

# Architecture and Gross National Happiness in Bhutan

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**Abstract** Happiness is a state of emotion which every individual aspires to be, however, it is not an end result as it itself is based on the cause and condition. Gross National Happiness (GNH) is the Bhutan's middle way development philosophy that quantify citizens' state of wellbeing that leads to the individual and communal Happiness. Like other physical features, architecture too plays an equivalent role in its capacity imparting a sense of happiness to an individual or society. Architecture being considered as the profession that support any development process which ultimately leads to the summit of peoples' comfort and happiness. Therefore this paper explains the four pillars and domains of GNH and how architecture contributes the society in fulfilling the vision of GNH Philosophy. It outlines how architecture justifies itself to the pillars and domains by inferring various report and research papers.

**Keywords:** *gross national happiness, architecture, sustainability, bhutan*

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## 1. Introduction

The relation between happiness and architecture are vague as the state of happiness influenced by the built environment are subjective to every individual. However, many studies have found that, the individual comforts is met by the various component of the building and its surrounding fulfilling the indicators of Gross national Happiness. Researchers have assessed and analyzed that architecture and its philosophies have helped in creating meaningful, virtuous and pleasurable experiences and emotions which contribute directly or indirectly towards the wellbeing of the people [1] in terms of physical and psychological needs through participation in physical activity and community life [2]. More over the main aim objective of the Ministry of Work and Human Settlement is to improve the universal wellbeing of people of Bhutan with minimum negative impact on the environment by buildings and infrastructure [3].

## 2. Gross National Happiness

The happiness-oriented development was evolved from historical, social and cultural features rooted in Buddhist philosophies for many centuries and it was clearly stated in code of Bhutanese Law the Zhabdrung Ngawang Namgyal in 1629 that, the purpose of government will fail if they can't create and provide happiness to its citizens. These codes have clearly stressed that being a Buddhist nation, the law of Bhutan should promote happiness for all living beings [4]. In 1972, Druk Gyalpo Jigme Singye Wangchuk, popularly known as the Great Fourth, has

spoken out the concept of Gross National Happiness to the world, who firmly believes GNH as guiding philosophy for Bhutan's development strategies. However, it has come to global public attention in 1986 when the Great fourth told the Financial Times, "Gross National Happiness (GNH) is more important than Gross National Product (GNP)" in an interview in London. [5]. Bhutan's GNH philosophy was finally overcome its inhabitation to speak and crossed the Bhutan's boundary in 1998, when Lyonchen Jigme Y Thinley speak about the country's philosophy at the Asia-Pacific Millennium meeting in Seoul, South Korea [6].

GNH from the tiny landlocked country of Bhutan is a unique and significant living development philosophy which act as the alternative to the rationality of GDP metrics [7]. It is considered a shared duty of society and is also interpreted in individual day to day activities where people are expected to participate for their own progress and the development of the country [8]. Directly or indirectly it endeavors for the happiness for a society which is considered sustainable goal for any society and environment. Thus, to uphold and enhance its essence, it is incorporated in Article 9 of The Constitution of The Kingdom of Bhutan as "The State shall strive to promote those conditions that will enable the pursuit of Gross National Happiness" [9].

According to Verma [7], GNH is similar to Buddhist philosophies focusing on individual satisfaction and peace, rather than material comfort and pleasures. She has found that shared happiness through with concern and service towards each other in harmony with nature are embedded in it. She has also defined GNH in the form of eight manifestations namely; Moral concept; Guiding principles; Conceptual framework; Measurement index; Screening of policies and projects; Individual practice; Global influence; The secularization of a Buddhist concept.

### 3. Four Pillars of GNH

The four pillars of GNH consider social, cultural, political, economic and ecological wellbeing of society and nature as the main component for national development efforts and policies. They are:

- a) Sustainable and Equitable Socio-Economic Development
- b) Preservation and Promotion of Culture
- c) Environmental Conservation
- d) Good governance

The first pillar explains vividly that material economy is also an essential part of any happy society as it provides for basic necessities and eases burden. However, a GNH economy must value the social aspects which contribute to societal happiness. Thus, to achieve happiness in society and individual level, the sustainable economy should move forward hand in hand with the social aspect of society.

The development of a country must also adhere around a vibrant and grounding culture that conveys on-going wisdom and an ethical sensibility to the nation, which not only showcase the unique identity of the country but also safeguard the nation's sovereignty. Thus, to preserve and promote the rich culture is embedded as one of the pillars of GNH.

Similarly, Environment Conservation has been also considered as key contributors to a GNH apart from providing green and renewable energy. It is believed that surrounding nature contributes to aesthetic and another stimulus for the inhabitant's happiness. Thus, every individual or society must conserve and live in harmony with a surrounding ecosystem [10].

The pillar of good governance made every possible way to evolve a creative and active transformation of ideals into the policy that works at the forefront of governance in accordance with the values of GNH. Numerous tools and indicators of GNH ensure the values are indeed featured in social policy that support for the welfare of community and nations as whole [11].

### 4. Nine Domains and Its Indicators

Tools and indicators disclose every information about society and indicate the right direction of economic and humanitarian progress. Today, the society value what we have quantified and utilized it as a reference to take decisions that have an impact on the individual's state of living [7]. However, if these indicators don't quantify citizens' state of living and a country's economic and political vision, then the meaning of indicator became futile in any development paradigm. In this case the quantity of indicators might increase, but living quality of society might not get improved [12].

Therefore, Bhutan has developed the GNH index with policies so that the development activities can revolve around following the ideology of GNH. Every institution and agencies use these indicators to develop and evaluate the policies illuminates the role of indicators in shaping decisions and driving society to targeted direction. The nine domains of GNH index are:

1. Living standards
2. Education
3. Health

4. Environment
5. Community Vitality
6. Cultural resilience and promotion
7. Time-use
8. Psychological well-being
9. Good Governance

Based on these domains, 72 indicators and 151 variables along with sub-indexes are developed to quantify and analyze the state of happiness in people living in Bhutan [10].

Psychological wellbeing has four indicators that evaluate the achievement of government in providing appropriate and relevant policies and services which elevates positive emotions of people through spiritual activities and prayers, reducing the prevalence rates of negative emotions in the society [11]. The time use domains along with its two indicators, analyze the quality of life and the nature of time spent that contribute to levels of happiness of an individual and society.

Similarly, community vitality domain focus on the relationship status and interactions among and within communities in a developing sense of belongingness. It has also four indicators. Cultural Diversity and Resilience with its four indicators evaluates the stature of the nation's culture and traditions. Both tangible and intangible traditional culture contributes to nation's identity. [13]

Health and Education domain evaluates health and education status of the people. Health being the crucial component of the individual's happiness and wellbeing, and education contributes in enhancing knowledge on values, creativity, skills, and civic sense in every individual. They are assessed using four indicators each [11].

Currently about 72.5% of the country is covered under forest [14] which is above the minimum requirement of forest cover of 60% according to Article 5 of The Constitution of The Kingdom of Bhutan [9]. The Ecological Diversity and Resilience domain with its four indicators examine the country's natural resources, its potential thread and different management responses.

The income earned by an individual or family is assessed and analyzed by the living standard domain. This domain consists of four indicators: income, housing, food security, and hardship in making livelihood. The domain of good governance enables every citizen to make leaders accountable for their job and evaluate whether government policies are effective in supporting the livelihood of society. Government performance, freedom, and institutional trust are the four indicator under good governance [11].

### 5. GNH at International Level

In 2011, Bhutan tables the UN resolution 65/309 titled "Happiness: Towards a holistic approach to development", which was then adopted by member states. Subsequently, the Government of Bhutan has held an executive level meeting on "Wellbeing and happiness: Towards a New Economic Paradigm" in 2012 at UN headquarter in New York. Based on its outcome, Bhutan has submitted the New Development Paradigm report titled "Happiness: towards a new development paradigm" to the U.N.

General Assembly in December 2013. This report was prepared by an International Expert Working Group, which was established under Royal Decree to translate GNH into a new development paradigm and policy which can be implemented in other parts of the world. [15]

## 6. Architecture

According to Oxford dictionary, architecture is an art and study of designing buildings and an Architect is a person who plan or create an idea, an event or a situation. However, in this study an Architect is referred to a person who design buildings and its environment. According to Shah [16] architecture is a product of climate, economic, social and cultural context of a particular region. Similarly, Sireesha [1] has explained that the design of the an external built environment influences the well-being and the health condition of people and his/her quality of life in the long run, thus architects should not only focus on the skeleton and envelope of a building but also on the mental and emotional approach it embraces.

Louis Kahn, the renowned architect claims that everyone can design a space but only an architect is skilled to create an architectural built environment that fulfills people's psychological needs besides satisfying its physical needs. Generally architecture is considered as a platform for human happiness [17] where they can express the feelings through forms, colours and textures [18]. Similarly, Dombrovskis [19] has also explained that buildings are not significant for its symbolic repute, but its primary aim is prompt an emotion.

## 7. Architecture in Sustainable and Equitable Socio-economic Development

Sustainable and Equitable Socio-Economic Development is a central path to all development activities in Bhutan. It preserves and promotes sustainable means of progress in health, education and economy sectors [20]. Through the years, architecture has been regarded as an element of a landscape which expresses its beauty along with engineering achievements. However, the change in perception on architecture has led to a more diverse use of architecture in socio-economic development like branding space and built forms and architecture for tourism, etc.

Piatkowska [21] stated that architecture can be an integrating and holding together character in local communities. Traditional Bhutanese construction involves a large number of people during the construction period such as in ramming of the earth within the wooden forms [22]. Such tradition of providing communal labour contributions during house construction is an excellent way to initiate community-based economic developments with a feeling of community belongingness [23]. Wongphyat [24] has stated that this type of community participation is one of the methods to preserve culture and achieve the sustainable wellbeing-ness of society in this modern era.

Sustainable and equitable socio-economic development requires proper and sustainable use of building materials and local produce [22] where it reduces waste production

due to efficient use of materials, energy and resources which ultimately reduce the economic burden of a nation. The creation of sidewalks, bicycle paths, recreational and sports infrastructure with walkable neighborhoods would enhance the physical activities and interaction among the citizens. This enrich the social wellbeing of the individuals and society as a whole [25].

As highlighted above, many studies have found that designing and creating a new built environment is a method of space branding which helps in creating new meaning to the space [21]. For example, iconic buildings such as Burj Khalifa in Dubai, Taktshang monastery in Bhutan, and Sydney Opera house in Australia are the landmark structures that give identity to the region and brand the place or region. It describes the importance of a space with respect to the other spaces and helps in increasing its market value. Such type of architecture can be employed as an instrument to boost tourism in the region, enhancing the economic stability of the region.

Characters of a built form were considered more valuable and preferred by house buyers. A site consisting with historical importance and better view are considered valuable due to its strategic location and unique identity [26]. The construction of the Sydney Opera house in 1973 has become a landmark place in Australia increasing its tourist inflow. In the year 2011-2012, about 1.4 million tourists visited the place generating an income around \$141 million from the visitors and performances and became one of the key contributors to the Australian Economy [27]. The tourist related activities in Sydney Opera House has improved the precinct value of the place contributing an amount of \$ 775 million every year apart from creating additional employment around 8439 of fulltime jobs either directly or indirectly. In 2013, Brand Asset Valuator has revealed that the brand of Sydney Opera House is more distinguished than Australia itself. Moreover, it showed the role Sydney Opera House played as a face of Australia in the international market [27].

The Eiffel Tower in Paris is considered as the most visited monument in the world as of 2015 with 6.91 million people. The latest mega tourist attraction is in Dubai, due to the construction of Burj Khalifa, the tallest skyscraper in the world with 828m high surpassing Shanghai tower of China with 632m high making it the tallest structure in the world in 2009 [28]. It was studied that these skyscrapers in UAE were constructed based on the government's decision to diversify its oil-based to tourism and business based economy.

According to Bhutan Tourism Monitor 2017, Bhutan received a total of 254,704 tourists in 2017 which is an increase of 21.5 percent in 2016. 88.4% of the total tourists have visited Bhutan as cultural tourist due to its unique culture and traditions, especially the architecture of Dzongs and monasteries [29]. Since the introduction of the Tourism Council of Bhutan (TCB) in 1974, the tourism sector played a major role in a socio-economic development of Bhutan contributing 1.4% of Bhutan's total GDP in financial year 2016-2017 [30]. It is studied that a new job is created for an arrival of every thirty new tourists thus, it strengthens the social and economic status of individual and society as a whole [31].

Unique traditional architecture acts as a magnet to stimulate tourist influx and turns architecture into a

valuable economic development. Places of traditional architecture with vernacular constructions encourages more tourists, thus competing among the existing hotspots [21]. Furthermore, traditional buildings have an appeal over contemporary architecture owing to its remarkable history, location, construction types and its architectural styles [32].

## 8. Architecture in Preservation and Promotion of Culture

The distinct culture of nation acts as an identity and facilitates sovereignty of the country and it's also acts as a shield against the negative impacts of modernization [13,33]. Therefore, Preservation of Culture is considered as one of the important pillars of GNH. Traditional Bhutanese architecture has been existing since 7<sup>th</sup> century during the arrival of Guru Rinpoche in Bumthang on the invitation of King Sindu Raja [34]. Article 4 of The Constitution of the Kingdom of Bhutan states that the state shall work towards preserving, protecting and promoting the cultural heritage through various means to improve society and cultural life of the citizens [9]. Therefore, it is also a duty of the citizens to support the state and government to preserve, protect and promote the culture.

Encouraging and allowing public participation in the different cultural events will boost their interest in the culture of the country and help in preservation and promotion of the culture. It was observed in that restoration of historic buildings in Bhutan improves community interactions and helps to retain the culture and tradition of the region beside creating employment opportunities for the local community due to communal labour support from local communities [26]. Similarly, in Bhutan, public gathering and ceremonial activities like annual tshechu (religious festival) are normally conducted in Dzongs, monasteries and ceremonial grounds which enhance the sense of belonging and showcase the unique identity.

The diversity of culture manifests in the form of both tangible and intangible forms like language, arts and crafts, etc. where architecture is a manifestation of the cultural context in which it resides [13,35]. The traditional architecture of a country reflects beautiful expressions of the ancient culture, religion of the people. Harmonious proportions and elegant designs of Bhutanese architecture reflects the simple daily lives of the Bhutanese people with pristine landscapes of green valleys and snowcapped mountains [36].

Dzongs and Lhakhang are the main hub where the authentic art and architecture of Bhutan revolves, therefore partnerships between architecture and other related professions can be made to document the art and architecture and work towards preserving, protecting and promoting them by developing standards and policies. Currently, Division of Conservation of Heritage Sites (DCHS) under the Department of Culture, Ministry of Home and Cultural Affairs which looks after the architectural culture, and is responsible for the preservation and promotion the country's culture and heritage [37]. The DCHS also looks after the sustainability of cultural landscapes of the country. Thus architecture

not only fulfills the utility and economical aspects, but also the social and spiritual need of individual and society by preserving and promoting it [34].

## 9. Architecture and Environmental Conservation

Nature was worshiped in the early period of human history, but with the change in mindset of people towards nature and upcoming of major infrastructure developments with change in time, nature and its value has neglected, subsequently the problem related to the environment has been faced by humankind in the later stages. Thus, planners and policy makers started to make amendments in policies towards restoring the pristine environment, where architecture also equally plays an important role in achieving these goals.

Every year about 55 billion tons of fossil fuels, minerals, bio mass are mined from the Earth [38] and approximately 40% of global energy is consumed in the construction sector [39]. As per UNEP, buildings consume almost half of the energy generated in the world. A building accounts for 40% of GHG emissions, consumes 25% of the earth's fresh water, and generates more than 20% of solid waste (including food waste, yard waste and recycled materials) in developed countries [40].

Environmental Conservation is one of the pillars of GNH and focuses on the protection of the nature and restoring the degraded lands. The domain Ecological Diversity and Resilience consists of three subjective indicators regarding environmental challenges, urban issues and environmental responsibilities which the architects and urban planners should be more accountable.

Designing and constructing building cannot be done without understanding the environment. Failure to do so may lead to disaster of either the built environment or to the occupants [41]. Adaptability of building to climatic condition of a region is considered as one of the important characteristics of architectural design, particularly in Bhutan where the attitude varies from 200m to 7000m above mean sea level [23]. And it was found that indigenous architecture can contribute more in safeguarding environment than new construction. The appropriate choosing of construction materials and technologies minimize the use of external energy to provide comfort to the inhabitants and generate less pollution while energy [42]. Sdei [43] has found that thermal comfort in traditional Japanese houses constructed from traditional materials like bamboo, rice paper and wood more economical and comfortable than the recent buildings both in all seasons. The thermal comfort of the building can be also influenced by the layout of spaces and its orientation [44]. It was found that the courtyard housing in Chinese villages are more comfortable due to the low rise houses located in the south, constructed with mud walls and spacious courtyards to gain adequate sunlight.

In today's world, the issue related to pollution has become the major concern. The construction industry is a major contributor in the production of construction and demolition waste (C&D waste) polluting land and air by the dusts coming from the sites and volatile compounds

from paints. Countries like India, Europe, USA and Japan generate around 900mil. tons of C&D waste every year due to change in design and planning of an infrastructure [45]. Therefore, architects are accountable for reduction of C&D waste by carrying out proper feasibility study before planning and designing any built environments. This procedure can reduce the amount of waste going to landfills by reusing construction waste as alternative construction materials wherever possible and feasible. Green building materials and construction techniques can support the construction of buildings, both economically and ecologically [46] as it consumes less energy and produce less pollutions due to construction [47]. Moreover, the Net zero energy building barely consume external energy and water due to its effective use, reuse and recycling and producing energy through waste and renewal energy sources [48].

The other major issue discussed in every Conference of Parties is related to urban areas. According to Ura and group [13], traffic congestion, urban sprawl, inadequate green spaces and lack of pedestrian streets are four major urban issues. The root causes of these problems are due to improper planning of different infrastructures. Providing an adequate public transport system and pedestrian friendly walkways would reduce the dependency on private cars, thus reducing traffic and pollution related to it. Providing more breathing space like parks and open-air sports facilities would not only increase the social interaction among the citizens but also reduce the carbon foot print of the city.

Article 5 of The Constitution of the Kingdom of Bhutan states that it's every citizen's fundamental duty to protect the environment and biodiversity, prevent the ecological degradation and support ecofriendly development practices and policies [9]. Therefore, an architect's role is to design built environments such that they are environment friendly and adaptable to the environment that they are built in. These can be achieved by making buildings more efficient in terms of energy consumption, water usage and short and long-term management of human health and waste generations.

## 10. Architecture and Good Governance

Sustainable development for a nation through good governance can be achieved by formulation of effective policies and strategies to promote sustainable architecture [49]. For instance, the policies include systems to provide incentives for designs incorporating green building principles such as low embodied energy materials and construction techniques, and resource efficient construction methods [50]. Example, an amount of 15% of the total up gradation cost is refunded to constructions that use environmentally friendly technologies. Incentives come in the form of tax reduction to the buildings incorporating these principles. 3R (Reduce, Reuse and Recycle) principles are another important governmental scheme to reduces waste production in construction and to increase efficiency in resource [50].

Recently, it has found that almost all of the new construction of buildings in Bhutan largely depends on imported construction materials and labour creating

pseudo-traditional facade design without having in-depth knowledge Bhutanese Traditional Architecture [23]. To minimize such practices, proper policy and guidelines has to be prepared and monitor adequately as per rules. Incentives such as providing 10 percent of the tax is refund for a business that employs a minimum of 20 employees and has 100 percent of Bhutanese laborers [50] has a positive impact on both social and economic situation of Bhutan in the long run.

Resource efficiency is defined as the efficient use of natural resources, energy and materials, in order to develop buildings with reduced resources and environmental effects. Policies to promote resource efficiency reduces significant pressure from the natural resources [51]. These resources must be managed to sustain for future uses and design aspects should consider spaces for future use. Therefore, to fulfill the vision of GNH via architectural practices, policies, regulations and standards thoroughly relooked and develop to reduce negative impacts of the built form on the natural environment using sustainable building design and construction practices.

## 11. Conclusion

As discussed earlier, when happiness itself is ambiguous to describe, its relationship with happiness may reach to the higher level of complexity. However, the sense of satisfaction and happiness emanate from spiritual wellbeing in the presence of fresh air and water from the rich natural forest and serene environment with a balanced ecosystem. In order to preserve this spirituality and enhance the beauty of the natural environment, Bhutan has discovered and adopted the middle path strategy philosophy to achieve the national development goal of GNH. Every development activities have a construction components which require the profession like architects and civil Engineers to take part in it. As discussed thoroughly in earlier paragraphs, architects can not only design a built form but also contribute in creating a harmonious psychological, social environment with a viable economy in society through various means like developing more energy efficient buildings using green construction material and techniques, integrating social and cultural features. However, to enhance and reach to its summit of energy, cultural and environment sustainability, a proper decentralized policy and regulation should be frame via good governance.

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