IJNRD.ORG ISSN : 2456-4184
INTERNATIONAL JOURNAL OF NOVEL RESEARCH AND DEVELOPMENT (IJNRD) | IJNRD.ORG
An International Open Access, Peer-reviewed, Refereed Journal

FROM RUINS TO RENEWAL: PALIMPSESTIC NARRATIVES IN ADAPTIVE REUSE

Adaptive Reuse as an Architectural Palimpsest

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Abstract : The growing demand for new buildings overshadows the idea of reusing existing buildings which will eventually become dilapidated and dysfunctional. Although this may pose many threats, it also holds a lot of potential to transform into something functional and useful through the process of adaptive reuse and revitalization. This paper focuses on the different aspects of revitalizing the abandoned building by exploring different adaptive reuse strategies. The concept of palimpsest is then introduced and discussed in detail pertaining to different aspects in architecture.

It further investigates on how adaptive reuse can be viewed through the lens of Palimpsest that can inform design decisions for efficient architectural outcomes. Through the analysis of case study emphasizes the relationship between adaptive reuse and palimpsest and highlights the importance of preserving the historical heritage. The outcomes of this study will provide an overall understanding of how adaptive reuse projects can effectively incorporate historical context and cultural memory with a sense of place while meeting contemporary needs.

Keywords **- Revitalization, Abandoned buildings, Palimpsest, Adaptive reuse.**

1. Introduction

There has been a significant growth in the number of buildings that have become deteriorated or abandoned due to their inability to adapt to a certain program or function, resulting in negative environmental repercussions. In most cases, the kinds of buildings that are subjected to these conditions are industrial, political, heritage and community buildings. Although all of these buildings are of equal importance, the heritage buildings hold significant history and cultural background to it. As a result, adaptive reuse for such buildings poses major significance which will not only physically revive the building but also preserve the historical aspects associated with it.

2. What are abandoned buildings?

Abandoned buildings refer to structures that are vacated or left unused for an extended period of time. These buildings can be found in both urban and rural areas and range from residential homes to commercial properties.
An abandoned property is usually recognized as a significant barrier to the revitalization of municipalities of various sizes. (Robert W. Burchell, 1981; Robert W. Burchell, 1981) Describes abandonment as a disease that becomes a feedback mechanism that accelerates and perpetuates community decline.

2.1 Causes of Building Abandonment

Building abandonment may occur due to various reasons, often deriving from a combination of social, economic, political, environmental and regulatory factors. Although used buildings are often vulnerable to deterioration over time, buildings that are under construction or that are built and then remain unused are also seen to have been abandoned.

Abandonment links location, physical and market obsolescence
Location is an important factor that affects the value of a building. The farther the location, the more difficult it is for accessibility. Location and situation surrounding the landed property are some of the determinants of its capital or rental worth.

Physical obsolescence occurs when the physical state of the building is at a point where it is incapable of being used profitably without a new investment that exceeds the property's potential market value.

Market obsolescence occurs when a building's size or layout is such that, given its location and physical condition, it is no longer appealing to potential buyers or tenants. Some of the examples are Old industrial properties and small, single-family row houses in cities.

2.2 Causes of Decay in Structures

Gravity is the most universal cause, followed by human actions and various climatic and environmental influences. Natural agents also include disasters such as earthquakes, volcanic eruptions, lightning-caused fires, floods, storms, landslides, and so on. Animals, birds, insects (termites), trees and plants, fungus, moulds and lichens, algae and moss are examples of biological and botanical causes. Wars, changes in ground levels, atmospheric pollution, vibration damage, fire, theft, vandalism, poorly managed tourists, and so on.

2.3 Effects of Building Abandonment

Any property abandonment is simply not in use, but when it takes place in a community where people live and work, it can be more harmful than the wastage of resources. The following are the effects of building abandonment:

Effect on the property values of neighborhood: The presence of abandoned properties in a neighborhood significantly decreases the market value of surrounding occupied properties.

Effect on public safety: Abandoned properties are frequently used as venues for criminal activity like drug trafficking which poses threat to the public.

Effect on public health: Abandoned properties are subjected to infestation by rats and other organisms and are prone to become illegal dumping sites for garbage and construction debris. Abandoned industrial sites may cause health hazards by exposing the neighborhood to toxic substances that contaminates the environment.

Effect on fire safety: Abandoned buildings are prone to catching fire that can spread to the surrounding areas in the neighborhood causing fire accidents.

Effect on taxpayers: Local taxpayers are susceptible to substantial expenses to secure, clean, or demolish abandoned properties, to take legitimate control of properties, and to cover the costs of the additional police and fire services they require.

Effect on Architectural heritage: Improper maintenance of abandoned buildings can lead to deterioration over time and if they are historically or culturally valuable, the effect is both tangible and intangible. This deterioration can result in the loss of distinctive architectural characteristics, styles, and construction techniques that are integral to a region's architectural history.

Effect on Cultural memory: Abandoned buildings are often associated with its past stories and memories which are often forgotten and lost as a result of their abandonment. As the memories fade, the value of the building also diminishes with time which is in turn perceived as a lifeless structure with no purpose.

3. Adaptive reuse

'History' and 'Past' reminds us of our lives and how they have evolved over time. The primal need for familiar structures and locations to serve as reference points ties us to our History and Past through our old buildings, neighborhoods, and landscape to create a unified picture of our environment and lives.

M.K.Gandhi says that everything changes continuously and history is nothing but a record of changes. If there had been no changes in the past, there would be no history to write about.

The inevitable transformation of the structures that have been built, utilized, reused, rebuilt, conserved, abandoned, or demolished offers a history of the buildings that humanity has created. The resuscitation of innumerable historic structures and historic locations, which provide us with a foundation, a sense of continuity, and a sense of safety that can only be acquired and followed, will help people get through the challenging times ahead.

One such concept is adaptive reuse, which serves as a link between people's past and future for the buildings or spaces they have created, lived in, experienced, rebuilt, and left. 'Adaptively' repurposed buildings/structures/spaces should retain historic values while also allowing for new technologies and interventions for the future.

3.1 Origin of Adaptive reuse practice

Adaptive reuse has been in existence over many ages. During earlier times, the buildings were reused for newer functions. For instance, the French revolution religious buildings were used for industrial and military functions. It was least recognized in terms of theory and was simply in practice without any awareness. Kenneth Powell, an architectural historian, critic and consultant says that the driving force behind the reuse of these buildings were Functional and Financial aspects. (Powell, 1999)

Sherban Cantacuzino, a Romanian architect in the 20th century, recognizes adaptive reuse as an independent practice of its own regardless of any preservation or conservation phenomena. He said that the buildings have persistently adapted to new functions that has enabled to derive a sense of stability and continuity from their physical environment over generations.

"When buildings were abandoned, pilfered for materials or condemned for political reasons, the process of destruction was often slow and incomplete to the effect of the modern bull-dozer". (Bie Plevoets, 2019)

3.2 Objectives of Adaptive reuse

The primary objective of the adaptive reuse of a building with a historic-cultural or otherwise distinct specialization is to create an intersection between the past and the present's styles and potentials, that is, dynamics that created the past and potentials for developing the present-day diversified culture. While adopting new architectural and interior programs to existing structures, interior and structural renovations must protect structural integrity whilst adding aesthetic values for novel demands.
As Derek Latham described it, adaptive re-use or re-functioning is crucial because it allows us to live in the past while simultaneously providing new design ideas. As a result, reusing and comprehending the essential concept emerge as a solution. (Latham, 2016)

3.3 Aspects of Adaptive reuse

The aspects which are taken into account while reusing a building for a new function are mainly Typology, Function, Scale and Time period. The typology and the existing function of the building determine the new function of the building. The scale of the building dictates the space planning and the user occupancy for the new function.

The adaptive reuse practice is dependent on the chronology of the building typologies. For instance, during historic times, the residences used to be forts and palaces where in the residences now are inclined towards modernism. The former adapts into hotels and restaurants and the latter adapts into suitable functions in accordance with its space.
Therefore the time period and the scale of the building can largely impact the function and typology the building will adapt to. Over a period of time, the buildings have adapted to different functions as the historical buildings comprises forts and palaces, the medieval buildings comprises warehouses, industries and factories and the modern buildings comprises residential, institutional and commercial buildings.

3.4 Adaptive reuse in an urban setting

As the cities are growing rapidly, there is a blind rush to create and modernise new buildings while the old buildings are either destroyed and replaced or dilapidated which consequently erases the urban memories and denies a sense of continuity. This is where the Adaptive reuse place a significant role.

Rapid urbanization has adversely affected the physical environment along with its historic significance. The fact that we are losing the historical setting, buildings, monuments and other cultural artifacts adds to the need of profound importance in protecting them.
In this modern era, the revival a building in an urban context and transforming it to a more relevant building in terms of its need and function is still at a superficial level.

As we move towards urbanization, the need of the historical and heritage buildings is increasing, transforming the practices like adaptive reuse to adapt those buildings to a modern function. But in the case of a building from the modern era, the level of connection to its history is indirect though the connection to its past is significant and hence the enlightenment on assigning a relevant function through the adaptive reuse approaches is crucial.

4. Palimpsest

The concept of palimpsest is not new to the architectural discourse. According to the Oxford dictionary, the term 'palimpsest' is derived from the Latin word 'palimpsestus,' which in turn is derived from the Greek word 'palimpsestos,' that means 'scraped again'.
Etymologically, it is a parchment that has been rewritten multiple times that displays traces of the older texts. Since parchment is made from a material derived from animal skin which was very expensive during the 7th and 9th century, most of the manuscripts were reused by scraping or washing off the written texts. When printing became popular in the 15th century, parchment was replaces by paper for most of its uses. There were only few manuscripts that were made of parchment and especially during renaissance, only some artists appreciated the working properties of the material.

Later during the 19th century, some historical texts of palimpsest were restored using chemicals. This modern technique has proved to be able to retrieve the lost texts readable again during the 20th century. Through this technique, only a number of manuscripts survived as palimpsests which depcits the historical relevance of recycling the parchment. Economic drive is what that pushed the concept of palimpsest to preserve the history and culture. Considering the future of the architecture, it is more relevant to correlate the aspects of economy, culture and reuse by basing this concept.

4.1 Palimpsest and architecture

Andre Corboz, a swiss urbanist and an architecture historian, suggests perceiving the land as a palimpsest that comprises of a structure with numerous layers dating back to the ancient times. He says that the land is constantly subjected to changes and is rewritten and erased by its inhabitants. He formulated the theory of territory which states that the palimpsest is metaphorical in the sense that the earth's surface works similar to that of a parchment sheet that comprises the inscriptions and traces that are left behind by the society in which some are maintained and others are erased.

Architects such as Peter Eisenman, Bernard Tschumi, and Rem Koolhaas use the term 'palimpsest' metaphorically to describe a building that has been written over, partially wiped, and then rewritten, with each rewriting leaving traces behind. This implies

that buildings have numerous layers that preserve aspects from their historical past. Depth and meaning in architecture can be obtained through interpretation and comprehension of these traces.

Architecturally, palimpsest is a practice to remodel and tear down the existing structures while leaving behind the traces which may be interpreted and employed to influence the designs of the future but the catch here is to balance the old and new by considering the traces of the past, often known as palimpsests.

4.2 Palimpsestic buildings

When we look at the buildings through the lens of palimpsest, we can recall the ideas of preservation, restoration, conservation, reuse, change of functions and transformation. When we talk about reuse, the founders of the theory of preservation, William Morris and John Ruskin must be mentioned.

As discussed in the earlier chapter "Evolution of theories", William Morris believed that one should never try to restore a building, that restoration was a lie. John Ruskin has also expressed the aspect of time in relation with buildings. Today, the architects like Peter Eisenman and Bernard Tschumi have viewed the idea of palimpsest as a way for them to relate to the site.

Conceiving the buildings as palimpsests means to conceive them as processes. Buildings are subsequent to time and are constantly subjected to changes as the people who inhabit them are also changing. The St. Peter's Basilica (1506-1626) in Rome is a stark example of a palimpsestic building. The church has undergone numerous transformation for over a period of almost 120 years where an army of architects such as Donato Bramante, Michelangelo, Carlo Maderno and Gian Lorenzo Bernini have worked on its construction. The long process it went through had many additions and subtractions. The architectural design in this context must be interpreted as a "process of remaking the existing building through its changes rather than making".

4.3 Palimpsestic details

The view of Palimpsest in buildings can be anatomized into the smallest of details where the detailing is essentially about incorporating different materials. Palimpsest in details addresses the quality of natural materials through the aspects like the ageing of the material, the influence of time and nature on the material where it is subjected to "weathering" and therefore emphasizes on the reusing ability of the building material. Tectonics is the art of construction and crafts that builds a relation to the scale of detail.

Kenneth Frampton, a British architect and a critic, gave an overview on the tradition of tectonic architecture in his book Studies in Tectonic Culture. He says that the materiality also touches upon atmosphere. The theory that deals with this is known as phenomenology that talks about the experience of space.

As mentioned earlier, the palimpsest evolved from a necessity to recycle the old expensive parchment. In architecture, there exist a similar phenomenon called spolia, which addresses the necessity of reusing older materials due to its economic and cultural aspects that led to the material scarcity. The term spolia originates from the latin word "spolium" and the use of it became popular during the late period of Roman architecture but also in Late Antiquity, the Middle ages, the Renaissance and further beyond.

The use of spoila recalls the collage technique which is a collection of various things. Perceiving the idea of collage as palimpsest, one must be conscious on the difference between the two because not all collages are palimpsests. A collage can be a superimposition of unrelated layers and it is a graphic model with much more of an experiential aspect. In contrary, a palimpsest comprises layers that are in dialogue with each other and there is a reciprocatory affinity that enriches the both in a sense that 1+1=3 which implies that the layers, through their interaction, create a more profound and unique relationship that is greater than what each layer can achieve individually.

4.4 Palimpsest in an urban context

In an urban context, the transformation of cities is inevitable and only few authors such as Aldo Rossi and Kevin Lynch emphasizes on this transformation of the old cities and the presence of the past.

Many historical cities have resembled the concept of palimpsest. One stark example of this would be the city Troy where over a period time multiple cities have been built upon one another due to its history of battles and destruction. Kurt W. Forster describes that working with the past is evident and obvious in urban context.

"Urban architecture always stands in relation to earlier building activity. New and old construction constitutes reciprocal identities; planning for the future and recovering the past occur in communicating vessels."

He further says that the city rome used to be a paradigm for the urban life. He describes it as "a continuous cycle of construction and destruction occurring on one and the same ground throughout her history accumulated layer upon layer as ancient structures became buried in their own rubble and new ones rose over them". Over time, rome has become "several cities" through rebuilding and renovation. Till today, the essence of the past is seen to be preserved through its ancient structures. And therefore, it is perceived as an indecipherable labyrinth.

The drawing of the temple of Vespasian in Rome by the architect Giovanni Bttista Piranesi depicts the multifold layers of history that the rome holds. It portrays the half-buried remains of that temple conveying another interval in time. Lynch in his book, What Time is This Place? Has touched upon the juxtaposition of the old and the new in this context.

"We are familiar with the visible accumulation of historical events. The juxtaposition of old and new speaks of the passage of time, and occasionally the contrast is eloquent." (Lynch, 1972)

Industrialization in the 19th century has led to some morphological changes but also left behind some traces of the Second World War. Therefore, the fact that the cities transform is persistent and they remain as examples of a continuous process of creation and recreation as time passes by.

4.5 Role of Palimpsest in Preservation and Adaptive reuse

In recent times, architects try to strike a balance between modern interventions and preservation of the past, which makes the use of palimpsest more relevant as a methodology to understand the complex relationships of the site. This can express what has been preserved and will add more depth and meaning to how we perceive the buildings. Most historic buildings are irreplaceable in the sense that they hold many nostalgic memories that allows to reminisce the past. Though such buildings are often perceived to be endangered, they should be preserved instead of letting them decay.

The very idea of preserving these buildings can originate from two aspects. Firstly, the focus is in the interest to preserve meaningful architectural elements such as styles, crafted details and quality of work as it comes from the place of fear that the new buildings will become equivalent to the existing buildings. And Secondly, older buildings bring in a sense of emotional connection and thus they are preferred to be preserved in order to maintain a connection from the past rather than acknowledging the contemporary architecture that is prevalent today. This may contribute to a city's identity and bring in a sense of place and therefore architects must advocate to the fact that the historic buildings need to be preserved through the process of restoration, rehabilitation or adaptive reuse.

To give a new life to an existing building, there exist many approaches that goes far beyond restoring it to its original state while some may neglect the time factor and transform or re-use a building for the sake of preservation. In order to reveal the old and the new layers, understanding that the existing building can provide the principles and set a basis for appropriate interventions is of utmost importance.

4.6 Approaches for interventions in Adaptive reuse

Robert Klanten and Francoise Astorg Bollack formulated different strategies and methods to utilize existing buildings that hold the potential for possible architectural interventions through the exploration of palimpsest as a design method.

The add-on approach utilizes future interventions to build upon the existing buildings, structures, traces of remains or ruins where the palimpsest exist. This can include additions that can enlarge the existing space of the building or transform how the initial building works altogether. The addition depends on the existing elements such as circulation and structure which forms a dialogue with each other and imposes itself on the traces. With this approach, new spaces can be introduced that demonstrate how the additions in future work with palimpsest in unpredictable ways.

The wrapped approach preserves the palimpsest of the building, artifacts, ruins or fragments through the provision of a protective layer. The interventions can be of a series of surfaces and elements that revolves around palimpsest. Through this approach, designers can create spaces that create an interactive experience into the historical layer without disrupting the new interventions.

The weave approach weaves new interventions in and out of the building which are often unrecognizable between the new and the old. Through this approach, the architects can erase, alter, restore the existing elements or even replace them for new interventions. In order to preserve the traces, changes can be done in the internal organization that allows for possibilities of new interventions.

The insertion approach inserts layers of new elements onto the existing buildings and structures which reveals, hides or highlights different intentions. This approach contrasts with the existing building to emphasize history and to centralize the structure in its space. It can alter or change a building by adding new elements or sections that can even erase others to form a dialogue between the old and new.

5. Case study: Neues Museum, Berlin, Germany

Neues Museum, a place for Art and Science, was built by Fredrick August Staler for the King Krendrick Wilhem II of Prussia in Berlin, Germany. Initially, it was built as a three storey neoclassic building with two internal courtyards and a monumental stair. It showcased various works from different civilizations. The initial design was incorporated with many artifacts such as egyptian, greek and roman columns, frieze and plaster reliefs.

During the Second World War, the building was destroyed to an extent where it lost one of its courtyards and the main staircase. Post this; David Chipperfield was assigned to reinterpret the building. The reconstruction was done in such a way that it was so subtle and easily identifiable with the traces from the past. Instead of recreating the building, Chipperfield abstracted the original building using new materials while retaining the scale and proportions from the existing building as references from the past. His interpretation holds various layers that link the old and new while preserving the spirit of the place. The new addition of the main staircase was subtle and modest due to its materiality. It mimics the original volume of the existing staircase without entirely recreating it.

The design considered the palimpsest that was prevalent to that context. Staler brought in the concept of palimpsest using Egyptian, roman and green elements within the original design. He did not utilize them as just decorative pieces but as structural elements that created palimpsest with the traces of the past. Chipperfield followed the same approach where he considered the palimpsest in the interior elements which is evident in the design where a part of the building's surface is peeled off to depict the layers of its construction. He discreetly added new materials by creating a contrast that works with the palimpsest.

The museum embodied a collective memory of different layers involved in the building. It was as if the original building was utilized and placed alongside the new elements. Through a series of reveals and insertions, the juxtaposition of the old and new is seen and the memories of the war are felt. And therefore, this museum is a stark example of how through interpolations with the past and new insertions, different layers are revealed without disrupting the narratives of the past.

6. Conclusion

In conclusion, the idea of correlating the palimpsest with the existing adaptive reuse strategies will largely impact the design decisions and paves way for a better design approach that could deal with both tangible and intangible aspects. Although we see ruins from abandoned buildings as a threat to the environment, it may have potential to transform itself into something beautiful and through palimpsest; the traces of its imperfections are retained only for us to reminisce.

Every building is doomed to become a ruin. Auguste Perret said, “Architecture is what leaves beautiful ruins”. (Auguste Perret , 1935)

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