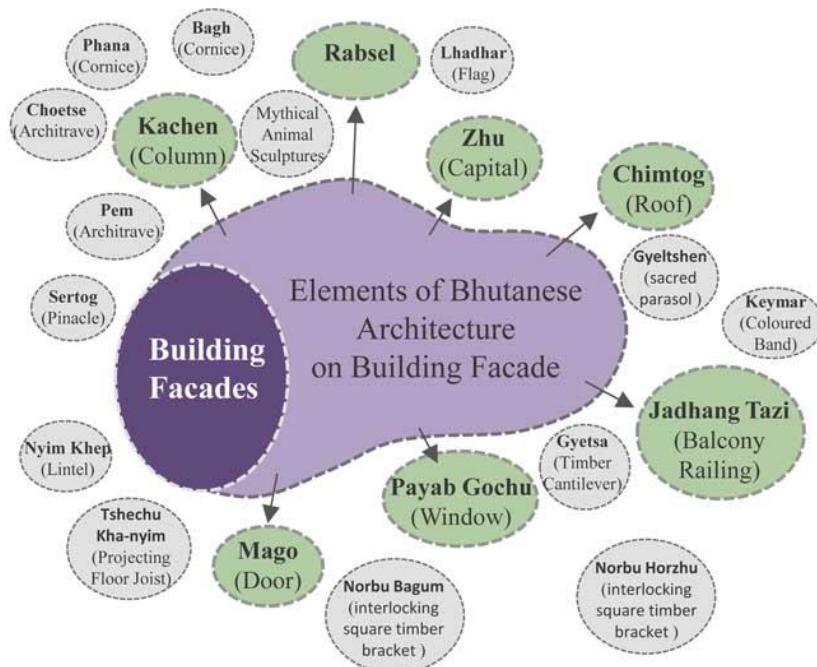


Fig. 8: Elements of Bhutanese Architecture on facade

Source: Author

Kachen (Column)

A Kachen (Column) is positioned as the major structural element for the Dzongs and other traditional structures. Various heights and shapes of columns such as, octagonal, square, and circular are observed in the traditional buildings. Height of a typical column varies from 2.5m to 2.8m depending on the purpose and height of the structure. Even though the sizes and plans of kachens are diverse, the language of ornamentation and elements shown on the columns are similar. A typical column comprises of a head, prayer beads, a column shoulder and the main pillar with the decoration of Buddhist motifs and traditional design using bright colors.

Zhu (Capital)

Kachen and Zhu (i.e. Column and its capital) are often constructed together as a single component and are placed mainly on the exterior of palaces, Forts, Dzongs and Yue Chim. Zhu is 1-1.2 m high bow shaped decorative feature placed on the top of the timber column. This also works as a structural member which transfers the beam load to the vertical column. All the capitals are designed in a highly decorative manner which exhibits the intricacy of the carvings and the paintings on the column. These Zhu are further categorized based on their intricacy of the design of carvings and paintings. The carvings depict hierarchy and harmony of Nature, people and the animals.

Payab Gochu (Window)

Payab Gochu is an exterior element which is entrenched within the facade of a building. Windows are highlighted with intricate carvings, multiple layers of cornices, decorative lintels and intricate designs painted in bright colors. Horizontal Lintels with typical Bhutanese secondary design elements such as Bogh, Choetse, Horzu are the most attractive features in the

traditional window surrounded by a timber frame. All the windows in residential and religious architecture follow similar patterns which give a sense of uniformity to the exterior facade.

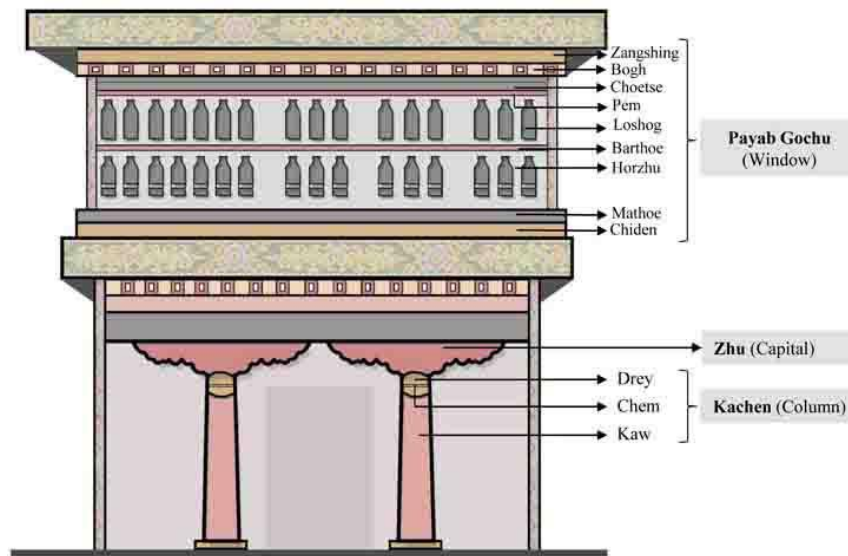


Fig. 9: Typical Bhutanese Facade showing Primary Elements- Kachen, Zhu and Payab Gochu
Source: Author

Mago (Door)

The main entrance door present in Dzongs, palaces, Lhakhangs and private houses is a notable feature in Bhutanese Architecture due to its scale, elaborate carvings, decorative multi-layered lintel with motifs of lion, eagle and the small statues of the deities. Similar to the windows, Mago also has secondary elements such as Bogh and Pem. The dimensions of the doors are approximately 1 x 2m. In order to maintain the homogeneity of design, scale and the proportion of primary and secondary elements are maintained uniform in Mago and Payab Gochu (window).

Jadhang Tazi (Balcony Railing)

Balcony Railings are developed as a unique design feature on the facades as almost all the residential structures in Bhutan are G+1, as per the building regulations. Due to the intricate carvings, paintings, and the use of vibrant colors, a Jadhang Tazi plays an important part in constructing a traditional architectural language in the residential facades. Typical railing heights vary from 1-1.2 m and the designs have integrated secondary elements such as Norbu Tog, Newel post, and Bases designed to match with the traditional Bhutanese architectural style. Jadhang Tazi are placed on the exterior part of the facade which includes the Attic, the Corridors and the Balconies etc.

Rabsel

Rabsel is the most highlighting and significant element on the facades of traditional Bhutanese buildings. Indeed, it is a series of horizontal and vertical decorative timber frames projecting out and positioned above the lintel emphasizing the facades of a building. There are various types of Rabsel categorized based on the series of secondary components on Rabsel arranged in sequential manner such as Bogh, Phana, Pem, Budhen, and Choetse etc.

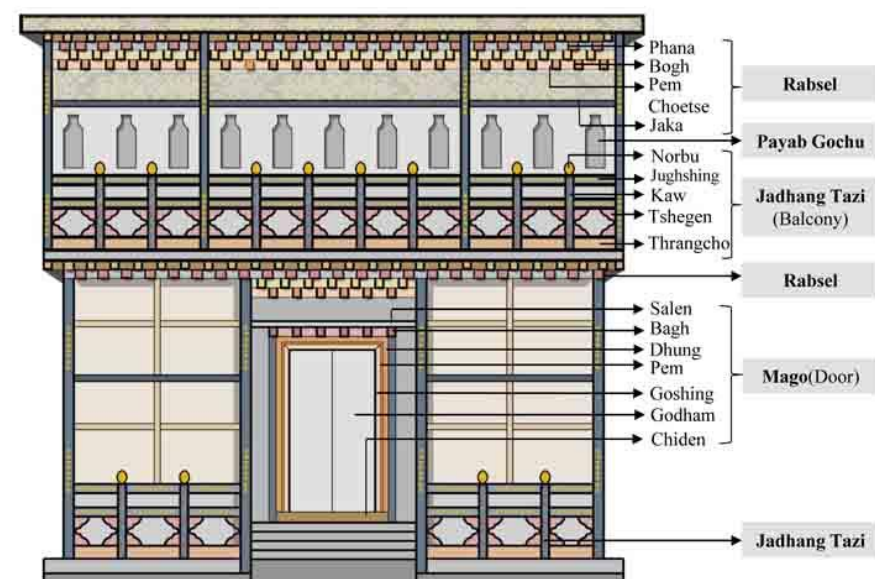


Fig. 10: Typical Bhutanese Facade and Primary Elements- Mago, Jadhang Tazi and Rabsel
Source: Author

Chimtog (Roof)

The steep sloping roofs responding to the local climatic conditions play an important part in the characterization of Bhutanese facades. A typical Bhutanese roof is constructed in multiple layers appearing to float above the building due to the presence of timber trusses often called the 'Flying Roof'. All types of buildings have a similar roofing style and are further categorized as Jabzi, Jamthok, Drangim and Chenkhop based on the number of layers, heights and overall appearances. For example, a Jabzi roof is a pagoda style square hipped roof placed painted in yellow to represent the high status of a building. Other roofs are constructed with timber trusses, rafters and shingle tiles with gentle slopes of around 13° .

As shown in the figures 8 & 9, the secondary elements on the facades have evolved as a reflection of intangible cultural heritage into mythology. These secondary elements include, Bogh, Phana, Pem, Choetse, Jaka, Norbu, Joghsing, Keymar, and Sertog etc. and motifs of sculptures of mythical animals. All the primary and secondary elements maintain proportions which produces the uniform architectural language in all the structures.

Vernacular Construction Technologies and Materials in Bhutanese Architecture

Bhutanese architecture is distinguished by its reliance on indigenous materials, including stone, timber, and clay, highlighting the nation's strong bond with its natural environment. These materials are used to build distinctive architectural features, such as Rabsel, Balcony Railings, elaborate roof designs, and colourful external paintings, which are meant to symbolize the country's spiritual heritage. The walls of the traditional Bhutanese buildings are usually load-bearing with gentle tapering slopes made of rammed earth, stone and whitewashed in lime. The use of large, wooden beams and wooden shingles as roofing materials not only protect the buildings from earthquakes but also helps keeping the interiors cool in the summer and warm in the winter.

Institutional Support for Development of Bhutanese Architecture as a Brand

In recent years, Architecture in Bhutan is seen as a symbol of Bhutan's unique cultural heritage and a testament to the country's commitment to preserving its traditions. The promotion of places with traditional buildings for tourists, sourcing local materials for repairs and renovations, institutionalizing and standardizing the local architectural designs have espoused the development of Bhutanese Architecture as a unique brand. However, the sustenance of this

brand has been possible only due to institutional support. The Govt of Bhutan, through its various institutions, conducts regular assessments of Bhutan's historic buildings and structures and implements restoration and preservation projects to ensure their continued existence (Jest, 1992).

Often research and documentation activities are carried out to continually understand Bhutan's architectural heritage and identify ways to preserve it (Jest, 1992). Research and documentation activities are carried out to continually understand Bhutan's architectural heritage and identify ways to preserve it (Jest, 1992). Often events and activities are also organized to raise awareness among the Bhutanese citizens and visitors about the importance of preserving the country's architectural heritage (Bhutan, 2021). Defining the building code, Traditional Architecture guidelines, policies to regulate tourism, educating preservation to the next generation are some of the efforts by the Government and institutions in Bhutan to maintain the distinct traditional architecture and thereby promote it as a brand.

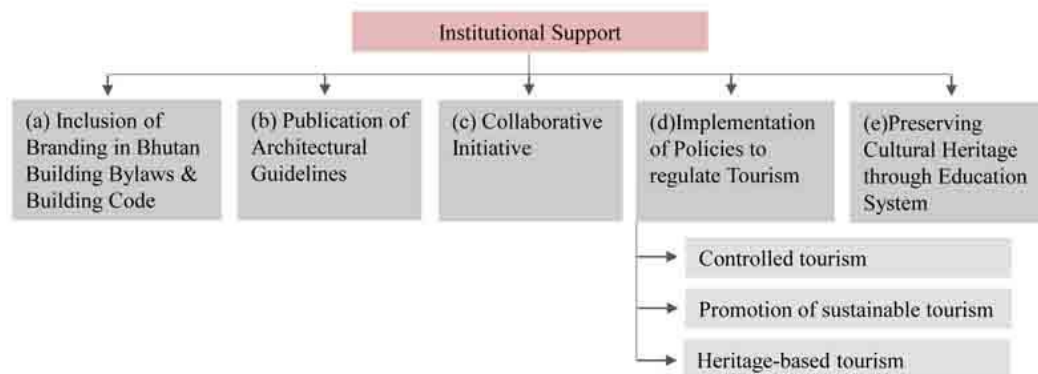


Fig.11: Institutional Support

Source: Author

The findings on strategies adopted by Royal Government of Bhutan for promoting Bhutanese architecture as a brand are summarized under- Bhutan building Bye laws & Codes, Traditional architectural guidelines, Collaborative Initiatives, Implementation of policies to regulate Tourism and Preserving Cultural Heritage through Education System.

Building Bylaws & Building Codes of Bhutan

The Bhutan Building regulations, 2018 ensures that new buildings in Bhutan are built in a way that is consistent with the country's traditional architectural style. This means that new buildings must be built using traditional materials, techniques, and designs that are in line with Bhutan's cultural heritage. All buildings outer façade and architecture features have to confirm with Guidelines on traditional architecture (Bhutan Building Rules, 2002). This helps to maintain the distinctive character of Bhutanese architecture and prevent modern building styles from erasing the country's cultural identity. Additionally, the building code also requires new buildings to be designed and constructed in ways that minimize their impact on the environment. This helps to ensure that new developments do not harm the natural beauty of Bhutan, which is also an important aspect of the country's cultural heritage. Overall, the building code in Bhutan serves as an important tool for conserving the country's architectural heritage and ensuring that it remains a prominent part of Bhutan's cultural identity for future generations.

Traditional Architectural Guidelines

In order to preserve Bhutan's architectural heritage, the Ministry of Works and Human Settlements introduced Bhutanese Architectural Guidelines in 2014. Promoting cultural growth and diversity, traditional architecture and methods of construction is the main aim of this published document as the former forms an integral part of Bhutanese built-scape. These

guidelines delineate the key components of Bhutanese traditional architecture and provide essential principles to guide constructions for preservation and restoration of vernacular buildings, and contemporary construction projects, as stated by Minister Mr. Dorji Choden, Ministry of Works and Human Settlement (Bhutanese Architectural Guidelines, 2014).

Collaborative Initiatives

The preservation and restoration of historical structures play a vital role in safeguarding cultural heritage (Jest, 1992). In alignment with Bhutan's commitment to "Gross Domestic Happiness" with culture preservation as one of its four key agendas, the Bhutan Foundation actively conducts regular assessments of Bhutan's historic buildings and monuments. It institutes restoration and preservation projects to ensure their continued existence by partnering with local, national and international partners which include local government officials, monasteries, Tsao & McKown Architects, the World Monuments Fund, and the U.S. Ambassadors Fund for Cultural Preservation (Foundation, 2023). The foundation also emphasizes the importance of training and capacity building for Bhutanese craftsmen and builders to keep traditional building techniques alive and promote their integration into new construction projects.

Since its inception in 1988, Division of Conservation of Heritage Sites (DCHS) under the Department of Culture, Ministry of Home and Cultural Affairs has envisioned involving religious congregations and monks, who serve as custodians of heritage sites, in major renovation efforts and policy discussions. DCHS collaborates closely with international agencies to adopt best practices and technical expertise, secure support for direct investments, and enhance capacity development. DCHS has initiated a development strategy for heritage site conservation in partnership with UNESCO World Heritage Centre.

Cultural heritage is not just a local or national concern, but a global one. Protecting it requires the cooperation and support of the international community (Garcia, 2019). In an effort to safeguard Bhutan's distinctive cultural heritage, the Bhutanese government has collaborated with UNESCO, ICOMOS (International Council on Monuments and Sites), ICCROM (International Centre for the Study of the Preservation and Restoration of Cultural Property), as well as non-governmental organizations. Their collective mission is to manage and protect the nation's cultural legacy, including visible elements such as monuments, sites, and overall development.

To ensure the preservation of these cultural treasures, the Bhutanese government has enacted legislation based on the recommendations provided in technical reports from UNESCO. The Cultural Council has further established comprehensive guidelines in the form of laws and a strategy to enforce these regulations. Within this framework, Department of Culture, operating under Ministry of Home and Cultural Affairs (MOHCA), collaborates closely with local governments to prioritize the conservation of both tangible and intangible aspects of Bhutan's rich cultural heritage

Implementation of Policies to regulate Tourism

Tourism plays an important role in showcasing countries heritage and on the other hand cultural heritage promotes tourism (Ngoz, 2016). Visitors to Bhutan can see the country's traditional architectural styles, as many buildings, including homes, monasteries, and public buildings, are constructed using traditional techniques and materials. The government regulates tourism in Bhutan to minimize its impact on the cultural heritage of the country. Impact of tourism can be both beneficial and harmful on a country's cultural heritage and architectural heritage (Okech, 2010). However, in Bhutan, the government has implemented policies to regulate tourism in ways that minimize its negative impacts and maximize its positive effects on the country's architectural heritage (Nyaupane, 2010). The government of Bhutan regulates the number of tourists visiting the country and ensures that their impact on the environment and cultural heritage is minimized (Nyaupane & Timothy, 2010). The main objective of tourism

policy is to promote Bhutan as a Brand and to promote sustainable and inclusive tourism guided by the principle of high value - low volume tourism (Bhutan Tourism Policy, 2021)

Figure 11 exhibits the steady rise in number of international tourists followed by gradual increase in Annual revenue. By regulating High value, low volume tourism in this way, the government of Bhutan is able to conserve the country's architectural heritage and ensure that it remains a key aspect of Bhutan's cultural identity as a brand. Heritage tourism promotes awareness around Bhutan's cultural and architectural heritage, providing visitors with the opportunity to learn about and experience this heritage first-hand (Hmood et al., 2018). Sustainable tourism development is essential to protect and preserve the local environment and culture of a destination. (Yfantidou, 2017) The government encourages green, sustainable, and inclusive tourism practices, such as eco-friendly accommodations and responsible travel, to mitigate the adverse impacts of tourism on the country's architectural heritage by setting agenda and direction through key reform measures and institutional strengthening.

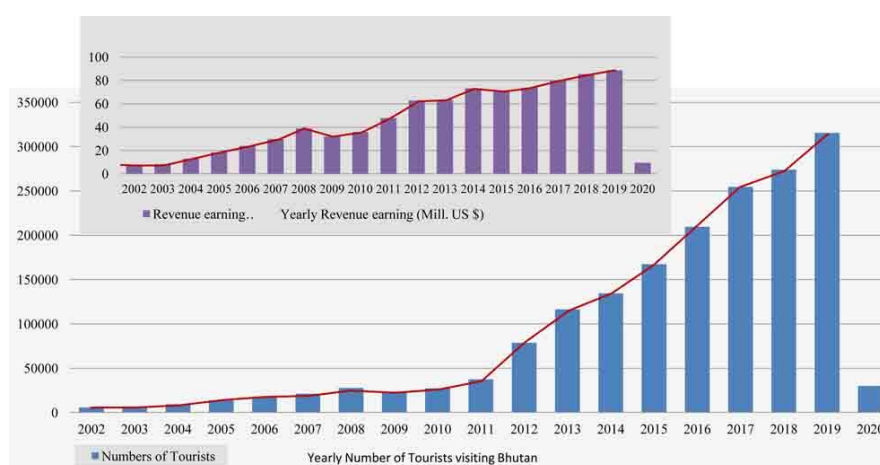


Fig. 12: Number of Tourists and Total revenue generated
Source: Data from Tourism Department, Govt. of Bhutan)

Preserving Cultural Heritage through Education System

According to Thinley (2020), culture and education contribute strongly to societal growth. Indeed, the education system in Bhutan plays an important role in conserving heritage by educating the future generations about the significance of cultural heritage and the ways in which it should be preserved. The Bhutanese educational system is taking steps to combine modern education with Bhutanese culture by making culture a part of its policies, school curricula, and classroom teaching. This way, the teachers become the bridge between the past and the present, and they play an important role in ensuring the continuity of culture (Thinley, 2020).

In Bhutan, cultural heritage is safeguarded by integrating its values in education, like including the concept of cultural heritage in school curriculum, site visits to heritage buildings, special courses for school teachers and curators of museum, and courses for religious schools (shreda) of the central monk body and other religious bodies (Jest, 1992). The education policy of Bhutan aims to create a holistic education system that supports the principles underpinning the 'Gross National Happiness': the unique Bhutanese development index, by upholding the nation's cultural and heritage values. According to the Draft National Education policy of Bhutan 2022, all educational institutions must promote and educate the unique cultural and spiritual heritage values of the country. Undeniably, these education policies have helped Bhutan to maintain its unique architectural heritage and ensure that it remains an integral part of the country's cultural identity.

By incorporating cultural education and hands-on learning opportunities into the education system, Bhutan ensures that future generations understand and appreciate the

country's architectural heritage and are prepared with the necessary knowledge and skills to preserve it. This helps to ensure the continued preservation and conservation of Bhutan's architectural heritage for future generations. The education system helps to raise awareness among the Bhutanese citizens about the importance of preserving their architectural heritage, and the ways in which this heritage can be sustained. Students are given opportunities to participate in hands-on learning experiences, such as visiting historic sites, learning traditional building techniques, and working on preservation and restoration projects. Radio programs on cultural heritage, movies and videos on festivals, dance, and Bhutanese craft (Jest, 1992) are promoted by the government also helping in sustaining the architectural heritage.

Benefits of Branding

The study that focused on interactions with locals and tourists during field visit was undertaken (through snow-ball technique) and aimed to understand how the branding initiative has benefitted the people of Bhutan. Since there was a barrier if language, and technical character of questions- the interaction had to eventually been moved to unstructured interaction around the above issue. Typical responses included statements such as the following.

- (a) "The Natural Beauty"
- (b) "Gross National Happiness"
- (c) "Buddhist Heritage"
- (d) "Traditional Arts and Crafts"
- (e) "Different dresses of the locals" and
- (f) "Trek to Tigers Nest"
- (g) "Cultural richness in the country's unique architecture, including dzongs (fortresses) and monasteries adorned with intricate artwork,
- (h) Festivals, such as the Paro Tsechu, with vibrant mask dances and traditional ceremonies, providing a unique cultural experience.
- (i) Unique street looks specific to Bhutan. The country is Asian, but the look is different than other Asian Countries"
- (j) It was seen that most of the festivals were conducted at places of importance like Dzongs, which accentuated the traditional feel.

The findings from the interactions have been summarized as below.

(a) Unique Visuals for the City and the Country as a Brand

Traditional architecture designs are often distinct and unique to a particular region or culture, and it offers a glimpse into the local traditions and way of living. Architectural elements, decorative motifs, and craftsmanship that are art forms in themselves. Traditional architecture designs reflect the cultural and historical identity of a place and attracts tourists due to their authenticity, visual appeal, sense of place and educational opportunities. Traditional architecture often exhibits intricate craftsmanship, ornamental details, and harmonious proportions that are visually and aesthetically pleasing.

This architecture integrates harmoniously with the surrounding environment, taking into account the local climate, geography, and the cultural context. The buildings often blend seamlessly with the natural landscape, reflecting a deep connection between people and their environment giving it a sense and essence of place and association with the local community.

The traditional buildings also add to the 'brand Bhutan' and attract many tourists from across the world. According to the Director General of Bhutan's Department of tourism, Mr Dorji Dhradhul, 1,00,000 tourists are expected in 2023 and based on the YoY increase in the tourists, soon, the figure would hit the pre-covid numbers of 3,15,00 tourists annually. As per the Government of Bhutan, Department of tourism data, Tourism contributes to 5% of the country's GDP and after hydro power it was the highest foreign exchange earner.

(b) Educational and Learning Opportunities

Traditional architecture designs provide educational opportunities to learn about local building techniques, materials, and cultural practices. The use of local wood and materials enhances the aesthetic appeal of the buildings and helps to preserve the cultural heritage and identity of a place, creating a stronger connection between the community and their built environment. By preserving and maintaining traditional buildings, local building techniques, craftsmanship, and materials, skills are preserved. Preserving traditional architecture attracts tourists and creates economic opportunities for local artisans and craftsmen skilled in traditional building techniques. Restoration and preservation projects allow younger generations to learn traditional building techniques and gain practical experience under the guidance of experienced artisans. Traditional architecture is an integral part of a cultural identity. By preserving traditional buildings, communities maintain a connection to their past, reinforcing a sense of pride and identity, ensuring continued vitality and sustainability of local artisan skills.

(c) Ecological Impact

Prioritizing the use of local wood and materials in construction as in Bhutan, promotes sustainable practices, reduce carbon emissions, support local economies and minimize waste. It does not, like most countries do. This approach contributes to a more ecologically friendly and resilient built environment. By using local wood and materials, which have a lower carbon footprint, the overall carbon emissions associated with construction are reduced. Wood acts as a carbon sink, sequestering carbon dioxide from the atmosphere, while the production of cement and iron, used in modern buildings, releases a substantial amount of CO₂. Using local wood and materials also promotes sustainable material sourcing practices reducing the need for long-distance transportation. Moreover, sourcing materials locally supports the local economy and reduces the environmental impact of extraction in other regions.

Utilizing local wood encourages responsible forest management and conservation practices. Responsible forestry practices, such as selective logging and reforestation, can be implemented to ensure the sustainability of wood resources. Wood at the end of its life cycle can be recycled, repurposed, or left to decompose naturally, minimizing waste and environmental impact.

Wood, as a natural insulator, offers better thermal performance compared to iron and cement. This leads to energy savings and lower greenhouse gas emissions associated with maintaining indoor comfort by mechanized means.

The study above shows the strength of integrating long term development plans for urban areas, ecosystems, tourism and economy strategically with the cultural heritage. Important lessons can be learned from this example. Some recommendations have been proposed for the benefit of regions in South Asian context, based on this study.

Recommendations

This study finds that government's efforts in promoting the Vernacular heritage has beneficial impact on City branding. Following recommendations are made for the South Asian region to benefit from strategy of Branding Cultural Heritage for long term sustainable outcomes.

1. Promoting and supporting traditional architecture in a city can contribute to the preservation of cultural identity, enhance aesthetic appeal, and create a sense of continuity of culture. Along with strict regulations and conservation policies, tax breaks, grants and allied financial incentives for private property owners will accentuate good the public private partnership towards protection of significant buildings and neighborhood. The local government can earmark Contributions by the corporate world in any capacity for the sustenance of traditional architecture, as a part of Corporate Social Responsibility (CSR).

2. Formulating organizational structures- Architectural guidelines and zoning regulations should incorporate traditional design elements, Adaptive Reuse Programs and encourage new construction to be in harmony with the traditional architectural style of the area. There should be a veritable collaboration between Local Artisans & Craftspeople, architects, urban planners, and designers to create modern designs that integrate traditional architectural styles and materials. Training local craftsmen, alongside the creation of a suitable market, ensures the sustainable preservation of cultural heritage in the most natural and organic manner possible. The government or local governing body should Facilitate collaboration with international organizations and experts in traditional architecture to exchange ideas, knowledge, and best practices.
3. Promoting cultural education -Guided tours, lectures, workshops and public awareness campaigns will holistically educate and engage the associated community in preserving the historical and architectural significance of traditional buildings. By implementing these recommendations, a city can strike a balance between modernization and the preservation of its cultural and architectural heritage.
4. Balancing tourism - Bhutan's philosophy of low volume high value tourism is pivotal in maintaining responsible tourism practices & respect for cultural and heritage practices. Its fundamental approach towards forming its policies is incorporation of Gross National Happiness index. This approach reduces the negative impacts of tourism and can be replicated in other countries to conserve and preserve their cultural heritage. Aspect of sustainable development and environmental conservation can be used as a tool for City branding. Collaboration with international organizations not only help in conserving heritage and also provide platforms which give visibility of heritage buildings to the world
5. Countries like India, Nepal and Srilanka with rich cultural heritage can also replicate the process for heritage conservation and heritage branding. Such models can be replicated in parts of India such as Chettinadu area of Tamil Nadu, which has a distinctive vernacular style or Chettinadu architecture which is unique.

Conclusions

Traditional Bhutanese architecture is a unique and important aspect of the country's cultural and spiritual heritage. The use of locally-sourced natural materials, bright colors, intricate carvings, and elaborate details reflect the country's rich history and spiritual beliefs. Today, traditional Bhutanese architecture continues to be an important part of the country's cultural identity, and it is one of the key features for Brand Bhutan.

Its origin, evolution, and significance reflect the country's close connection with Nature, its rich cultural heritage, and its religious beliefs. Therefore, preservation of Bhutan's traditional architecture is crucial in maintaining the country's cultural identity and heritage as a part of the government's mission towards developing a city brand. The study of Bhutanese architecture provides valuable insights into the country's history and traditional practices and highlights the importance of preserving cultural heritage for city branding.

The organically evolved elements in architecture, endemic to a geographical location, attracts the contrast and has added to Bhutan's branding. Sense of timelessness present in traditional architecture appeals to the tourists from most modern and western countries where there is very little traditional architecture left, and the designs are often commercially influenced.

This paper argues that such models of branding of vernacular architecture can be replicated in small areas of traditional architecture in parts of other countries. In India, such exclusive areas could be developed and sustained in places like Rajasthan, Kerala or Chettinad area of Tamil Nadu, to reap the benefits enumerated above.

On the contrary, negative implications encompass the disregard for cultural property, diminishment of cultural genuineness, commercialization of traditional values, and the

misrepresentation or inaccurate portrayal of customary practices. The detriments of tourism at its destinations are evident through air pollution, inadequate management of solid waste, and the depletion of vegetation. It is a very delicate balance between the need for sustaining the economy through tourism and protecting the place from negative impacts of over tourism, A situation evident in many Indian cities.

This study has the following limitations: First, it studies only the facades of buildings and not inside planning. Second, the site survey is limited to selected buildings mentioned in Table 2 from four cities of Bhutan which are significant from cultural standpoint. However, they do not represent the whole of Bhutan.

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References

- Al-Hinkawi, Zedan (2021) Branding for cities: the case study of Baghdad. IOP Conf Ser Earth Environ Sci 779, 012037 Available at: <https://doi.org/10.1088/1755-1315/779/1/012037>
- Anon (2021) Tourism Policy of the Kingdom of Bhutan Bhutan: Royal Government of Bhutan.
- Athina Ardhyanto, Bart Dewancker, Yu Ling Tsai & Rizki Ersya Heryana (2023) *Memory recollection and oral history: a study of vernacular architecture transformation of the past*, Journal of Asian Architecture and Building Engineering, 22:6, 3435-3454 Available at: DOI: 10.1080/13467581.2023.2204951
- Ardhyanto, Dewancker, Tsai, Heryana (2023) *Memory recollection and oral history: a study of vernacular architecture transformation of the past*. Journal of Asian Architecture and Building Engineering 22, 3435–3454 Available at: <https://doi.org/10.1080/13467581.2023.2204951>
- Amundsen. (2001) *On Bhutanese and Tibetan Dzongs*. www.researchgate.net [Accessed 16 October 2023].
- Bhardwaj, M. & Garg, P. (2016) The bungalow – part of India’s vernacular heritage. International Journal of Environmental Studies 73, 604–615 available at <https://doi.org/10.1080/00207233.2016.1185335>
- Bhutanese Architecture Guidelines (2014)* Bhutan: Ministry of Works and Human Settlement Royal Government of Bhutan.
- Bhutan Building Regulation (2018)*. 1 ed. Bhutan: Department of Human Settlement, Ministry of Works and Human Settlement, Royal Government of Bhutan.
- Bhutan Building Rules (2002)*. Bhutan: Department of Urban Development & Housing, Ministry of Communications, Royal Government of Bhutan.
- Bhutan Foundation, T. B. (2023). *The Bhutan Foundation*. [Online] Available at: <https://www.bhutanfound.org/> [Accessed 16 October 2023].
- Chettri, Dhaurali, Neopanay, Cheki, & Gautam (2022) *Wind vulnerability and strengthening of Bhutanese vernacular roofs*. Journal of Geomatics, Natural Hazards and Risk 13, 1511–1534. <https://doi.org/10.1080/19475705.2022.2086830>
- Department of Urban Development & Housing of Bhutan (2002). *Bhutan Building Rules 2002* Bhutan.
- Dujardin (2000) *From Living to Propelling Monument: The Monastery Fortress (dzong) as Vehicle of Cultural Transfer* E Journal: /himalaya.socanth.cam.ac.uk
- Ezenagu Ngoz (2016) *The role of cultural resources in Tourism development in Awka*. African Journal of Hospitality, Tourism and Leisure 5.
- Ferreira, C. (2023) *Adaptive reuse of vernacular built heritage: learnings from Alcino Cardoso House*. Journal of Building Pathology and Rehabilitation

- García, B. M. (2019) *Resilient cultural heritage: from global to national levels - the case of Bhutan*. Disaster Prevention and Management: An International Journal, Vol. 29(1).
- Groat, W. (2013) *Architectural Research Methods*. London: Wiley Publishing.
- Georgia Yfantidou, M. M., 2017. *The Future of Sustainable Tourism in Developing Countries*. Sustainable Development, 25(6), pp. 459-466.
- Gyan P. & Nyaupane, D. J. T. (2010). *Power, regionalism and tourism policy in Bhutan*. Annals of Tourism Research, 37(4), pp. 969-988
- gps-coordinates (2023). *gps-coordinates.org*. [Online] Available at: <https://gps-coordinates.org/bhutan-latitude.php> [Accessed 16 October 2023].
- Hmood, Jumaily, & Melnik (2018) *Urban Architectural Heritage And Sustainable Tourism*. Pp. 209–220 Available at: <https://doi.org/10.2495/St180201>
- Jennifer Leigh (2022). *Bhutanese Cultural Profile*. Diversicare.
- Jest, C. (1992) *Safeguarding of the Cultural Heritage of Bhutan*, Paris: United Nations Educational, Scientific and Cultural Organization .
- Jelena Lukić, A. D. (2022) *The role and importance of people dimension in city branding in digital age*. Belgrade, Banjaluka, 2022
- Karahan, D. (2020) *Evaluation of vernacular architecture of Uzundere District in relation to ecological sustainable development*. Journal of Asian Architecture and Building Engineering
- Lukić Nikolić, J. & Dejanović, A. (2022) *The role and importance of people dimension in city branding in digital age*. Available at: <https://doi.org/10.7251/blczr05221551>
- M.A. Sarvin Elahi. (2022). Investigating the Role of Vernacular Architecture as a Sustainable and Eco-Friendly Architecture in City Branding , 5 th International Conference of Contemporary Affairs in Architecture and Urbanism (ICCAUA-2022)
- Minguez Garcia, B. (2019) Resilient cultural heritage: from global to national levels – the case of Bhutan. Disaster Prevention and Management: An International Journal 29, 36–46 Available at: <https://doi.org/10.1108/DPM-08-2018-0285>
- Ministry of Works and Human Settlement Royal Government Of Bhutan (2014). *Bhutanese Architectural Guidelines*. Bhutan.
- Misra (2016) *South Asian vernacular architecture*. International Journal of Environmental Studies 73, 481–483. <https://doi.org/10.1080/00207233.2016.1199400>
- Nyaupane, G.P. & Timothy, D.J. (2010) Power, regionalism and tourism policy in Bhutan. Ann Tour Res 37, 969–988 Available at: <https://doi.org/10.1016/j.annals.2010.03.006>
- Nimesh Chettri, Govinda Dhaurali, Tekindra Neopaney, Tshering Cheki & Dipendra Gautam (2022) *Wind vulnerability and strengthening of Bhutanese vernacular roofs, Geomatics, Natural Hazards and Risk*, 13:1, 1511-1534 Available at: DOI: 10.1080/19475705.2022.2086830)
- Ngozi Ezenagu, I. C. C. (2016) *The role of cultural resources in Tourism development in Awka*. African Journal of Hospitality Tourism and Leisure ., Volume Volume 5 (2).
- Okech, R. N. (2010) *Socio-cultural Impacts of Tourism on World Heritage Sites: Communities' Perspective of Lamu (Kenya) and Zanzibar Islands*. Asia Pacific Journal of Tourism Research, Volume 15, (2010) (Issue 3: Island Destinations: A Natural Laboratory for Tourism), pp. 339-351
- Salzer-Mörling, M. & Strannegård, L. (2004) *Silence of the brands*. Eur J Mark 38, 224–238 Available at: <https://doi.org/10.1108/03090560410511203>
- Schuelka (2012) Inclusive Education in Bhutan: A Small State with Alternative Priorities. Current Issues in Comparative Education 15 Available at: <https://doi.org/10.52214/cice.v15i1.11470>.
- C.R.Kothari (2004) *Research Methodology- Methods and Techniques*. Second ed. New Delhi - 110002: New Age International (P) Limited, Publishers
- Thinley (2020) Chapter Cultural Continuity and School Education in Bhutan: Current Initiatives, Challenges and Opportunities, in: Himalayan Bridge. Routledge, pp. 1–13 Available at: <https://doi.org/10.4324/9781003105718>

- Wahda Sh. Al-Hinkawi, S. K. Z.(2021) *Branding for cities: the case study of Baghdad*. Baghdad, Iraq & Istanbul, Turkey, Fifth International Scientific Conference on Environment and Sustainable Development.
- World, R. D. (2023) *Bhutan: A rich History*. [Online]
Available at: https://www.pbs.org/edens/bhutan/Bhu_people2.htm#3 [Accessed Tuesday August 2023].
- Wu, Chang (2020) *City Branding Identity Strategy of Creating City Cultural Value-Take the Creation Of Shanghai City Branding As An Example*. Cultural Communication and Socialization Journal 1, 34–36 available at: <https://doi.org/10.26480/ccsj.02.2020.34.36>