



# ADAPTIVE REUSE OF HERITAGE BUILDING

**Ar. Shreya Chandrakar**

M.Arch (Second Year) Department of Architecture, Sharda University, Noida, UP, India

**Ar. Sandeep Singh**

Professor at Architecture Department, Sharda University, Noida, UP, India

## Abstract

India is a country with a history that goes thousand of years ago. Our ancestors have given us the most creative architectural heritage sites in the world. These heritage sites are broadly categorized into two forms.

The first ones are the sites that gained historical importance with time by their nature, scale, design and their original use to attract people.

The second ones are unlisted historic sites like Palaces and Havelis which are lacking their historical and cultural importance and have failed to attract people into it.

Hence it is important to preserve these heritage buildings by reusing them for daily functions. So that our upcoming generation should benefit and be aware of historic sites and where we have come from.

The purpose of this research is to provide a review factor affecting adaptive reuse and to develop a holistic approach to adaptive reuse strategies for heritage structures.

## Key Words

Heritage Site, Adaptive reuse, Sustainable, Historic Site, Heritage Value, Heritage culture, Site Value

## Introduction

Our country is dealing with the current struggle for environmental sustainability. Recycling has become a frequent solution. With the use of RRR i.e Reduce, Reuse and Recycle we can make everything sustainable including vehicles, boxes, bottles, plastics, glass even buildings[1][4][6].

Anything that is not recyclable is advised to be reused for the same purpose or used it as new ones. Same way buildings are also recycled they are reused to keep them alive. This method is called Adaptive reuse.

Adaptation of old buildings into new ones is not new[2][4][8]. Even in history, there have been various buildings where adaptive reuse was adapted. [3]

Even during wars, many historic buildings were used as hospitals and base camps. Even after industrialization, many abandoned factories were used as hospitals, schools even religious buildings were also used for other purposes. Nowadays royal palaces are even used as hotels and resorts, they have become famous among the people.[5][ 7][10]

## What is Heritage and its Importance

Heritage is something that we have received from our ancestors, from our past, to value and enjoy in present and pass it to upcoming generations[12].

Heritage Comprises of :

- Tangible- Historic sites, buildings, artefacts even objects from museums.
- Natural- Landscapes, trees, birds, animals, woodland, waterways.
- Intangible- Music, Sports, Dance, Crafts and traditions.

Heritage is important because it helps to shape our identity it becomes part of where we are. It also highlights our value and priority.[10]

Heritage gives clues about our past and how society is evolved. It helps to examine our culture and traditions it also enables us to create awareness about ourselves.

Heritage is a keystone of our culture and tradition it also plays important role in politics, business and society. Preserving a Heritage site is important because its important to preserve artefacts of the past it plays an important part in the Heritage council's work to encourage the local community to participate in the development and conservation of heritage. Protecting our heritage sites provides a basis for economic development in agriculture, tourism, entertainment and business[12].

## Introduction to Heritage Conservation

Heritage conservation is not just a subject but it's a "movement". It helps us realise the importance of historic sites in the contemporary world, it's about spreading awareness and preserving it in possible ways. It justifies them by creating their original importance, it is about giving new life to these abandoned structures.

Conservation is both past and future-oriented.[7]

In this era where architectural standards are declining, conservation is bound to continue past building legacies into the future. Here artefacts can be seen to be capable enough without losing their essential quality. Conservation is economical and essential. It's something more than aesthetics. It also touches on our basic values.[7]

The type of damage building has gone through different conservation ideas are undertaken.[8]

Heritage conservation seeks to increase the value of building by preserving its original form, architectural elements, their restoration, recreating scale period and character.[9]

The focus is to avoid building and construction but to preserve and enhance the existing elements and structures. Historic structures should be restored by inspecting the sites, identifying their cultural significance, their construction techniques and technology and also by understanding the type of damage and defect.[9]

One of the most useful techniques opted by the world to recreate and preserve historic sites is Adaptive Reuse.

## Different Approaches to Conservation

There are three major approaches to conservation

1. Preservation- It is part of preserving cultural property, preservation involves protecting heritage sites by controlling their environment to prevent decay. [1][2]  
So preservation includes control of humidity, light and temperature.
2. Restoration- It means the return of the original form which was known earlier without new materials. The main motto is to revive the original concept by preserving and revealing its historic value. Depending upon the condition of the building various restoration method takes place. [1][2]

Reproduction also comes under restoration like to replace missing items one must reproduce them to revive their original identity.

Reconstruction is also part of this example if part of a building is affected by disasters like fire or earthquake or any natural or man-made disaster, new material must be used to reconstruct it. [1][2]

### 3. Adaptive Reuse

At the time of conservation, it depends upon many factors such as:

- Historical Value
- Sociocultural Significance
- Physical Condition

Preservation & Restoration are only possible when buildings become tourist attraction or can survive the original purpose for which it was built. The building which does not fall into these two categories can be protected or preserved them is to keep them in active use i.e adaptive reuse. [1][2]

To retain old buildings when it's losing their importance, it's losing their original function, one has to adapt to conditions which are changing by retaining their new use so that they do not affect historic buildings.

It is necessary to maintain harmony and change in the built environment. Change is necessary to keep structures alive. The building continues to opt for a change in use in absence of old functions. [1][2]

#### Adaptive Reuse

Heritage conservation in adaptive reuse is not a new approach it was established in the 19<sup>th</sup> century. Reuse of historic sites and neighbourhoods is economically sensible it's a sensible way to conserve architectural heritage, by using traditional methods into it. It distinguishes preservation as an ideal way on the other end the goal is to make heritage sites more prolonged by retaining as much as possible.[7][8][10]

Adaptive reuse gives new life to a structure by converting them into something useful for surroundings like schools, hotels, hospitals, restaurants and many more.

Adaptive reuse is important because:

- It maintains cultural heritage  
In areas with historic sites adaptive reuse is a form of historic preservation. It restores cultural significant sites that are left to decay or demolish.[9]
- It slows Urban Sprawl  
Often builders choose land that is further outside the city since land inside the city is occupied by old buildings or is much more expensive. These gears the process of urban sprawl a term for expansion of urban areas, contributing to air pollution as well as other environmental impacts.[9]
- It creates a new community beacon  
Adaptive reuse is functional and beautiful by adapting the reuse strategy in the adaptive building allows the creation of a beautiful and unique structure that serves as a new cultural beacon in the city.[9]

Term adaptive reuse is made from "Adaptive" which means "capacity for adaption. This means a building or heritage site was once used for a specific purpose , has become abandoned, and is no longer serving its original form so it needs to be reused.

Reuse means "to use it again" as a word that defines a heritage site not only serves its purpose but also adapts new functions.[16]

The best way of preserving is to reuse it and give new life to it. Original use is generally best for heritage conservation.

Adaptive reuse is the best approach for architectural conservations. In this way, aesthetic and historic values can be saved by economic means and can be combined with contemporary structures.[15]

Old buildings have their importance. adaptive reuse is a process that adapts a new structure while retaining its original form this was developed to protect the historical and cultural building from demolition.

Adaptive reuse of historic buildings should have minimum impact on heritage buildings. New materials should be combined with old ones to create the most sustainable structures.[16]

The success of the reuse of structure depends upon what kind of adaptive reuse is suggested.

### Advantages of Adaptive Reuse

To conserve and preserve a historic site sometimes aesthetic and historical value may not convince the builder or contractor. There are also other benefits to consider in adaptive reuse.

We have several more advantages like Cultural, Social, Economic and Environmental.[5]

#### Cultural

Preserving old buildings helps in understanding cultural diversity, it creates awareness of heritage culture.

Culture needs to be saved and it should be contributed to identifying a place.

Culture and traditions also demonstrate themselves in architecture. Different culture contributes concept and growth of tourism. This place becomes a milestone to understand cultural values. [5]

#### Social

Historic buildings have the benefits of reusing them. Adaptive reuse can restore the heritage significance, it helps to retain their identity and make people aware of cultural or heritage sites. The future generation will get benefited from protected and preserved sites, it also includes heritage values. [5]

#### Economic

The concept of adaptive reuse is very economical. The cost of new construction is less in already constructed buildings, it costs only two-thirds of new construction. Old buildings are built with locally available material hence it can be utilized while restoring and readapting, this not only will create employment for local people but it will also reduce costs. [5]

### Different Approaches to Adaptive Reuse

Adaptive reuse approaches can be taken into three forms considering historical scenarios and approach toward housing:

1. To keep building for its **original use**.
2. To adopt building for **use change**.
3. **Façade retention**.

#### 1. Original Use

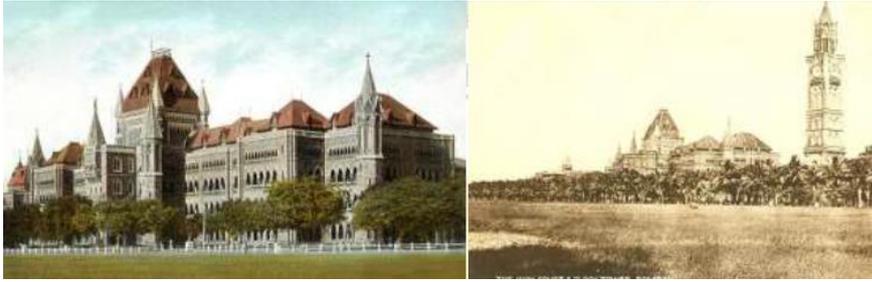
The best use for building is for the reason it is initially designed. It can be seen in religious structure such as old temples and churches . Building must be restored to use in its original form. Minimum interventions are taken to recreate original structures.

Bombay High court is perfect example of this

High court was used for over 120 years. Over the years buildings grew so much that their court spilled out into adjoining building , three buildings in court was functionally incorporated.

Rooms also got increased now 6 rooms grew to 24 courtrooms.

Admin offices and toilets also got increased, Building was revived to its original use.



## 2. Change in Use

Old functions updates with time. Here buildings form the reuse – change in use of building.

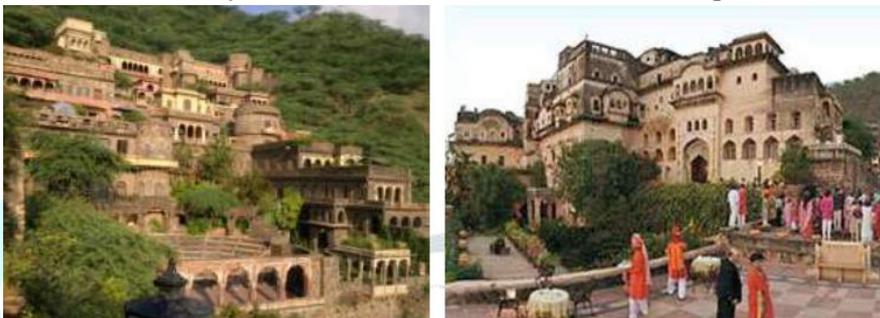
Example is Nirmana Fort Palace

It is located at Alwar district it was left abandoned at time of independence .

### Reuse of Nirmana Fort

Nirmana was residence of kings but now it works as five star resort.

There are 22 suites, each room has its own theme , retaining its original name such as Sheesh Mahal, Hawa Mahal .This was implemented to adapt traditional space to contemporary uses making place liveable. Local materials are widely used , but modern materials and techniques are also added wherever necessary.



## 3. Façade Retention

This approach is usually practiced in western countries. It includes partial demolition of building behind the façade and redeveloping it into new building . Façade Retention not only saves public face but act as a symbol for past.

Example:

Famous Architect Richard Rogers converted a fish market in 1875, into a dealing house .

Original hall has trading floors for 465 deals. In existing building Mezzanine has been inserted to provide space for particular area.

## Heritage and Adaptive Reuse<sup>[10][12]</sup>

Heritage can be defined as “something which is inherited from both previous and future generations”.

Heritage does not apply only to historic sites but it can be areas, land, landscape, and building, that have relations to the past.

Heritage also consists of culture, traditions, art, and materials that are used for buildings even the way they are u i.e construction techniques and materials.

A heritage built form has two categories to value these building processes.

First, it consists of built forms that have national importance such as the Red Fort, Qutub Minar, and Taj Mahal these buildings have gained extra importance due to the nature of their design and original form they have become tourist attractions today.

So restoration and preservation are very important. <sup>[10][12]</sup>

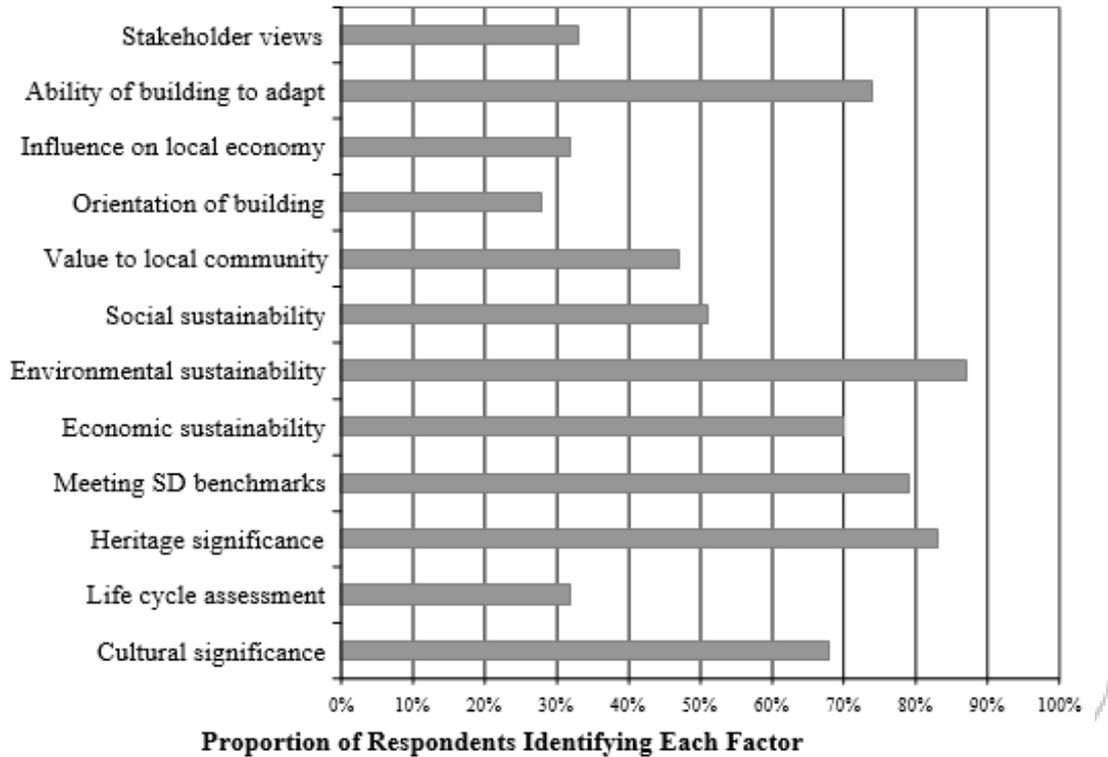
Second, it consists of built forms that have modest architectural values with limited historical values. So it can be further divided into two parts:

Built structures with architectural heritage have historical value where they exist in a particular city.

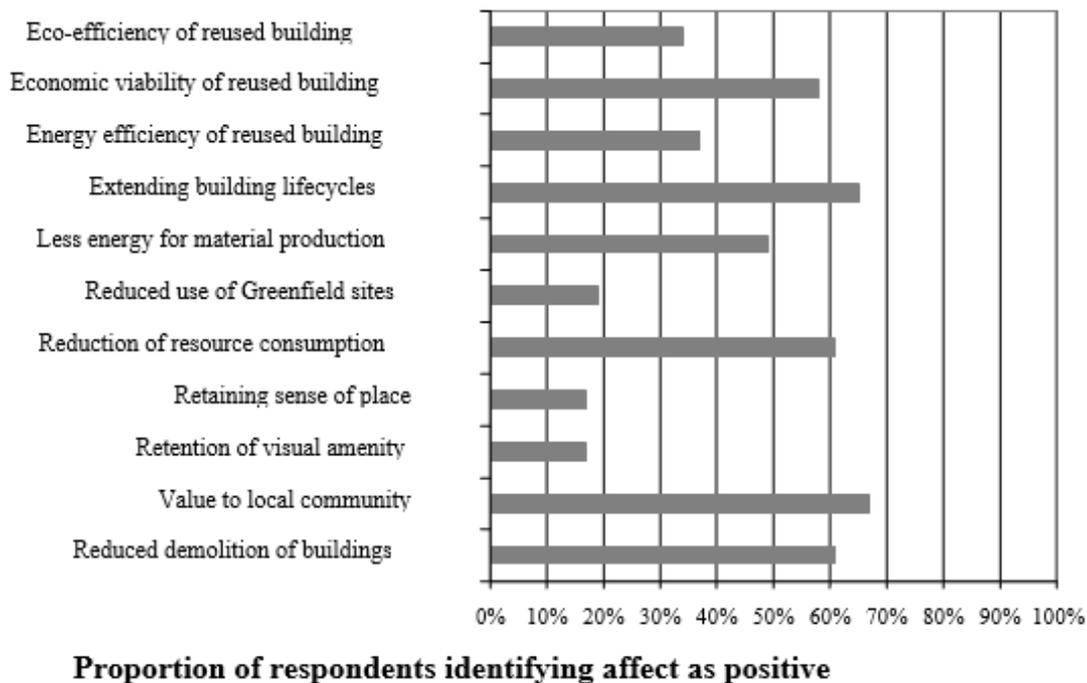
Havelis and palaces come under this category.

Limited architectural values come under this form. Factory sheds and abandoned mills come under this, they are not having architectural value, but they are also witnessing the change of technology in commercial areas. Built structures survive their original function so to save them is by keeping them active. Damage to heritage sites is due to a lack of awareness, alternative and financial support. An artificial and natural disaster is one among them. [10][12]

### Factors that affect the adaptive reuse decision process



### Sustainability objectives affected by adaptive reuse



## Issues to be considered in Adaptation

1. To maintain integrity and cultural significance of building

While reusing the historic site one must not impact its original cultural significance. Even if there is use of different material, buildings should not lose its original significance [16]

2. To maintain visual importance in regional context

While visiting the place original character of the building should not be affected, even after changes have made. Buildings should be associated with its location, and should be retained not observed.

Building should maintain a harmony with nearby surroundings. [16]

3. It should have compatibility with historic character

If buildings are reused new services such as wiring, plumbing needs to be installed, architectural features should not be spoiled. [16]

4. New Volume and finishes

Use of new volume, materials or finishes should have contemporary ideas, adding these elements should not be different from existing part of historic site, it should balance relationship with surrounding. [16]

## Conclusion

This paper offers successful adaptive reuse of historic building with minimum interference in existing design, forms and other interior elements.

It is not only important to retain and restore but also to adopt them giving new uses that are similar to original ones. New forms are based on old forms for adaptation of contemporary use. This paper also focuses on conservation of existing form and space.

Changes are more affected on interiors where building doesn't lose its historic integrity, whereas exterior changes are very minimum. When adaptive reuse is chosen intervention techniques may be made out, but historic cultural identity should not be missed out.

## References:

- [1] Ball, R. (1998). "Developers, regeneration and sustainability issues in the reuse of vacant buildings". *Building Research and Information*, pp.146-149.
- [2] Ball, R. (2001). "reuse potential and industrial premises: revisiting the regeneration issue in Stoke-on-Trent". *Journal of Property Research*, pp.97-100.
- [3] Bromley R.D.F., Tallon, A.R. and Thomas, C.J. (2005). "City Centre Regeneration through Residential Development: Contributing to Sustainability", *Urban Studies*, pp.2401-2428.
- [4] Bullen, P.A. and Love, P.E.D. (2011). "Factors influencing the adaptive reuse of buildings", *Journal of Engineering, Design and Technology*, pp.32-46
- [5] Bullen, P.A. and Love, P.E.D. (2011b). "A new future for the past: A model for adaptive reuse decision-making". *Built Environment Project and Asset Management*, pp.
- [6] Bullen, P.A., and Love, P.E.D. (2010). "The rhetoric of adaptive reuse or reality of demolition: Views from the field". *Cities*, pp. 215-224.
- [7] Bullen, P.A., and Love, P.E.D. (2009). "Residential regeneration and adaptive reuse: Learning from the experiences of Los Angeles". *Structural Survey*, pp.351-360.
- [8] Cooper, I. (2001). "Post-occupancy evaluation-where are you"? *Building Research and Information*, pp.158-163.

- [9] Department of Environment and Heritage (2004). "Adaptive reuse". *Commonwealth of Australia*, Canberra, Australia.
- [10] Douglas, J. (2002). "*Building Adaptive reuse*". Butterworth-Heinemann, Woburn, United Kingdom.
- [11] City of Perth (2011). *Heritage Program*. Accessed 17<sup>th</sup> May 2011, available at <http://www.perth.wa.gov.au/web/Business/Heritage-Program>
- [12] Hamer, D. (2000). "Learning from the past: Historic districts and the new urbanism in the United States". *Planning Perspectives*, pp.107-122.
- [13] Krippendorff, K. (1980). *Content Analysis: An Introduction to its Methodology*. Sage, Newbury Park, London.
- [14] Kvale, S. (1996). *Interviews: An Introduction to Qualitative Research Interviewing*. Sage, Thousand Oaks.
- [15] Latham, D. (2000). "*Creative reuse of Buildings*". Donhead Publishing Ltd, Dorset, United Kingdom.
- [16] Love, P.E.D., and Bullen, P.A. (2009). "Toward the sustainable adaption of existing facilities". *Facilities* pp. 357-367

