

# Ephemeral Architecture: In Between Permanence and Impermanence towards Sustainable Architecture

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## Abstract

The arrival of the agriculture period has led to the evolution of architecture from the nomadic and shifting mode into permanence. Ephemeral is a state of lasting a very short time. It is also considered as portable architecture which existed before the agriculture period when the humans lived as hunters and gatherers. As time goes by, permanence has become a new mode and the fundamentals of architecture to most people that understand architecture. This paper is conducted to present an understanding of definition, interpretation and application of ephemeral in architecture in between permanence and impermanence. The paper has reviewed and analyzed the definition, interpretation and characteristic of ephemeral in architecture according to the historical and modern perspective. Besides that, an investigation has been done to determine the role that permanence plays in defining architecture and the role of ephemerality might plays within the realm of architecture. Literature review and case study are the primary and secondary data of this paper. As a result, ephemeral architecture has a significant role in built environment and sustainable architecture. By the time technology such as industrial building system and rapid prototype with 3-dimension printing construction progress, architecture has experienced sustainable growth, become flexible and resilient with demand and context. The term will not seize the general idea of architecture as an object of permanence since the static, stable and the permanent are all critical. The mobility, portability, transformability, the inflatable and the ephemeral are the essentials of stability and permanence.

*Keywords:* ephemeral, sustainable, flexible, resilient

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## 1.0 Introduction

Ephemeral is defined as a state of lasting a very short time (Oxford University Press, 2013). In history, ephemeral architecture exists before agriculture period when the humans lived as hunters and gatherers. They lived in a nomadic mode, shifting from one place to another in groups due to the weather. Their architecture provided a modicum of comfort while allowing maximum mobility, freedom and flexibility. Temporary, portable and ephemeral are the characteristics of these simple structures which allow them to shift easily (Chappel, December 2004). The arrival of the agriculture period has led to the evolution of architecture. The architecture incorporated permanence due to the evolution of human activities which were based on agriculture. This activity has enabled them to establish fertile plots of land and provided a reliable place to spend in the winter. Permanence has become a new mode and the fundamentals of architecture to most people that understand architecture. This scenario has defined ephemeral architecture as a class of buildings designed to be distinguished by impermanence, and its physical departure from the site (Chappel, December 2004). It is crucial to discuss topic as the architecture is dynamic and progressive in relative to technology, sociology, economy and politics. A concrete perspective on ephemeral will develop the field of architecture to be flexible and resilient due to time and space.

## 2.0 Statement of Problem

From the abovementioned statement, Brian D Chappel also highlighted an issue of ephemerality of architecture in order to clarify the term, definition and interpretation of it. He has documented survey examples from historical and current works that are related to this characteristic. Event such Architecture World Expo that yearly been held by different countries is the example of ephemeral architecture which had been erected seasonally and within a certain period of time. He also added an extensive discussion of the definition and examples that should provide a clear picture of what will constitute ephemeral architecture from this point forward. Generally in current time, ephemeral might apply to a building which can be moved or lighter in impression or seem fragile in design. This scenario has prompted further discussion to bring some rigor and uniformity about ephemeral qualities of architecture. It is important to question particular terms and issues that include adaptable, portable, sustainable and prefabricated architecture successfully respond to diverse of sites and be part of permanent architecture.

### 3.0 Aim and Objective

The aim of the paper is to present an understanding of definition and interpretation of ephemerality in architecture in between permanence and impermanence. The understanding could be applied in design application and solution of demand-based architecture in various aspects.

In line with this aim, the objectives of the paper are listed below:

- To review and analyse ephemeral definition, interpretation and characteristic in architecture according to the historical and modern perspective
- To investigate and determine the role that permanence plays and the role that impermanence might play within the realm of architecture.

### 4.0 Methodology

Both primary and secondary data were used. The primary source of data was done through precedent study. The secondary source of data involved the analysis of theoretical frameworks through literature review. This method will be analysed through the ephemeral definitions, characteristics and application from the time and cultural aspect. From this method, the data will be collected and analysed.

1. Literature Review
2. Precedent Study

### 5.0 Literature Review

#### 5.1 The Definition

The term ‘ephemeral’ originates from the Greek word *ephemerōs* (epi-“upon” and *hemera* “day”) which means as “lasting a day, daily” (Barnhat, 1981). It appeared during the 14<sup>th</sup> century as a description for a daylong fever in English. It has been applied generally to anything with a short-period presence. Brian D Chappel stated in the chapter “a definition” that ephemera is abundant in nature and their transitory nature typically follows seasonal or other natural rhythms. From the changing of the seasons to the phases of the moon, ephemera acts as clues speaking of the on-going changes occurring in the world. The term proves appropriate for the transitory beauty of the nature and the arts due in part to the world’s pronunciation, which carries a pleasant sensibility (Chappel, December 2004). He disagreed with the term of passing, short-lived, transient and fugacious as synonyms of word “ephemeral” because the terms focus on time or movement but fail to express the definition of temporality, lightness and beauty.



Figure 3: Laugier’s famous rendering of the first architectural idea. Branches lie across tree pillars (Chappel, December 2004)



Figure 2: This ephemeral tipi of Native American Indians of North Dakota appears to be the second idea in architectural design (Chappel, December 2004)



Figure 1: Suburban nomads on a weekend trek stake out a front yard with an assortment of modern nylon backpacking tents (Chappel, December 2004)

As seen in Figure 1, the picture shows us the relation of architecture and nature in early age. This supports the statement of Chappel in defining the term ‘ephemeral’. Figure 2 shows the evolution of architecture with the passing of time and culture but still in relation with nature.

The definition of ephemeral suggests that ephemeral architecture as a building that identify in terms of time rather than through space, form or function do exist. Their existence through their brief connection with their environment is in the same way as plants, insects and art. A temporary tent can be represented as man's first architectural work as ephemeral architecture. Primitive Laugierian is the example of ephemeral architecture in early century (Figure 1). It was built by draping a skin or leaves over a branch as structure. The structure is simple and easy to erect to keep out rain, provide shade and efficient for a hunter or gatherer where it provide mobility. The structure gradually became complex over time and not always retain its mobility.

The arrival of agriculture has made the architecture generally became permanent. Although the socio-economic changed at the current time, the architecture is still vernacular in design like the tipis of the American Indian (Figure 2) and yurts of the Mongols among many others as the tradition of primitive tents living.

In modern days, the ephemeral architecture evolved into several designs and structures. Tents have been interpreted in contemporary design for backpackers and those used in community events such as local fair (Figure 3). Another example that is similar is pneumatic structures which pioneered in the 60's for impermanent events. These examples represent the same characteristic of impermanence but no term identifies these structures as a cohesive group, distinct and unique unlike plants and insects. These examples are no longer related closely with nature as ephemeral architecture in the early ages.

## **5.2 Nomadology and Nomad Thought**

At the beginning of the twenty-first century, architects work in strategies and diagrams had indicated a revived interest in the model of nomadism as it relates to architecture. Cowan suggested in his thesis that nomadism and nomadology can be connected to the strong movements associated with ecology and environmental awareness today (Cowan, 2002). This is highlighted with lived bodily experience by human and nature, empirical scientific perspective of ecology by human and interest in low energy, low impact and ephemeral dwelling which shows the interest of human connection with nature.

Architecture, tents and nomadic architecture have become symbolic of cultures and peoples who seem incalculable, chaotic and hence unpredictable. The characters of unpredictability, ephemerality, unexpected or sudden movement and 'tribalism' all have an unsettling effect on sedentary people. Nomadology provided the methods for deconstruction which challenges established control as a tool of political and architectural resistance. It is being dynamically portable, adaptable, and temporary and conducted by members of kin or tribe.

## **5.3 Architecture in Motion**

The term of ephemeral and ephemeral architecture also can be discussed in the motion aspect. In the early ages, people are always in motion. Moving from one place to another is the culture to fuel the demand of finding basic needs such as shelter and food. Human's first primitive structures were portable. This is due to their transient nature but recently it has been recognized as architecture comparative. First portable buildings can be known by familiar traditional forms of tents, tipi and yurt which utilized sophisticated construction techniques. The techniques are still being used in today's architecture. The built environment is shaped by the shift of technology; economic and political across the world. It will prove that architecture is essential and resilient in terms of environmental, economic and social considerations as architecture can and respond to these changes.

Max Warren in his study stated a constant forward thinking development of the architectural industry as a whole ensures by the share-and-share alike relationship between impermanent and permanent architecture (Warren, 2010). He said that, the primary function shall remain the same as a similar permanent facility, all activities accommodated must be supported in the utmost in consideration of the length of time the building occupies a particular site. Portable, adaptable and nature should not be compromised. It means that the occupants should not have to suffer inferior standards due the ephemerality and adaptability nature of the building. He suggests the portable architecture must have the same sense of place as a permanent building does. He also state that the sense of excitement associated with events and performances can be achieved by the nature of ephemerality on a particular site, the dramatic construction and deconstruction processes related to ephemeral.

## **5.4 Precedent Study**

There are a number of valuable architectural precedents which display this design project's relevant characteristics of adaptability, portability, sustainability, economy and prefabrication. The precedents show us the

range of characteristics in relation to ephemeral as stated in the previous chapter.

### 5.5 The Prada Transformer, OMA, Seoul, South Korea

Prada Transformer is a temporary structure picked up by cranes and rotated to accommodate a variety of cultural events (OMA, Prada Transformer, 2013). It is 20-metre high and located adjacent to the 16<sup>th</sup> Century Gyeonghui Palace in the centre of Seoul. This pavilion consists of four basic geometric shapes, a circle, cross, hexagon and rectangle which are leaning together and wrapped in translucent membrane. Each shape is a potential floor plan designed for three months of cultural events, a fashion exhibition (Waist Down, featuring skirts designed by Miuccia Prada), a film festival (co-curated by Alejandro Gonzalez Inarritu), an art exhibition (by Swedish video artist and sculptor Nathalie Djurberg), and a Prada fashion show. Walls become floors and floors become walls as the pavilion flipped over by three cranes after each event to accommodate the next. This pavilion transforms into different events space by flipping the different faces and lie on the ground. As a result, exhibitions, fashion shows and film screenings can be hosted in the spaces. It is designed to showcase a series of cross-cultural exhibitions, screenings and live events by its shape-shifting ability which gives a unique mix of visual arts of Korea.

The figure above shows the exterior structure of Prada Transformer. The pavilion consists of four sides of



Figure 4: : Exterior structure of Prada Transformer (Futagawa, 2012)



Figure 5: Segmentation of events in Prada Transformer (OMA, Prada Transformer, 2013)

tetrahedron: hexagon, cross, rectangle and circle which result as a pavilion. The structure can be rotated to fit various events. Flexibility of the structure by rotation gives another dimension and paradigm in architecture space. Generally, architectural space is static and rigid in form and structure, with this kind of concept and approach, space and event are two things that relatively can be changed. Figure 5 illustrate the concept and initial idea of shape-shifting by OMA within a single pavilion or single structure to accommodate all type of programs.

### 5.5 Taipei Performing Arts Centre, OMA, Taipei, Taiwan

Taipei Performing Arts Centre consists of three theatres, each of which can function autonomously. The theatres plug into a central cube which consolidates the stages, backstage and support spaces into a single and efficient whole (OMA, Taipei Performing Arts Centre, 2013). This arrangement allows the stages to be merged for various scenarios and uses. The design offers the advantages of specificity with the freedom of the undefined. The Grand Theatre is a contemporary evolution of the large theatre spaces of the 20<sup>th</sup> century. The design allows for flexibility as theatres can be used independently or combined.



Figure 6: Exterior perspective of TPAC (OMA, Taipei Performing Arts Centre, 2013)

The figure above shows the exterior perspective of the performance centre. This building consists of three theatres, each of which can function autonomously. The theatres plug into a central cube, which consolidates the stages, backstage and support spaces into a single and efficient whole. As a result, this arrangement and strategy allows the stages to be modified or merged for unsuspected scenarios and uses. The design offers the advantages of specificity with the freedoms of the undefined.



Figure 7: Interior perspective of central theatre (OMA, Taipei Performing Arts Centre, 2013)

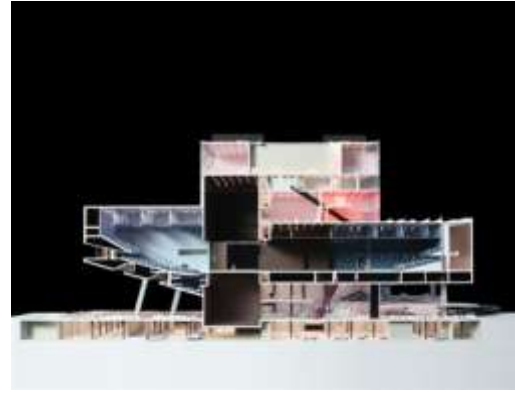


Figure 8: Section of TPAC (OMA, Taipei Performing Arts Centre, 2013)

Figure 7is illustrates the interior perspective of central theatre. The design gives a magnifying ambience for a theatre from a modern perspective. The figure below shows the section of the building. The section communicates to us the relationship between the spaces and the layering of programs within the building that would offer greater vibrancy of activities in the building.

### 5.6 On Demand Housing Solution, Green Horizon, Durham, United States of America

Green Horizon on Demand Housing Solution is an example of impermanence with adaptability, mobility and prefabricated architecture in the sector of residential construction. An immediately deployable emergency shelter can be described as self-sustaining prefab home that can be configured to adapt into a variety of situations. This company has created a home by focusing simple construction, prefabricated modular and green building strategies that can sustain a family of four with a week’s worth of food, electricity and water without external support. The prefabs are constructed from 100% recycled or recyclable materials and feature a metal frame construction that allows for a nearly endless array of configurations. The advantages of prefab are the ease with which it can be deployed, can be towed by truck or carted by train and even fit into a shipping container for travel by sea.



Figure 9:Exterior perspective of model SFH 40-B (Manufacturing, 2013)

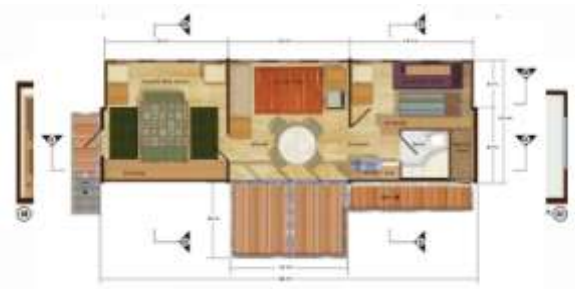


Figure 10: Interior layout of model SFH 40-B (Manufacturing, 2013)

From all three precedent studies, the characteristics of the studies had been analysed. From the table, we can summarized that ephemerality can be in various characteristics. The arguments on ephemeral characteristics can be discussed and expanded as the technology and socio-culture are ever changing. The table below consists of precedents studies and their characteristics.

<b>Precedent Study/ Characteristics</b>	<b>Form transformation</b>	<b>Space transformation</b>	<b>Portable</b>	<b>Demountable</b>
The Prada Transformer, OMA	Yes. The structure can be rotated	Yes. The space can be changed of programs	Yes. The structure is mobile	Yes. The structure can be dismantled
Taipei Performing Centre, OMA	No. The building is permanence.	Yes. The space can be changed of programs	No. The building is permanence	No. The building cannot be dismantled
On Demand Housing Solution, Green Horizon	No. the building cannot be transformed	No. The space cannot be changed of programs	Yes. The building is mobile	Yes. The building can be dismantled

As a conclusion of this chapter, the ephemeral architecture exists in different forms and characteristics in conjunction with different manipulation factors. Ephemeral architecture can be in transformation of space structures and usages, portable structures that can be re-erect and re-assemble and can be in modular form that results in a single structure. These forms and characteristics can be seen from the precedents above in modern years.

### 6.0 Data Analysis

From the literature review and precedents study, we can see that ephemeral term and ephemeral architecture evolved within the time and technological aspects. It can be in a state of permanence structure with impermanence events and space function and also can be impermanence structure with permanence events and space function. In a state of structural and space event that are permanent, the issues that arise are related to expansion and optimum utilization of space. The architect will struggle to find and fit the existence space as the population of it is growing. Ephemerality could be an answer to this current situation as it will offers a resilient and flexible architecture.

Firstly, there are two central ideas regarding the definition of ephemeral architecture. A design intent that does not strive for permanence at the site and expresses the eventual removal of the building from the site must be demonstrated by the architect. The designer can express the intent by a number of ways such as materials uses, structure or literal announcement rather than establishing a set time that divides ephemeral from permanent to be differentiating characteristic.

Secondly, the building must physically leave the site. The architecture designed for easy relocation is not ephemeral architecture if it remains permanent in place. It must be removed or dismantled for example World Expo buildings, shift to another site such as mobile homes, disappear or demolished or in some other way vacate the site.

The term can be misinterpreted and confused by several questions like “how short-lived does a building need to be, to be considered ephemeral?” In this way, ephemeral architecture proves difficult to define in the same way as “high-rise”. Brian D Chappel has stated that the height or number of floors required to qualify as a “high-rise” varies and may shift over time. A ten-story “high-rise” of yesteryear would likely be called a mid- or even low-rise today. It is similar with the distinction of ‘ephemeral’ for a building will likely change over time and resists the assignment of a time cut-off (Chappel, December 2004). These arguments could begin by comparing the building’s lifespan against similar buildings or analyzing how its design expresses impermanence. Since the time-span is changing tomorrow and differ between typologies, the line separating permanence from impermanence should be discussed for interpretation.

Ephemeral architecture does not categorize as a new type or style of architecture. It can be considered a regrouping of architecture. The examples of ephemeral architecture and non-ephemeral architecture include pneumatic, demountable and vernacular which refer to specific types of architecture. He declared that ephemeral architecture exists but we fail to recognize buildings in terms of time-span because architecture is often categorized by structure, form and function and not time-span. As a result, ephemeral architecture has re-examined architecture through the perspective of time in aspect of design and physical contact to a site.

In the future, ephemeral architecture can improve the livelihood of modern society through a sustainable architecture and development. Architecture will be an organism as it can grow, expand and be on the move. It

offers a clean construction as part of architecture has been designed industrially and can be dismantled. On the other hand, demountable and transformable properties will lead to an expansion of space and flexibility in utilization of space. As there are demands, the architecture is evolving.

## 7.0 Conclusion

As a conclusion, ephemeral architecture has a significant role in built environment and will continuously grow. It will not seize the general idea of architecture as an object of permanence since the static, stable and the permanent are all critical. The mobility, portability, transformability, the inflatable and the ephemeral are essential to stability and permanence. In reality, we are living in an age of increasing change and uncertainty. Holding to static perceptions of the world do not allow for sensitivity to an every evolving condition. Creating this world requires flexibility and freedom. To formulate an appropriate system in the future is needed to identify the potential technology and respond to social trends and cultures. Envisioning a building through the perspective of ephemerality is a must for architects and how the potential of ephemeral architecture might improve the future built environment.

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