

Human Impact on Environmental Disasters through the Film Avatar

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Abstract

In this study, the movie Avatar is analyzed in the context of the relationship between architecture and cinema. In the interaction between architecture and cinema, the two disciplines use each other as tools. This relationship is supported by the powerful animations in the movie. The movie reveals that one of the main causes of environmental disasters is human intervention. The unconscious consumption of natural resources for economic interests threatens not only ecological balance but also cultural continuity and collective memory. In this context, it is of great importance to prioritize the use of local materials in architectural designs and to develop environmentally compatible buildings in line with the principles of sustainability. Otherwise, it should not be forgotten that speculation-driven construction processes may lead to irreversible ecological and socio-cultural destruction in the long term.

Keywords

Avatar, environmental disasters, sustainability, natural environment

1. Introduction

Today, the concepts of cities and urbanization are gaining importance due to the increase in population. The process of urbanization since the Industrial Revolution has led to the intensive use of natural resources. This situation has led to the depletion of resources. This decrease in natural resources has paved the way for the emergence of environmental disasters over time. To prevent these disasters, it is important to adopt ecological design, a holistic design approach in which environmental inputs are evaluated together [4].

The ecological design model aims to ensure that the built environment can survive without harming the environment in the processes of change, development, and destruction that it undergoes after its construction. For this purpose, it is necessary to use resources efficiently, prefer renewable energy sources, protect the natural environment, and prioritize environmentally sensitive designs (İmamverdi, 2022). Climatic data, land selection, building positioning, material selection, and the effective use of natural and green areas are among the important factors in the creation of ecological designs [4].

In this context, it will not be sufficient to evaluate an architectural structure only through aesthetic concerns and formal features. Adopting an environmentally integrated, sustainable and ecological design approach at the planning stage will minimize the damage to nature and prevent environmental disasters. In this study, the phenomenon of environmental disaster will be discussed through the movie Avatar [5], directed by James Cameron, and evaluated through an interdisciplinary analysis in the context of cinema and architecture.

2. General Information about Avatar Movie

Released in 2009 in America, the movie Avatar was written and directed by James Cameron. The movie, directed in science fiction style, has won many awards.

Most of the movie takes place in the city of Pandora. Pandora consists of a mostly forested environment that is home to the Navi. The city of Pandora, where the Navi people live, is an area where

valuable minerals and metals are found. The city of Pandora is an environment where humans cannot live naturally. The environment can only be inhabited by cloning the human body and matching it with the avatar body. Avatars are sent to this area to explore the city of Pandora. These avatars are tall, blue-skinned people.

The movie Avatar depicts the struggle for survival of the Navi people within their ecosystem as humans become insatiable and destroy natural assets. In the living spaces where the magical and sustainable atmosphere of Pandora city is handled, the use of materials from nature draws attention, and the place-specific vegetation and environmental factors have a great influence on the choice of location and space in architectural constructions. Based on the movie Avatar, the natural construction of Pandora city will be emphasized, the use of wood and local materials will be mentioned, and the environmental disasters caused by humans will be examined.

3. The Potential for Environmental Disaster in Pandora City

The new settlement to be established in the city of Pandora, where the Avatars live, disrupts the balance of the ecosystem. Considering both sustainable life and sustainable culture, these concepts should ideally mitigate environmental disaster, not contribute to it. Unfortunately, the living space of the Navi people in an ecological atmosphere intertwined with nature, has been discovered by humans. This area, rich in precious minerals, is valuable for its underground resources. The first environmental disaster will have begun with the destruction of the forested areas by people waging war against the Navi to access the underground resources, by driving their advanced technological machines into the field. It would be an understatement to consider this construction related to the extraction and processing of precious minerals as only a physical environmental disaster. The destruction of the tree, which is considered sacred by the Navilar and believed to have healing powers, will trigger a spiritual and cultural catastrophe as a result of the war.

4. Sustainable Material of Natural Life: Wood

Wood is the first building material used by mankind. Wood is commonly used in various places, and its high usage is because it is a natural building material, renewable and easy to process, as well as being the least environmentally damaging building material during its production.

Wood is used in many areas such as ceiling and flooring systems, roof elements, door and window joinery, carrier systems, and landscape elements. It is possible to design a building from start to finish with only wood. It is the building element that is most used compared to other building materials.

After the industrial revolution, the use of wood as a carrier material in buildings has decreased with the spread of stone, brick, and masonry structures in building systems, and the construction of steel and reinforced concrete systems. At the same time, the vertical rise with the increasing population shows that today, wooden structures are replaced by reinforced concrete and steel structures [1].

The use of wood varies depending on location, climate and vegetation. In addition to being a local material, it has been used in different construction systems throughout the ages. Many techniques such as nailing, clamping, overlapping, mortise and tenon joints, are used to join wooden elements together [2].

4.1. Examination of Natural Material in terms of the Use of Wood in the Avatar Movie

The use of wood in the natural environment was mentioned in the movie Avatar. It is seen that place-specific resources are involved in the formation of space from past to present. Although these design principles start with location a priority, the parameters affecting them include the effective use of vegetation and resources, belonging to the area. The natural vegetation in the city of Pandora is a forested area, which shows that the use of wooden materials is widespread.

It is seen that the use of wooden building materials has been widespread since ancient times. The use of wood, as examined through the movie, was found in many areas such as roofs, carrier systems, interior separations, railings, separators, outdoor landscape elements, and playgrounds. This shows that wood is the most widely used material from the past to the present. Wood is extensively used due to the abundance of wooded areas resulting from vegetation cover. In addition, the fact that the processing, transportation, and assembly of wooden building materials is simpler has a great effect.

In the scenes of the movie Avatar, in the city of Pandora, the vegetation appears forested, Figures 1 and 2. This affects the diversity of trees and the presence of wood materials.



Fig. 1. Environment surrounded by natural vegetation [5]



Fig. 2. Natural environment [5]

The presence of wood is clearly visible in the living spaces, reflecting the influence of the surrounding forested vegetation. The Navi people use wood in the traditional arrow throwing mechanisms that they developed to protect themselves from humans, Figure 3. From this point of view, we can discuss the use of wood for various applications.



Fig. 3. Arrows made of wood for protection [5]

The use of wood is evident in the exoskeleton system of space formations. The use of wood in many areas such as roof elements, outdoor wall elements, railings, the porch area, and the terrace area can be seen in Figure 4. Traditional houses today can be constructed using a timber framing system or wooden systems on a ground floor stone wall. There are also examples of wooden houses not multi-storeyed, usually consisting of a ground floor and one or two floors above it. The construction in the city of Pandora has a ground floor and one upper floor, and is a residential structure built using only wooden elements from the ground floor to the roof (Figure 5).



Fig. 4. Wooden house [5]



Fig. 5. The wooden residential building where Jack stayed, wooden railing wooden building system [5]

Wood is not only used in exterior skeleton systems, but also in other structural and architectural applications. They used in roof carrier systems, as separators in the interior elements seen in Figures 6, 7 and 8, and wood is notably used in interior furniture elements.



Fig. 6. Use of wood in the interior [5]



Fig. 7. Use of wood in the interior [5]



Fig. 8. Use of wood as local material, table [5]

In addition to these, wood is used in outdoor separator elements. In the photograph in Figure 9, wooden building materials and wood in landscape elements are evident.



Fig. 9. Use of wood in track areas [5]

5. Two different Settlements in the film

The settlements in the film are handled in two distinct dimensions: industrial spaces as a result of industrialization and the construction of Pandora City in harmony with nature.

The people trying to take over the city of Pandora are observed to live in capsules. The damage they cause to the environment is significant. For the machine to work and move from one place to another, it needs to consume energy, which leads to external dependence to sustain life in the spaces.

The construction in the city of Pandora was based on the use of natural resources. In this movie, it is possible to see the most efficient use of nature in the Na'vi people living on the planet of Pandora. While nature and the medicinal tree are important for the Navis, they assume that they come from and will

return to nature. This is why they use natural resources effectively and consciously. Their spatial formations take place in tree roots, and they live their lives with minimal intervention in nature. The peoples attempt to protect their cities and oppose the war aimed at capturing the city of Pandora, while also safeguarding their forests and living spaces, shows demonstrates the importance they attach to nature.

The extensive use of wooden materials in the city of Pandora is due to the surrounding area's dense forestation, which underscores the importance of wood use. The people of Navi provide all kinds of materials, ranging from space formations to cutting and hunting tools, and including wooden materials. Human beings, who damage the natural environment for the sake of rent, start living in an industrial environment and adapt to this atmosphere, disrupting the vital cycle of human beings. It is mentioned in the movie that people cannot be directly involved in the natural habitat where the navi people live, and that they must wear masks and stay in capsules in order to live there. Industrialization, the deterioration of the built environment, and the inability of people to live in the natural environment in its natural form pose a threat. It will be important to minimize the damage to the natural environment and to use natural materials and resources in the most effective way.

6. Factors Causing Environmental Disasters Based on the Movie Avatar

The city of Pandora, which constitutes the main setting of the film, is depicted as a natural area where the Navi people live. The Navi people live their lives in harmony with the natural environment, with a sustainable approach that minimizes interference in the ecosystem. Their harmonious structure with nature is seen both in the use of materials and in the choice of natural living spaces, where they live in spaces harmonious and intertwined with nature.

There is a valuable mineral called 'Unobtanium' in the area where the Navi people live. With humans' discovery of this precious mineral, the war against the natural structure emerges in the city of Pandora.

In the first series of the movie Avatar, which explains the spatial destruction caused by the consumption of natural resources in the best way, environmental destruction and related spatial destruction are discussed. The destruction of areas with high natural and ecological value, driven by profit motives, results in not only environmental disasters but also spatial and cultural ones. The areas where the Navi people live consist of structures intertwined with tree roots and this situation shows that the relationship with nature is based on balance, thereby minimizing the damage to nature. This situation also demonstrates that the simple state of nature is employed as a tool to meet necessary needs. In this context, the protection and sustainability of natural resources are of critical importance in urbanization processes.

7. Conclusion and Evaluation

The movie Avatar is discussed within the scope of the relationship between architecture and cinema. The movie Avatar is a tool that describes two different constructions and the conflict that emerges with them. In the movie, which offers a different perspective on stage and architecture, environmental disasters are emphasized with animations. The movie clearly indicates that the human factor is one of the most significant triggers of environmental disasters.

One of the biggest tasks of architects will be to develop design models that do not harm nature and that address sustainable and ecological designs while building. At the same time, the use of natural materials that reflect the main content of the movie is of great importance. The war against nature for the sake of rent is staged in the movie, which mentions the importance of using local materials effectively as a priority in the selection of space and location while designing. The conflict that develops over accessing and processing the precious mineral emphasizes the tension between natural life and industrialization. The resistance of the Navi people to protect their natural habitat, who live a life integrated with sustainable nature, is also important for maintaining the natural environment's sustainability.

The destruction of hundreds of thousands of square meters of natural areas for rental income through the extraction of valuable minerals may seem to provide economic gain in the first place, but in the long run it can cause irreversible ecological and socio-cultural destruction. The lack of a relationship

between the architectural context and the place in which the buildings are constructed – where the buildings themselves are incompatible with the environment – triggers environmental disasters, causing the loss of not only the physical environment but also cultural identity and collective memory.

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