

Transformation of Residential Buildings of Patan World Heritage Site

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Abstract

One of the most popular tourist destinations in Nepal is the Kathmandu Valley, which includes seven monumental zones and was inscribed as a World Heritage Site in 1979. The Patan World Heritage Site, one of the Kathmandu Valley's historic areas, is the subject of the research paper. This essay once more focuses on the pilot study of the PWHS buffer region. Outstanding Universal Value of the buffer zone under the WHS is crucial. So, the aim of the study is to identify the transformation pattern of residential buildings of buffer area of PWHS and probable impact on OUV. Even though the article did not include all parameters of transformation, it tried to find out the transformation of physical parameter of residential buildings and its occupancy as time pass. This is a case study research which follows quantitative method. The required data were collected through observation and close end questionnaire survey to the house owners. The collected data were analyzed through simple correlation method and result is drawn. The research came to a conclusion with potential good and negative effects from transformation of residential buildings in the buffer zone of PWHS, which requires detail investigation to identify in the core.

Keywords

Buffer zone, OUV, Heritage Site, Transformation

1. Introduction

A buffer zone is the area which is segregated to distinguish two separate things from each other. It can be defined as a territory that is neutral and situated between two or more bodies of land, typically those belonging to different nations. It can be used to separate or link territories, depending on the type of buffer zone. Buffer zones serve a variety of requirements. Building barriers has several uses, including preventing crime, safeguard the environment, industrial accidents and natural disasters, shield commercial and residential areas from each other, and even to separate prisons [1].

So, it can be said as buffer area exist everywhere in every context. Even the person's buffer zone is also existing, that can be justified by the Vitruvian Man and Le Modular designs of Le Corbusier and Leonardo da Vinci, respectively. The comfort zone of a person can be described as the buffer area for a person. A private room of a house can be described as buffer area of the particular person that cannot be relate with size of the room, it only can relate with the feeling of safety and comfort in it.

Similarly, the awareness about buffer area for heritage area was initiated from 1990 in WH convention but on 1993, 1998 and 1998, the subject of buffer area takes as a main topic for the heritage conservation. All World Heritage Sites (WHS) are required to demarcate buffer areas as a protective barrier to maintain their OUV, even though their shape and size cannot be determined by any laws or specifications. This means that if the buffer zone cannot protect the OUV of any heritage site, it needs to be restructured or reanalyzed. According to 2005 convention, it stated that buffer area should be analyzed "the conditions of integrity". Conditions of integrity can be defined as 'all elements necessary to express the OUV of the property' [1].

As the topic of buffer area and its impact to control OUV of the heritage site is the most important issue, the main aim of the

research is to find out the impact on OUV of PWHS through the study of occupancy and physical transformation of residential buildings in buffer area.

2. Literature Review

Buffer Area

The designation of a location as a UNESCO World Heritage Site aims to promote the recognition, protection, and preservation of the world's cultural and natural heritage, which is thought to be of exceptional significance to humanity [2]. All World Heritage Sites (WHS) are required to demarcate buffer areas as a protective barrier to maintain their OUV, even though their shape and size cannot be determined by any laws or specifications [1].

The need for a buffer zone for heritage sites has been a hot issue since 1990 and in every convention there are few modifications and details added. The concept of buffer zone was previously separated only for natural heritage. This idea was then adopted by cultural heritage as well to stop unwelcome development pressure in the areas surrounding heritage sites that would have a detrimental influence on outstanding universal value (OUV).

The awareness about buffer area for heritage sites was initiated from 1990 in WH convention but in 1993, 1998 and 1998, the subject of buffer area takes as a main topic for heritage conservation. Since 2005, the demarcation of the buffer area for a heritage site, is made compulsory in WHS. But the issue of demarcation of the buffer area is still in discussion. As the buffer area plays an important role in conservation of heritage area, the process of demarcation needs to be justified by committee (Oliver Martin, 2009). A buffer area must be clearly defined on a map and have a policy to highlight the area where development may negatively impact the WHS's setting in order to comply with UNESCO guidelines. Till date, the buffer zone

was again classified as core zone, immediate setting, setting, inscribed zone, and buffer.

Because there is no guidance within the Operational Guidelines addressing management of bigger sets of properties, which may stretch beyond buffer zones, these cases have proved challenging for the local Committee to handle [3]. As there is no any fixed size and rule for demarcation of buffer area, the size and shape of buffer area can be different from one place to another according to their social, cultural, economic status and sensitivity of site. The Buffer region can be used to draw attention to a location where decision-makers and developers need to carefully examine any potential effects. If the defined buffer area is not able to maintain the OUV of the heritage site, it should modify the management rules as well as the boundary.

In addition to "structural and technical" concerns of historical monuments and places, the protected buffer area also safeguards "functional" and "visual" concerns associated with them [4]. Visual buffer zone is created to conserve and promote a visual link between historical monuments and natural or built contexts [3].

Tourism in Heritage site

Today, most countries' economies are growing mostly through tourism. Most of the world heritage sites are going to develop as the heritage tourist destination in the world. The global tourism to heritage sites increases around 10% on average year and one billion international tourists will be visiting heritage sites in developed countries by 2030 each year [5]. As the heritage tourism is in the increasing ratio, the risk of deterioration of the site due to heavy human flow is also in increasing phase [6]. Over tourism in a site may create unwanted development as increase in taxes, fines and create fake values of materials. But in the other hand, it can create the job opportunities for both educated and uneducated people [7]. The over tourism can be controlled at the ground level through three different techniques; Public Education, Government intervention and Community participation [8].

According to Orbasli; "The rehabilitation and adaptive reuse of heritage buildings not only preserves cultural values but can also be a profitable investment. Heritage conservation is an effective economic-development tool" [9]. Similarly according to Foundation; "Rehabilitating historic buildings is thought to be the most sustainable and successful strategy for reviving older structures and historical districts with commercial uses, heritage preservation, and economic development, which has resulted in the creation of thousands of new jobs, businesses, and investment in historic downtown" [10]. But in the name of sustainable development, most of the heritage buildings are going to rehabilitate or reuse in tourism industries now-a-days. By this phenomenon, the native people may leave the place and gentrification can take place. The phenomena will not be good to maintain the OUV of heritage site.

Outstanding Universal Value (OUV)

According to UNESCO heritage convention, there are 10 different points to meet OUV to make inscribe as WHS. among these 10 points, 6 points are focused to the cultural heritage and remaining 4 are for the nation heritage site. The main

concentration of OUV is maintaining the tangible as well as intangible heritage of the site [11]. So, the main concept of buffer zone is to maintain the OUV of the area by maintaining its traditional aspects without having any unwanted external calamities. The external calamities may include unwanted modernization, industrialization, tangible and intangible modifications and dominated unsuitable or unwanted modifications which is added near the main heritage site [1].

Addition of new structure having modern material in protected area of a world heritage site is strictly prohibited. But if the new construction does not lower the OUV of the heritage rather increase, in such case, it can be done. The good example is the latterly added Louvre glass pyramid in front of Louvre museum. It provides incensement in the underground exhibition space without making negative impact on Louvre Museum building [12].



Figure 1: Louvre Museum

The historic Cairo has been fall in danger zone due to the decrease in OUV. The reason of this phenomena are as follows:

- I. The basic needs of residential buildings situated in the buffer area of Cairo. Most of them converted into business purpose like libraries, museum, and souvenir shops etc. and because of this kind of reuse, most of the residential did not fulfill the basic needs of resident. It affected the traditional social structure and oriented to decrease in OUV.
- II. Leaving traditional craft and technology in physical construction of structures and insufficient legal rules and regulations.
- III. Due to unmanaged demarcation of buffer area, local resident buildings are push back from daily need services.
- IV. Dilapidated structures for permission of demolition and reconstruction rather than maintenance.
- V. Lots of illegal construction and settlements around the heritage site.
- VI. Illegal high rise buildings impacting visual integrity [13].

From Cairo, it is clear that a heritage site should be focused on OUV rather than in economic growth to maintain it in WHS. The physical state and rules and regulation for reconstruction of buildings in buffer zone is one of the main point of focus to be

maintained. Not only the physical status, the traditional craft and culture is also equally important on maintaining OUV.

In instances where cultural value is in risk, UNESCO has stepped up its efforts to show off its power by threatening to classify sites as dangerous as a potential first step in the cancellation of WHS classification [14]. Because of the reason, most of the WHS is alert on OUV of the heritage site they have.

3. Case Study

The buffer zone of (PWHS) is the study site for the research. It extends up to approximately 86.48 hectares and using as protective outer layer for the 33.57 hectares of core area. The main heritage area is one more protected layer to the main PWHS, which includes durbar structure, courtyard in front of durbar and the temples monuments on it.

The main aim of the study is to find out the OUV impacts on the WHS by the residential buildings present in buffer area. The report is made after the pilot study of the buffer area which limited in 14 buildings. The buildings were randomly selected and tried to include all periodic buildings to finalize the basic parameters for the deep research in the future. The pilot study is specially focused on physical and occupancy transformation of the residential buildings.

As time goes on, there are many transformation takes place in use of residential buildings. Residential structures used to be reserved for owner-resident use and storage of harvests or conventional business/craft products. According to the survey, there are presence of some buildings in which ground floor is using for daily needs shops whereas there are some buildings that are using their area in Restaurant/B&B for tourist or souvenir shops/ art gallery/ local craft shops or in use of resident by second person (in migrant).

4. Analysis and Discussion



Figure 2: Type A (left) and Type B(right)

The site visit revealed that all the selected buildings is divided into four separate typologies based on their structural characteristics and construction period. The selected buildings are categorized into A, B, C, and D. The type A is the building that are constructed before a century ago and having Malla or

Rana periodic architecture. The type B buildings constructed between 51 and 99 years ago that were less skillfully designed and having no more architectural details. Buildings of the C type are newly constructed using R.C.C. but having dachi eta facing and having enough freshly carved windows and doors that were copied from earlier times. And D-typed buildings were constructed between 20 and 50 years ago, using RCC. and large glass windows to give them a contemporary appearance.



Figure 3: Type C (left) and Type D(right)

Chart in Figure 4 elaborates the percentage of buildings available in the site according to survey. There are; 36% type A, 22% of type B, 21% of type C and 21% of type D buildings are available.

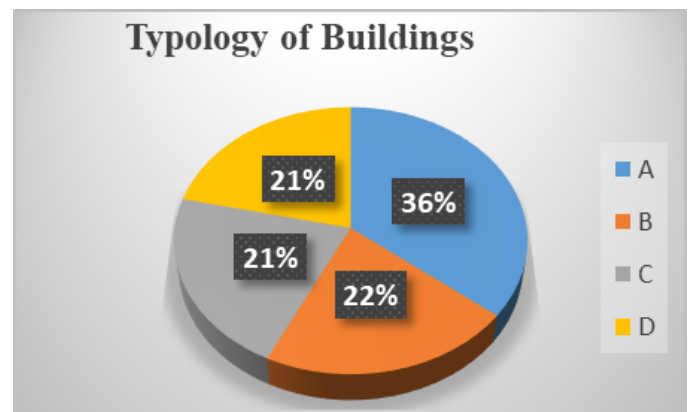


Figure 4: Housing Topology Distribution

The percentage of building typology is only gained by pilot study of the site. The percentage may be varied after detail study. Avoiding use of traditional craft and technology in physical aspect of structures and insufficient legal rules and regulations in a building is the reason of decreasing OUV of heritage area [13]. According to the concept, it can be concluded as:

- Typed D buildings having new contemporary materials in it, can impact in negative way on the OUV of the WHS. As D typed of building was not including traditional craft and technology at all. The construction of D typed is completely stopped now a days which is a better step

which is taken by the local government to control the negative impact on WHS.

- According to the construction period, the residential buildings are changing from type A to B, from B to D and D to C. Before 2005, there was no any rules oriented to the façade material and openings pattern while constructing or reconstruction of a buildings in such area. As the concept of buffer zone and core zone is demarcated after 2005, there is new rules made by government in reconstruction or new construction in the area. According to which, now a days, all new buildings falls under type C.

Similarly, from the the chart in Figure 5, it can be seen that, there is no any façade modification in Type C & D whereas in Type A and B, there are lots of façade modifications takes place in it. The modifications in façade materials, change of door/shutter, and roof style takes place in them. But vertical expansion is the main modification which is found in 70% of building (21% in A, 14% in B, 14% in C and 21% in D) at all. And all the vertical expansions are taken place as illegal modifications. And 35.74% (29% in A, 6.74% in B) of façade modification with new material can be seen that are in type A and type B buildings and 35.17% (7% in A + 7% in B + 14.17% in A + 7% in B) of modification in door and windows, 14.28% (7.14% in A + 7.14% in B) in roof type and 14% in material can be seen in the site. The phenomena can be clarified by the chart in Figure 5.

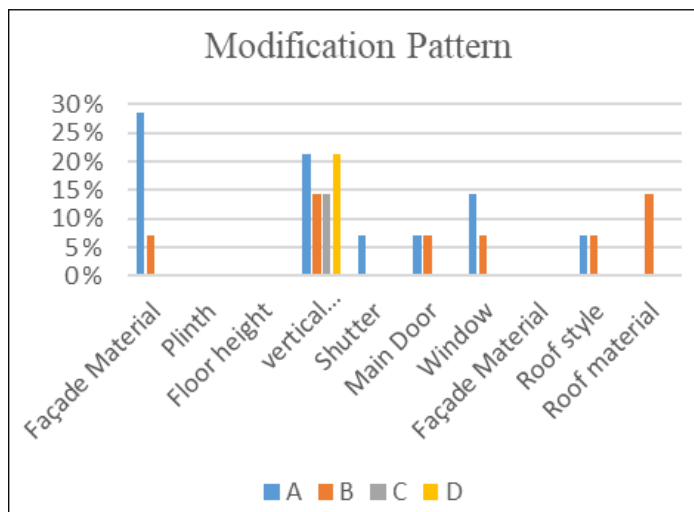


Figure 5: Modification Pattern Distribution

Judith claims that illegal construction in the buffer zone is another factor harming the OUV of the WHS and the buffer zone. And according to the Judith claim and data gained from site observations, it can be conclude as:

- Transformation with façade modification with new materials and fixture with similar material in old buildings are not a big issue but it is a kind of consolidate and strengthened the old structure from demolish and deteriorate. But vertical illegal construction appears to be a major issue that has to be managed by the local authorities. Otherwise, it can create huge negative impact on OUV of WHS.

The third phenomena takes place as transformation is the change of use of residential buildings in the buffer zone. The occupancy change through time is depicted in chart 3 which is shown below.

According to the chart, it can be seen that there is a very strong negative correlation between the residential building’s living occupancy and the passage of time. It indicates that as time passes, dwelling space is being used for other purposes in a buffer zone. Similarly, there are craft-related stores or galleries, which are in an expanding phase and have a strong positive correlation with time frame. Till the date, as time passes, the percentage of partially vacant rooms in the structure is reducing, indicating that space in buffer zones is worth more now than it was earlier and vacant spaces are going to be used in some other purpose rather than living by owner. Similar to this, the ratio of space used for conventional food and rent for a home continued to increase to this day [4]. Daily necessity stores were nonexistent throughout the first half of the year, but they are now also growing.

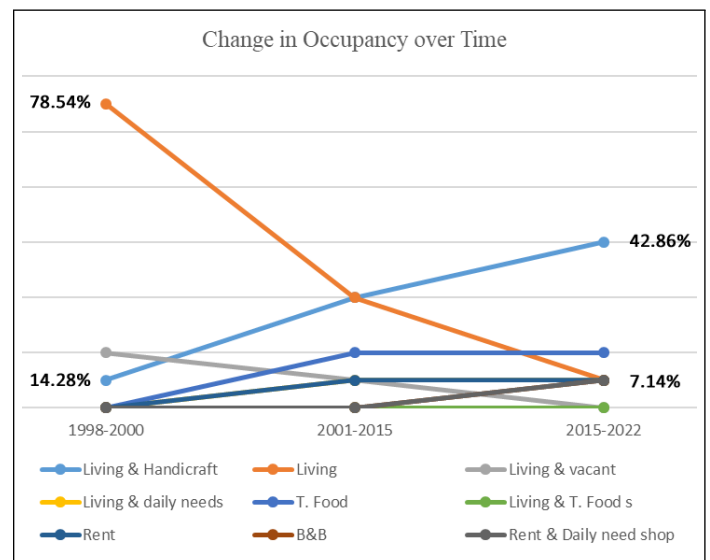


Figure 6: Building use pattern

From the chart in Figure 6, it can be analyzed that as the rent in living is increasing, the occupancy in traditional food shops and daily need shops is also in increasing ration or can be say as directly proportional to each other. In short it can be said as:

- Living and vacant spaces of residential buildings are inversely proportional to time frame.
- Craft related business is directly proportional to time frame.
- Traditional food business and rent to in migrant people to live takes place in first half of period and that phenomena is maintaining in second half time period. It means rent and traditional food shops are neither in increasing in quantity nor in decreasing after 2015.

Even though the occupancy of residential building is transforming with time, it is the focus on meeting basic necessities and the tourism sector that may be categorized as having a favorable effect on OUV as Judith clarified in Cairo.

5. Conclusion

The residential buildings in the buffer zone of PWHS are transforming according to the time towards economic development through business and rent. As this transformation did not change the daily life of local people, it did not affect the OUV of WHS.

From this research, it can be concludes as; few adjustments are required in accordance with the passage of time without harming either the tangible and intangible aspects of cultural heritage. Even though the survey was only conducted on a limited numbers of buildings, detailed survey is required to gain the actual result.

From the pilot study, the main transformation of residential building in buffer zone is analyzed as:

- Most of the physical transformation is taken place in A typed residential building.
- Residentially used space and vacant space are transforming into shop and rentable space.
- Physical and occupancy transformation is taken place to fulfill today's basic needs of local residents.

This is only a pilot study, there are many more impact factors in the site which can only be measured after detail research and analysis. The major term as occupation and literacy of local resident, migration, change of ownership may affect all the previously defined term that may change the result after detail survey and analysis. And as the result is gained by research, there may be the modification of local policy too.

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