

# Bhutan: Its Architectural Heritage and Change

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Technology is an active factor with respect to culture. Whether one desires it or not, the introduction of new technologies generate changes in society and culture, often in unexpected ways. These changes can be manifested in architecture and the physical environment. The idea that one can have significant transformations in technology without changing culture, values and daily life is a faulty idea that has been held by many pre-industrial cultures under pressure from the impacts of technological change.<sup>1</sup> Bhutan has accidentally remained at the fringes of industrialization, imperialism, and globalization until recently. For centuries Bhutan had successfully maintained its independence and cultural integrity only to find itself wedged in between two gargantuan neighbors, and threatened by the overwhelming pressures posed by the global economy. Until the 19th century, their contacts with the outside world were limited. During the twentieth century Bhutan has tried to regulate and direct the importation of outside influences to protect its religion and culture. The monarch (Druk Gyalpo) and government seek a way of gaining some of the benefits to be had from the outside world while wishing to keep their traditional culture intact and vital. Theirs is an uphill struggle at best. At worst it has been a losing battle as selected introductions from the outside world continually surprise the government with unexpected, and sometimes even unnoticed consequences.

Bhutan was divided into small rival independent monarchies who struggled with one another until the 17th century when a Buddhist theocratic government emerged.<sup>2</sup> In 1616 Ngawang Namgyal, a Drukpa monk, came to Bhutan from Tibet, and became the spiritual and secular leader of Bhutan, and had himself proclaimed Shabdung (At Whose Feet One Submits). Until 1907 the country was governed under the Shabdung system.<sup>3</sup>

In 1907 Ugyen Wangchuck, Penlop (regional governor) of Tongsa took control of the whole country, ended the Shabdung system, created a monarchy, and became the first Dragon King (Druk Gyalpo) of the Wangchuck Dynasty.

The 1910 Chinese invasion of Tibet pushed Bhutan deeper into relations with the British for protection.<sup>4</sup>

The last two Druk Gyalpos have been much more aggressively engaged in pushing the selective modernization of

Bhutan. There has been a tendency to view rather dramatic introductions of technologies and institutions as only improvements that would have minor cultural impacts. Jigme Dorji Wangchuck (reigned 1952-72) created the National Assembly (the Tshogdu) as a step towards a constitutional monarchy, sought to strengthen the role of the central government over economic and social programs, abolished slavery and serfdom in conjunction with land reform, and had an all weather road constructed between Thimpu (the capital) and India.<sup>5</sup> Druk Gyalpo Jigme Dorji Wangchuck also initiated the process of creating national institutions such as the National Museum in Paro, and the National Library, National Archives, and National Stadium in Thimpu which became the year-round capital (an efficiency move). New buildings housed the High Court and the National Assembly.

Fearing Chinese military expansion, Bhutan decided to favor India, closed its borders with occupied Tibet (China), and moved to expand Bhutan's presence in the international community as a way of protecting the country's sovereignty, and to gain foreign aid for development projects. Admission to the United Nations in 1971 was a major success of this policy.

The fourth and present ruler, Druk Gyalpo Jigme Singye Wangchuck (reign 1972-present), was educated in India and Great Britain, and continued to modernize the country while attempting to maintain the country's religion, agrarian traditions, patterns of daily life, and traditions of building. As a part of the defense of their culture, wearing traditional dress was decreed, and television was banned until this year.

The protection of their heritage extends to the landscape and the government has set aside more than 25% of the country as national parkland, limited logging to less than 5% of the land area, and banned the export of unfinished timber.<sup>6</sup> Government policies even limit villagers to gathering firewood from dead and fallen material in a country in which only about 30% of the population has electricity in their homes and most people use wood as their primary fuel. Hunting is banned to protect wildlife.

Visas to foreigners are strictly limited to minimize their influence on the Bhutanese. Tourists were not allowed into the country until 1974.

In spite of these efforts, unforeseen change has come to Bhutan and policies to improve the living standards of the population, though meant as technically neutral benefits, have accelerated the process of cultural transformation. Three elements are responsible for many of the changes that are occurring: the construction of a national road system, education, and health care policies. None of these three policies were intended to alter traditional architecture but they have.

The road constructed with Indian financing, technical aid and labor has opened the country to truck and automobile transportation for the first time. The all weather one lane road system runs west to east through the inner Himalayan zone of the country and connecting together the largest towns with spurs turning south to connect the heartland of Bhutan to the southern border towns of India at four points. Before there was almost no wheeled transportation in the majority of the country due to the mountainous conditions. Essentially self-sufficient villages were connected by footpaths to one another, religious institutions, and the governmental centers. Even today about 95% of the population resides in small villages. The road has made it possible to travel to places by bus that once took many days to walk. This has created a greater mobility, and made the introduction of goods and ideas into areas once remote. This includes concrete, glass, and sheet metal construction materials which were viewed as culturally neutral introductions.

An educated elite has been created to fill the new government bureaucracy and manage the development policies initiated by the Druk Gyalpo. This has meant sending young Bhutanese to India for schooling at first and then the establishment of schools in Bhutan. About two generations of western trained people now occupy the important positions in government and business who intellectually have their feet in two very different worlds. As the government officials and the business class attempting to modernize Bhutan while remaining true to their heritage, they constantly straddling the line that divides the nurturing of what they understand to be their heritage and its disruption by imported innovations. School facilities and the educated population keep increasing in numbers.<sup>7</sup>

Public health measures have inadvertently altered the vernacular building tradition. Major efforts have been made to support traditional medicine while introducing modern Western medicine and public health practices. Inroads are being made into early mortality due to illness, and the life expectancy at birth for men has risen from 44 to 50 years from 1985 to 1995, and from 43 to 54 for women in the same period.<sup>8</sup> Coupled with a high birth rate this laudable effort has created a rapid population growth rate which the government is trying to reduce with a birth control campaign. From 1985 to 1995 the population grew from 1,380,000 to 1,640,000. Many new houses have been built within the last decade increasing the use of imported materials and technologies.<sup>9</sup>

These pressures are manifested in the changing nature of the vernacular farmhouses of the inner Himalayan valleys which represents the most densely settled portion of the country. The government does not always notice the changes that are occurring in vernacular building.

The traditional farmhouse might stand alone or in a small hamlet composed of up to 20 dwellings. Generally, the house is a three level structure set on a rubble foundation. The foundation trench to contain the rubble is usually about 80 to 100 cm wide and about 120 cm deep.<sup>10</sup> The stone foundation may be raised as much as 80 cm to reduce dampness in the rammed earth walls which are constructed on it. At the second floor level wide rectangular gaps are left in the rammed earth walls for window and wooden wall sections which often project out slightly from the rammed earth wall. More windows are normally placed on the south side. An elaborate cornice sits on top of the wall, and increases in depth and complexity depending upon the number of stories in the house. A pitched timber roof rises above the ceiling of the floor below leaving a space between the top of the ceiling and the roof for an attic. The roof is commonly pitched about 15 degrees to allow the rains of the summer monsoons to run off while not being too steep since the wooden shingles are traditionally held down with rows of stones.

Houses invariably have rectangular plans with the ground floor devoted to a barn. It has a trampled dirt surface. The entrance to the barn is usually a wooden door on the front facade of the structure. The living quarters are on the floor above the barn which allowed the heat produced by the animals below to warm the living quarters above. Here one would find a kitchen-living room. Since there is no chimney in the traditional farmhouse, this room is very dark and the ceiling and walls are covered with soot. The kitchen fire is the source of heat. There will be a shrine room for worship, maybe one or more separate bedrooms, and other rooms are devoted to storage. In most houses without bedrooms, people sleep in either the shrine room or the kitchen-living room. In a few houses the living quarters are accessed by a steep staircase from the barn, but the more common solution is to have a steep staircase to a south-facing timber landing or porch. Here members of the household will work in the warmth of the winter sun. The attic under the timber roof is used for food storage and drying. It has a floor of planks covered with mud. The open space between the walls and the roof allows for breezes to dry cattle feed and hay, and peppers are often placed on top of the shingle roof to dry in the sun.

In visiting villages, such as Shingkar in Central Bhutan, one's first impression is of unchanging traditional patterns of building and farmhouse use. This is not the case. One of the most dramatic changes came as a result of government health policies. The use of ground floors as barns posed a health hazard and was banned. As a result, new uses had to be found for the ground floors. In some cases the ground floors are paved and used for either more living quarters or more storage space although dampness and the limited ventilation make this space less desirable for residential use or storage of hay and grain. While old houses lack many openings at the ground floor level, new houses now have windows at this level in response to changed usages of the ground floor spaces. Without animals for heat in the winter, new metal stoves with metal pipe chimneys have become more common, and chimneys on cooking stoves have reduced the amount of smoke in the kitchen-living space. In

some instances the kitchen has become a separate room from the living room. Usually the chimneys do not go through the roof, but end in the attic. This practice and the tendency to leave the chimney uninsulated has created a serious fire hazard.

It is now common to find a small stockade next to the house or a stockade styled barn similar in construction to the hut/barns used by herders in the high country.

Newer houses also tend to have more windows, and more window area letting in much more sunlight into the traditionally rather dark dwelling. More traditional decoration is painted on the wood frames of the window surrounds, doors, and eaves and cornices than one finds on older traditional houses. The training of artisans in the royal school for the traditional arts to maintain the artistic traditions of the country has made house painters more plentiful and popular.

In new houses in towns or close to the few roads, one finds the use of concrete and concrete block replacing rammed earth and rubble stone walls. Plastered and white washed concrete walls do not look significantly different from the outside but the insulating properties of concrete are quite different from that of rammed earth, which along with the greater window area increase the need for heating requiring a greater reliance upon fire wood. This adds more pressure on the forests and the government's forest preservation efforts.

The importation of corrugated metal has often led to the replacement of the wood shingle roof by the corrugated metal roof which lasts much longer than the two to five year life span for untreated wood shingles.

All of these changes have occurred to the construction of farmhouses without either the introduction of running water, or electricity.

New materials brought to much of the country by the new road system, public health policies, and a modest increase in wealth have already led to a number of recognizable changes to the traditional farmhouse. The overall form of the house and use of traditional decorative motifs have continued. As modernization policies continue to increase in number and impact, one can expect more dramatic changes to occur to the culture and the house in Bhutan. Electricity and running water will surely have an impact not only on the house, but on the house's relationship to the village water sources and more.

The transformation is as impressive in government and public buildings. The traditional dzong was a fortified administration and military center in combination with a monastery. In former times the local population could take refuge in the dzong when under attack. As such, the dzong was sited for defense. It was usually a roughly square or rectangular enclosed courtyard or linked courtyards with government functions separated from the monastery. At the center of the main courtyard stood the utse, a tower that contained the main temples and supporting spaces and divided the administrative from the monastic section. The khemar, a red horizontal strip near the top of the white exterior walls, differentiated the dzong

from common buildings.<sup>11</sup>

From 1962 to 1969 Jigme Dorji Wangchuck had Tashichho Dzong rebuilt as the centerpiece of his new capital. The building expresses change using traditional construction techniques and materials but at a scale that makes it the largest dzong in the country. Whereas other dzongs had undressed or roughly dressed stone walls, Tashichho Dzong has neatly dressed granite masonry set in mortar. It has rectangular and square cut paving stones whereas the courtyards of other dzongs were usually paved with randomly shaped stones. The very large oblong courtyard is surrounded by a two story structure with traditional verandas or arcades at the residential portions. The corners of the dzong have the unique features of corner towers.<sup>12</sup>

With the construction of the new bus station in Thimpu there was not traditional structural precedent available. In an attempt to merge with traditional forms, the bus station has merged the elements of an enlarged house with that of a squat utse.

Each new policy to selectively bring new technologies has had impacts that were unexpected and unintended. Some of these changes can be read in the architecture. Even the most vigorous efforts by a monarchical/semi-theocratic state to protect its traditional culture against changes wrought by the selective introduction of technology has not been able to stop significant social change from occurring with the adoption of a limited range of technologies from the outside world.

In spite of their noble efforts, Bhutan has not figured out how to protect her traditional culture and architecture from the transformational power of technology and the globalized culture. Maybe it cannot be done. Clearly, technology is an active force in the processes of globalization and cultural transformation.

## NOTES

<sup>1</sup> See: Benjamin Schwartz, *In Search of Wealth and Power: Yen Fu and the West*. New York: Harper & Row, 1964.

<sup>2</sup> Much of the historical information is drawn from: U.S. Library of Congress online country studies (<http://lcweb2.loc.gov/c...dy:@field>); Leo E. Rose, *The Politics of Bhutan* (Ithaca: Cornell University Press, 1977); Christian Schicklgruber & Françoise Pommaret, eds., *Bhutan: Mountain Fortress of the Gods* (New Delhi: Bookwise PVT Ltd., 1997).

<sup>3</sup> Leo E. Rose, pp. 26-28.

<sup>4</sup> Library of Congress online country studies. Bhutan.

<sup>5</sup> India had financed the road as a necessary part of its border defenses against China. The road was finished in 1962, the year that India fought and lost a border war with China.

<sup>6</sup> *Los Angeles Times*, Jan. 21, 1999.

<sup>7</sup> *United Nations Statistical Yearbook for Asia and the Pacific*, 1996, p. 86.

<sup>8</sup> *United Nations Statistical Yearbook for Asia and the Pacific* 1996, pp. 80, 87.

<sup>9</sup> *United Nations Statistical Yearbook for Asia and the Pacific* 1996, pp. 80.

<sup>10</sup> Much of the information on the traditional farmhouse is derived from direct observation, or *An Introduction to Traditional Architecture of Bhutan* (Thimphu: Dept. of Works, Housing and Roads, Royal Government of Bhutan, 1993).

<sup>11</sup> *ibid.*, pp. 52-59.

<sup>12</sup> *ibid.*, pp. 84-89.