Fantastic Architecture in Cinema

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Abstract Movies represent society's dream, which is to tell a story; characters interact with each other to create this story, their mere presence on screen creating space. Thus, filmmakers become architects in their effort to communicate these spaces, whether they are interior or urban, to enhance and add to their story telling. They are not constrained by the limits of the architect nor, especially in the case of Sci-fi and Fantasy movies, even by the constraints of reality, imagining and creating architecture from a wholly different perspective: a story perspective. The characters interact with their hypothetical spaces and this shows what they require of the architecture to convey their story. Thus, the hypothetical spaces represent people's aspirations and their deepest fears for architecture. Part of an architect's job is making dreams a reality. However, in the architectural industry, design is accomplished in a step-by-step process that has undergone little change since its establishment. While this makes the job easier, it also leads to recycling, putting limits on architects' imaginations. This research analyzed an array of fantasy and sci-fi movies from an architectural point of view and explored the inspirations behind them. Patterns were found in the arrangement of spaces and the urban characteristics in the films. Then, the themes and messages behind the architecture were explored. Findings indicate how the cinematic architectural designs have played off of real life architecture and inspired one another since the creation of moving pictures. From a practical lens, these findings reignite architects' imaginations, proposing new tools to achieve the fulfillment of society's dreams.

Keywords Fantastic, Sci-Fi, Architecture, Cinema, Movies, Imagination

1. Introduction

The dramaturgical space is constructed based on the experience of the architectural space, and the spatial sequence is formed by the way they are performed [1]. Different from the dramaturgical space, the cinematic space architecture of interior design is a graphic exploration of the architectural space in the movie, which provides a new perspective for the relationship between the architecture and the movie [2].

Space is at the center of architectural design. It is the backdrop to mankind daily activities. It can direct humans' actions, affect their mood, and communicate something to them. This is what filmmakers exploit in their production of movies, regardless whether they are cartoons or live action films. The characters act against a backdrop and all together it forms a scene that communicates a story or an idea. When architects design space, they are preoccupied with modules, objects, structure and other technical matters and sometimes forget the humans who will dominate that space. In film, humans come first; humans tell stories. Without them, there is nothing. The spaces allow them to convey their stories; hence, films show how humans ideally use space in specific contexts.

To explore this point further, consider those films that do not take place in reality, but in worlds of science fiction and fantasy, set in alternate universes or far in the future. These spaces and concepts do not exist. Hypothetical spaces are used to convey hypothetical realities. The films show how these hypothetical spaces are ideally used in these hypothetical realities. There is a possibility then, to use film to help architecture create new realities.

Previous researches have already established a relationship between film and architectural space and form.

In 1996, Neumann [3] described cinema as having been a natural ground for architects to test and examine alternative approaches to their discipline ever since its inception at the end of the 19th century. Likewise, it has been a natural arena in which film directors have worked on their own particular take on spatial issues. Bull [4] found that cinema portrays moments that have never thought of before, leading the way to what later becomes real-life, including cities, bridges, ideas, gestures, skyscrapers, literature, and art. Andjelković [5] took research a step further and studied cinematic architecture to develop new design strategies that allow the architect to bridge the differences between the physical dimensions of architecture and the spatio-temporal projections of movement.

There are some concerns regarding architecture in cinema. Cairns [6] argued that design ideas put forward in cinema may contain problems and some contradictions in the architectural design. He also mentioned that some films do not seem to lead to any great transformation of normal architectural thinking and involve a creative process of imitative adaptation. Koeck [7] also mentioned that space in film did not represent reality accurately. This was countered by Pallasma [8], who stated that the purpose of studying films is to discover more subtle and responsive ways to create a contemporary cinema-inspired architecture. He added that some of the most esteemed representatives of the architectural avant-garde of today, like Bernard Tschumi and Rem Koolhaas, have admitted to the significance of cinema in the formation of their approach to architecture.

Films are regarded as the art form closest to architecture [8]. Cinema is where architects can create designs without the limitations of reality, such as with the use of fantasy materials and building structures. The meaning and symbols imbued by the story influence the interpretation of the resulting space [7]. In Sci-Fi and fantasy movies, those spaces are new, unexplored and brimming with potential. That is what this research aims to do: unlock what the fantastic architecture has in store for architecture of the future.

"It is undeniable that the cinema has a marked influence on modern architecture; in turn, modern architecture brings its artistic side to the cinema…Modern architecture not only serves the cinematographic set, but imprints its stamp on the staging..." -by Robert Mallet-Stevens [9]. Therefore, this paper demonstrates one possible way of learning from fantastical architecture in cinema by viewing aspects of it in relation to architectural design. The purpose is to discover the inspiration, message and story behind the fantastical architecture and its aspects, in pursuance of evaluating the possibility of any design applications in reality. This research paper will specifically explore the potential of Sci-Fi and Fantasy movie architecture to impact theoretical concepts in architecture.

2. The Configuration of Fantastic Spaces

The configuration of Fantastic Spaces requires several components, as shown in Figure 1. Space, zoning, circulation, and urban characteristics are the most common components that need to be considered in a pre-designed dream world.
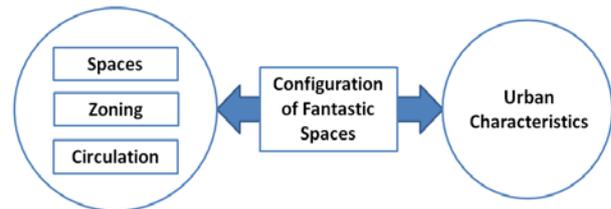

Figure 1. The Configuration of Fantastic Space

2.1. Spaces, Zoning and Circulation

2.1.1. Ralph Breaks the Internet

The inhabitants live in houses which also double as their work areas during the day. These are arranged in an oblong circle. In the center is a huge communal space, with benches, where they can mingle and socialize. The communal space does not have any cultural markers. The place resembles a train station with its smooth metallic surfaces. Windows light either end of the communal tube. As characters do not need sleep, their houses host various services, which include a bar. Entrances to the houses/work spaces are huge, creating a feeling of monumentality.

Some spaces where the characters go for entertainment are shown. One such space is a car racing area. It has deeply saturated and bright colors. The background is a dark purple, which reminds one of the city at night. It has lavender strips. The cars are bright blue and yellow. All the surfaces are reflective surfaces. The place represents the prevalence of technology in lives. Skyscrapers, connected on different levels.

A big open communal space is surrounded by shopping booths. The entrance is in the middle. People enter from above. Entrance is marked by a big globe. As the characters walk to an edge, the space becomes a precipice that looks over the whole city. Near this edge, there is a booth representing a search engine that can direct someone to where they need to go in the city. With just some keywords, transportation is individualized and quick. The characters go from their houses to the communal space through a long transit tube during the night. They go back to their homes in the morning or when they want to be alone. The home spaces are also their work spaces.

2.1.2. Divergent

In the post-apocalyptic future, there are 5 districts with one main hall to gather in for meetings or events such as the exam; each district represents a fraction. Housing units are in each district. Grids are in some districts, unorganized in some district. The transformation for some district is an old damaged black train that leads to a huge and horrible building which represents the district. Utopian: transformation is small white airplanes.

2.2. Urban Characteristics

Building is determined as a part of urban design, including landscape design and interior design. In fact, the architecture in the cinema combines urbanism and architecture with film and art. In movies, they need to provide moving stationary objects, whether the building is physically permanent or temporary. In addition to design, film and architecture also involve narrative, and the work has visual and psychological characteristics. Especially the narrative presented in the landscape design can be clearly seen in the various countries.

2.2.1. Ralph Breaks the Internet

The characters travel to a city which represents the internet. The film portrays the city as amazing and cool. It is dominated by tall sparkling skyscrapers. Circulatory paths connect the skyscrapers on multiple levels. Chicago city is surrounded by fences to protect it from the outside where the world is very damaged and dangerous.

2.2.1.1. Atlantis: the lost city

The submerged city is divided into two parts; the modern city and the old city of Atlantis. After hundreds of years since the old city was build and due to the needs of the people of the city, they built a new city to suit their needs. This city is located above the old city, where the high-class population lives in the highest modern city while the lower-class inhabitants live in the bottom. This division certainly led to the different look of both parts. The overall city is surrounded by a huge wall for security with huge portal linked to Water Bridge which is the only access to the city. It seems logical city planning yet its context is what making it Sci-Fi architecture.

The spaces in the Lost City are either houses or large courts and halls for activities, similar to ancient Greek cities. These courts are the main place that people spend most of their time in, for work, entertainment and government entities. Courts characterized by their plain white color, a lot of Greek columns, high ceilings and extremely large open spaces. There are differences in the characteristics of both cities. The old city had an old classical style. The buildings were all white, with many columns and high ceilings, as was the city of Athens. While the modern city was characterized by high buildings and skyscrapers and of course different structural materials

such as glass and iron and other modern materials. Since the city is laid on the bottom of the ocean, the only way to move between the places is the submarines. The sea represents the streets in the city. The film's designers used the large spaces and large plants to express the main streets and narrow pathways with more small plants to express small streets in the City. From this analysis it is obvious that filmmakers used the typical architecture with untypical methods of using the context differently that created the fantastic architecture.

3. The Image of a Fantastic City

Dynamic images can guide people through space, attract their reactions, and divert their attention at the same time. Architecture is not the leader of the film, but being elevated to the focus of the film also supports more narrative, making this unresolved question applicable, and effectively immersing the audience in the real or imagined world [10]. Therefore, this section describes the fantastic architecture, reflects the story of utopia and dystopia, highlights the message about the environment and society, and expands the horizon of the architect.

3.1. Fantastic Architecture Reflects a Story: Utopias and Dystopias

3.1.1. Atlantis : the lost city

Atlantis is a fictional island referenced inside a purposeful anecdote on the hubris of countries in Plato's works Timaeus and Critias. The story closes with Atlantis dropping out and submerging into the Atlantic Ocean. The Atlantis story has considerably affected literature. The figurative part of Atlantis was taken up in idealistic works of a few Renaissance authors, for example, Francis Bacon's New Atlantis and Thomas More's Utopia.

As well as filmmakers, some believe that it is a symbolic story that expresses the ideal image of society. The Atlantian civilization witnessed progress, prosperity and superiority in all fields, and also enjoyed the great singing and distinguished with nobility and morality. However, over time greatness and pride prevailed over its rulers and inhabitants. Atlantis turned from a symbol of civilization and progress into a symbol of tyranny and greed. For this reason, the gods of Atlantis avenged and flooded the city, its rulers, its civilization and its people. Thus, people are curious to know how this city looks like, what kind of city it is. So, filmmaker stated to build a city that has to reflect what was said in the allegory. In 1990, filmmakers actually done the job and achieved the desired goal but over the years, this image has changed, the architecture in the film started to be ordinary for the audience. Filmmakers had to re-film the movie with advanced technology and more utopian architecture to convince the audience and deliver the message properly.

3.1.2. Divergent

Utopian space is usually represented by the color white because of the influence by the mid to late 19th century urban disorder. Burnham offered a powerful vision of what a civilized American city could look like, known as "White City". Some of his contributions included the built of some of the first skyscrapers in the world, directed construction of the 1893 World's Columbian Exposition which inspired the City Beautiful Movement, and created urban plans for Washington DC, Chicago, Cleveland, San Francisco and Manila-all before the profession of urban planning exhausted.

The society is divided to 5 factions: Abnegation, Candour, Amity, Dauntless and Erudite. These factions depend on the test they have to go through in their 18th year. This compulsory segregation is designed somehow to promote peace, despite an almost immediate sense that these groups are poised for conflict. In addition, this division reminded of Aflaton city division concept where people are divided to 3 factions according to set of exams. Plato's Three Classes: first class (Guardians), second class (Auxiliaries), and third class (Craftsmen).

The guardians are also known as rulers or philosopher-kings are the military of the city. Physical strength, spiritedness and a love for learning are some of the features they have to exemplify. According to Socrates, upon then guardians, they should be broken into subcategories themselves: "complete guardians" and "auxiliaries".

In the Plato's Republic, "complete guardians" are considered the highest class since they are the rulers and the ones who guard external enemies and internal friends. Being most knowledgeable, complete guardians will see to the good of the city before they see to themselves, because, essentially, they are the foundation of the city. As for "auxiliaries", they are the city's soldiers who are the "supporters of the guardians' convictions.

As stated by Socrates, the third and final class is the farmers and craftsmen. Despite being the last class, people of this class are not in a shameful position in society since these people will be nearly as important to the city as the rest of the classes. Also, the family's relationships are weak because after the examination results they are not allowed to see their family and all the belongingness is for the new factions. Alike in Aflaton, where there is no any kind of family relationship. The city is controlled by other force (utopian) from the outside which is designed by metabolism architecture.

3.2. The Message of Fantastic Architecture: Spread Awareness

3.2.1. Environmental

The filmmakers are delivering a message through the movies. Some films are made for this purpose called noir films, and it restructures and re-represents society in a parody of the double-edged world that is not what it seems. In this movie, the filmmakers used the method to present an environmental problem from the underwater world's perspective. A war between the land's people and the water's people for water pollution they caused. Also, present the conflict of opinions and thoughts and the way to spread the peace.

3.2.2. Social

The need to belong is a basic human characteristic and there are a lot of factors that encourage the societies to be in a division such as religion, nationality and gender. But, Divergent movie encourages a friendly, unified community within which people can socialize regardless to all the factors that may divide them. Without having a feeling that the other is perceived as a threat, the idea is to create a community with consistent and monolithic beliefs. And this can be a tremendous force for social good.

3.3. Expanding the Architect's Vision

3.3.1. Atlantis: the lost city

The advanced methods and technology used in Sci-Fi movies help the architect to expand their vision of architecture. Filmmakers become architects in their effort to communicate these spaces. They are not constrained by the limits of the architect nor, especially in the case of Sci-fi and Fantasy movies, even by the constraints of reality, imagining and creating architecture from a wholly different perspective: a story perspective. The characters interact with their hypothetical spaces and in doing so, show what they require of the architecture to convey their story. Thus, the hypothetical architecture expands architects' vision in the real life.

3.3.2. Divergent

The filmmakers of divergent movie created a hidden utopian world. Also, some researchers at the Department of Energy's Lawrence Berkeley National Lab and the University of California, Berkeley, invented a microscopic cloak that has the ability to conform to the object shape and hide it from the visible light. Most of the studies and researches on invisibility cloaks use metamaterials which are synthetic composite materials with a structure such that their exhibited properties not usually found in natural materials, especially a negative refractive index [11]. Furthermore, the scientists use optics to accomplish shrouding. In any case, a few specialists, including optical physicist Joseph Choi, proposed that might be the wrong methodology. Thinking carefully, they contend, could prompt a genuine imperceptibility shroud all the more rapidly. Choi, who was a member of the research team at the University of Rochester that created the invisibility lens, now have created a digital cloak [12, 13].

Architect can get benefit from this new technology and combine this knowledge to their designs. It will be amazing

to have a building with some hidden parts. Actually, it will be a big movement in architecture if they design a fully hidden building by controlling the materials wavelength and use the metamaterials. Utopia is an imaginary city where there is no issue of more related urban growth and people do not have any problem relating to the society or to the urban designing with well synchronization to the growth of the city. Utopia city is satisfying all the need of the society of individuals. Also, it transcends the limitation and gets extended to the stage where no modification is needed, either with designing or with the administration.

Utopia city is following the Anthropocene which is a concept of the world as fundamentally shaped by humans, from anthropo, for "man," and cene, for "new". The history of Utopia started after the Industrial Revolution, to use the political and economic structures to create cities that were beautiful, spacious, and orderly. The city had to get away from the black soot of the coal and become more clean and classical. Actually it started by a World Fair that was held in Chicago in 1893. When they feel there is a need for a fair which would be big, broad and beautiful in contrast to the city that was cramp, ugly and full of crimes. "Make No Little Plans" was the move. "Make no little plans; they have no magic to stir men's blood and probably they will not be realized. Make big plans; aim high in hope and work" Daniel Hudson Burnham (1846-1912) [14]. Few individuals have had more impact on the American city than architect and planner Daniel Hudson Burnham. Aforementioned, Burnham visualized a civilized American city known as "White City".

After World War II, young Japanese architects used the word metabolism which means the process of maintaining living cells, to describe their beliefs about how buildings and cities should be designed. New perspectives on the future of urban design and public spaces were laid based on the postwar reconstruction of Japan cities. Furthermore, Metabolist architects and designers claimed that cities and buildings are ever changing organic with a metabolism instead of just static entities.

4. Conclusion

By linking contemporary philosophy and urbanism or art theories with architecture and urban design, there are many possibilities to develop design theories. The concept of film architecture attempts to thoroughly integrate film and architecture, providing various possibilities in the field of design and architecture. The study has assessed the possibility of cinematic design and its application in reality. This study outlines the configuration of fantastic spaces in the aspect of spaces, zoning and circulation as well as urban characteristics. This study also discusses the image of a fantastic city where a fantastic architecture reflects a story in the approach toward utopias and dystopias. The message of fantastic architecture were elucidated, which spread the awareness in the factors of environmental and social. In addition, this study also added the comment on expanding the architect's vision. Since the creation of motion pictures, film-level architectural design has stood out from real-life architecture and inspired each other. These discoveries have reinvigorated the imagination of architects and proposed new tools for realizing social dreams.

Acknowledgements

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