

End of Utopia: Dystopian Architecture

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Abstract In the field of architecture, in the modern corners of life, new technologies and science have been used for the futuristic society to create a perfect community where they can improve the quality of life and to achieve "brave new world" for everyone in next generations. The architects had always dreamed of building a better world using utopian approaches. As a consequence, the architecture's dimension of utopian especially during the nineteenth century, turned upside down to expose a surprisingly regular capacity to introduce the form of dystopian. In an effort to start thinking of ways out of the current impasse, this research aims to examine the roots of architecture's dystopian transition, the human and global warming effects and the contemporary failure development in architecture. As a result of these phenomena, resilience architecture has been discussed as a suggested solution. The objective of this paper is to challenge the built environment to achieve different solutions to the 21st century problems that were caused by architectural movements with a possibly utopian agenda while it is actually turned into the opposite: a dystopian wasteland.

Keywords Dystopian, Utopian, Resilience, Global Warming

not have a place for anything like a paradise on earth. So as an example for what happened after the World War 1, planners and architects started to have the power to do dangerous experiments on an unsuspecting public, who bravely rejected these experiments. "Utopia" here refers to being too exaggerated, too ambitious, not caring about details, and completely ignoring the impact of architecture on humans. Since the 1980s, the public has been afraid of modernity, and people's lives are difficult to change, because the consequences of big plans are always worse than in the past. From this point of view, the architecture from the 1960s to the 1970s shows that it was all just a mega structure and form concerns without really taking care of what human being needs and what will help this earth and what are the consequences.

The word Dystopia comes from ancient Greek and means "bad scenery", or it can be called Anti-Utopia. An example of dystopia involves the pain of being part of a certain community or society. These types of societies are usually suppressed by almighty governments. Dystopian society has several characteristics, including propaganda being used to control social citizens, exile, and distrust of the natural world. Second, information, independent thinking, and civil liberties are restricted [1]. Next, social citizens worship nominal leaders or ideas. In addition, citizens living in a state of dehumanization are considered to be under constant surveillance and are afraid of the outside world. Finally, citizens satisfied the unified expectation, while the individuality and dissent were bad [1]. The formation of dystopian works presents a world, in which repressive social control and illusion of a perfect society are maintained through one or more control methods, such as corporate control, bureaucratic control, technological control, and philosophical/religious control

1. Introduction

For many years, the term "utopia" was considered trivial when applied to architecture, and part of the problem with utopia was dreams. After all, what any imaginary ideal society ultimately ends up being its "own world turned upside down", which means that the world, as it is, must

[1]. The architectural differences between utopia and dystopia are shown in Table 1.

Table 1. Various aspects of utopian and dystopian architecture

Aspects of the building	Utopia	Dystopia
Surrounding	Peaceful land	Full of hostility and restlessness
Building layout	Systematic	Imbalanced
Conditions	Clean	Dirty
Atmosphere	Calm	Chaotic
Government	Not controlled by the government	Citizens are constantly under surveillance
Environment	Nature is preserved	Nature is destroyed
Trend	Self-sustainable and self-sufficient	Devastated by pollution

Instead of having the utopia, the dystopian will be formed with all these reasons that until now have a major effect on future generations. One thing is the global warming CO₂ levels and global temperature, sea level, the expanse of ice, the fossil record and the distribution of species. All that is related to the human effect what happened in the earth is response to what human did on earth and as result of this the utopian approach is very hard to achieve. Hence, finding out the cause and defining the solution is the way to solve these dystopian problems. In addition, everything is affecting each other. Humans effect the earth and climate changes and all that led to the dystopian end of the world. Architecture should accept its own limitations and stop trying to change the world.

2. Reasons Behind Dystopian

2.1. Human Being and the Built Environment

Humans affect the environment in numerous ways. Some of the effects have mainly resulted directly from human activities, where others are having fewer effects that are part of series of reactions and actions. The common effects are the decreased of water quality, increased in the temperature, primarily due to greenhouse gases emissions and carbon dioxide that humans emit them in many ways. Mostly come from burning of fossil fuels in factories, cars and electricity production. Other contributors released methane from agriculture and landfills, fertilizers released nitrous oxide, gases are used industrial processes and for refrigeration, the loss of forests is the caused store for CO₂. In addition, population increased the demand for natural resources and caused different types of pollution, which rapidly change the climate. Furthermore, the rise in global temperature is causing sea levels to rise, risks on economics rely on coastal resources and threaten the coastal communities, floods and droughts and loss of

biodiversity. Buildings are having the greatest contribution to climate change. They are responsible now for more than 40% of global energy. Moreover, this causing one-third of global greenhouse gas emissions (GHGs). From 1971 and 2004, the emissions from buildings are increasing. Carbon dioxide (CO₂) emissions for commercial buildings grow 2.5% per year and 1.7% per year for residential buildings [2, 3]. As a result, architecture design mistakes have a major role in global warming.

2.2. Architecture Mistakes Leads to Dystopian

Architects are highly responsible for making mistakes that lead to dystopian architecture. The 21st century is one of the most creative and innovative ideas for architecture. But with these great ideas, there come great failures. Causes of this failure in the architecture firm are the high-rise buildings, which are creating new problems and how it is lead to dystopian, and materials like wood, metal, and other. Also, the construction mistakes have a big responsibility for human life, then the failure to study climate and orientation and site analysis. These mistakes if not been well considered and carefully implemented, then the dystopian will happens. The following factors represent some of the architects' mistakes.

2.2.1. High-Rise buildings

The high-rise buildings are a phenomenon faced by the world, especially large cities. High-rise buildings for land use with adverse environmental impacts create new problems, including overcrowding and environmental pollution, and reduced access by citizens to clean air and sunlight. The harmful effects of high buildings on environmental pollution are the increase in the population and the lack of land in the region and the lack of green spaces and the distances between the buildings, which leads to environmental pollution. The study showed that tall buildings cause increased air pollution in large urban areas due to wind changes and direction as well as congestion of high buildings as a source of contamination. Therefore, some techniques should consider the design of the long structure to reduce the negative effects of high buildings on environmental pollution. Unfortunately, the lack of building roles in the term to protect the environment and control the rules in the construction process caused ecological pollution and especially air pollution. It is suggested that re-evaluating the regulations with limited control can improve air quality in large cities, as well as take advantage of green spaces on the floors and roofs of buildings as environmentally friendly, trying to reduce environmental problems. For example, the Tower in London (refer Figure 1), the problem was that the convex shape was magnifying the sun and reflecting it magnified, which causes the burning of many things in the street and melting of some cars.



Figure 1. Tower in London

2.2.2. Materials



Figure 2. Hang Kong Tower

Nowadays, the subject of material is apparently the basis of architecture. The wrong way of using materials may negatively affect the environment. First, humans and then may also lead to dystopian, because the use of wrong material or wrong approach may lead to the un-renewable of these natural materials. Thus, the architects or specialists of these materials should learn how to use these materials

in the right way. Some of the materials are like the wood. They cut it by lousy way that will harm the environment. They should learn how to cut and use these natural materials in a way that can make these natural materials repeatedly grow to increase the numbers of natural resources and at the same time saving the environment from harm. Figure 2 illustrates an example of Hang Kong Tower which represents an architectural mistake, using wood in a wrong way distorting the building. The windows were falling, and they cover it by plywood that deformed the building.

Another example is metal material used in the Tokima Bridge which is classified as a chemical element suitable for conducting heat and electricity (Figure 3). As a building material, it creates structures that are rigid and long-lasting. The architect should correctly maintain these materials and use it correctly. The problem was they used a weak material to save money, which caused the fall of the bridge due to the strong winds.



Figure 3. Tokima Bridge

2.2.3. Construction mistakes



Figure 4. Sambong Building

Construction mistakes are considered as the most

serious one, because they may lead to the death of people. This is a big responsibility that must be borne by the architects and construction workers and also be careful to not lead to dystopian. One of these construction mistakes are shown in the Sambong Building (Figure 4). They removed the columns supporting the elevator and placed it with air conditioners on the roof of the building, which led the building to collapse.

2.2.4. Failure of studying climate, orientation, and site analysis

The failure in these studies may lead to huge problems and many risks, so it is one of the fundamentals of construction. Concentrating in these studies will avoid the occurrence of major damage that will lead to dystopian. Figure 5 shows an example of Shanghai compound that highlight the importance of these studies. In this example, the land filled with water because of its proximity to the river, which leads to the collapse of the building.



Figure 5. Shanghai compound

3. Utopian versus Dystopian

3.1. A Brighter Future

The dystopian approach results from many modern cities, or at least in part, from a distraction about utopian projects in the first place. It is familiar within the discipline to represent much of modern architecture as the failure of utopia. It is truly hard in all, but in a very few examples to see how what was being built or proposed is actually utopian, rather than simply an ultimate realization of existent direction, which is usually the act of dystopias rather than of utopian. In the sphere of architecture, the corners of modern life, the new technology is often covering the thought of solving social, individual, economic and political problems. Consequently, since the nineteenth century, the utopian architecture dimension has been turned upside down to expose the form of dystopian. Such developments are related to the arrogance of vision, explained for example in luxury late 18th century projects of the French architect Étienne-Louis Boullée in

1728-1799, that detect the roots of a modernist inclination to dream in unlimited terms, which forms the masterpiece of the constructed built environment since 1850.

In sum, to return architecture to its utopian chance (far from overconfident plans regard future inhabitants) will demand an overcoming on technology that supports dystopian turn. The idea of modern architecture has promise for a better world, physically, socially and politically. It was meant to become the physical to massive ranging reforms. In order to achieve it, science and technology is the approach to achieve a 'brave new world'. The inclination in architecture, from the mid-nineteenth century and onward, was growing the obsession with development and technique that was impossible before the enlightenment. As it turns out, most of the modern cities are away from the architectural settings that was described in Fritz Lang's film *Metropolis* in 1927 (Figure 6) or imagined in the postmodern city that was represented in *Blade Runner* film in 1982 (Figure 7). They realized it with some utopian thoughts. Those two movies represented the ideological foundation of their choices with the timeliness of the dystopian sight, which they put forward.



Figure 6. Fritz Lang's film *Metropolis* [4]



Figure 7. *Blade Runner* film [5]

3.1.1. *Metropolis*

The central vision of the "*Metropolis*" movie by Fritz Lang in 1928 is to manipulate the machine for the progress of humankind (Figure 8). The film's concept includes a futuristic city that is strictly divided between the city planner and the working class. It also shows the

visualization of the future cities. It reflects the look where dystopian urban futuristic cities are built and designed in vertical layers, rather than extend horizontally, based on the different social statuses in society (Figure 9). The architecture of Metropolis are widely recognized and seen in various major cities across the world today with different influences from different architectural styles, including Art Deco, Futurist and Gothic. Dystopian formed by the socio-political structure of the movie, supported and explained by the opposing urban environments, which highlighted the differences between social classes.



Figure 8. Central Vision of "Metropolis"



Figure 9. Dystopian urban futuristic cities

3.1.2. Dystopian Cities

Blade Runner is an adaptation of the 1968 narration "Do Androids Dream of Electric Sheep" written by Philip Dick. It represents the technology that leads to the point of dystopian future when it can make "replicants" which reflect artificial humanoid robots. That is a fictional state or a place, in which the status of life is extremely bad, as from oppression, deprivation and terror. The dystopian sight of the world is developed mainly in the 19th century Frankenstein (1818) and The Time Machine (1895). Science Fiction tries to solve the problems faced by the contemporary city. The dystopian novels attempted to characterize the form of the future cities while thinking of the modern events. The dystopian themes also appeared with global ecologic disasters, which lead to different

futures that include multinational corporations taking over, intelligent machine and people abandoning this planet. The nuclear wars caused economic explosion and increase of pollution. The narratives in science fiction use the contemporary juveniles as an inspiration theme for the future.

3.1.3. Syd Mead, Blade Runner Concept Art

Blade Runner City is a main dystopian case of the future postmodern city, where the concentration on commerce has led to the extinction of all nature Blade Runner which is an image of a doomed urban environment and a failed society. Humans attempted to leave the decaying world to go and live in the colonies. The future does not seem pure anymore or functional or mathematical as Le Corbusier imagined. The audiences see a decaying architecture with many empty or abandoned buildings and lost public spaces. Besides, the dark city cannot be shown or visible unless by using the artificial lights. The dystopian architecture of Blade Runner is deeply linked with images of distraction and disasters. The entire movie shows the pictures of the endless rain of the Flood. Moreover, the towers of the mess up city burning in its own smoke and fire.

3.2. How Dystopian Architecture leads to Oppression

It is exciting that dystopian architecture can vary from novel to novel; it is also related to some feelings that led to action which cause the dystopian. Specifically, they seem to reinvigorate the idea of government rule.

In the English countryside, the characters lived freely at home without the supervision of adults before the war. When the war broke out, soldiers took over their homes, resulting in citizens living in smaller houses. Some of them moved into the barn and eventually sought asylum in the old district.

The Hunger Games movie shows a truly similar concept. In "The Hunger Games", the Capitol contains comfortable and luxurious houses and buildings. Then, as these areas move away from the Capitol, the quality of the buildings is getting lower and lower, and they are more for shelter rather than comfort. The Hunger Games – The Capitol of Panem is all about pageantry, including fashion, food and annual teenage death matches; this mainly will start revolutions and will end up with war which is the part of the dystopian architecture.

3.3. The War

The world has gone through many battles, revolutions and wars, including small and large ones, including those that would have ended quickly and those that would have been going on for several years, and the long wars that lasted much during the First World War, a war that included many countries of the entire world. Thirty- State, and this war has many reasons, including direct causes and indirect reasons, And the impact of the First World War is that the war destroyed many crops and destroyed many

cities and millions of homes and buildings; the war destroyed the railroad in the war zones, and this is the start of the dystopian.

After the Second World War, International circumstances, which during the eighteenth and nineteenth centuries played an important role in preparing the world for the Second World War, which was an inevitable consequence of the bad conditions of the First World War.

The destruction of the buildings that happened because of the wars is the dystopian itself, and the effects of wars on archaeological buildings. One of the buildings has been affected from the war in Gaza, which is the Islamic University before and after the destruction, also the Hiroshima Peace Memorial building before and after the destruction. Hence, war is a fundamental cause of deformity, and it is a part of the distortion, which is also a part of the dystopian.

3.4. Distortion Architecture

After the war, what happened to the cities and buildings is a distortion, like the building of the Palestinian Legislative Council before and after the deformation (Figure 10). And they keep the dome as it is because it is the city's only landmark witness to the war and the monumental building is a historic symbol for them. Besides, they make it as a land mark and attraction for a tourist.



Figure 10. Palestinian Legislative Council before and after the deformation



Figure 11. Dancing house

Not just the wars caused the distortion, also the architects cause it. They think to build buildings of different shape and it will be a competition between the architects. Nevertheless, in reality this will be a

deformation for the buildings. Some things can be added in the building or the design to make it a special building but not by this horror way. Actually, they distorted the buildings, and this is the part of the dystopian, like the building which was named the dancing house (Figure 11). The building was designed in 1992 and completed in 1996.

After being ravaged by German raids during the Second World War and destroyed for more than 30 years, the Dancing House, became a prominent landmark in the Czech capital of Prague thanks to the distinctive shape of the building's image of a man and woman who danced together, indifferent to the devastation of the bombing and the war, and to reflect the spirit of the soft revolution in Czechoslovakia at the end of 1989. It was a peaceful revolution on the one-party Communist system that lasted for nearly 40 years and ended up in the parliamentary system.

There is a theory of architect, Victor Enrich which is twists and bends buildings. Over the last ten years, Victor Enrich has been continually reimagining landmark cityscapes through architectural and digital manipulation. The Catalan artist's ongoing series of contortions and distortions literally turn urban sites on their head, twisting, bending and braiding buildings into unrecognizable versions of themselves. He transforms architecture buildings by some computer programs to achieve or clarify his theory.

4. Towards Resilience Architecture

The Architecture Biennale [6] is a platform for regular discussions. By choosing works with specific themes, it serves as an alternative space to criticize and record the current architectural production problems and their most terrible problems [6].

As the world continues to grow and cities continue to change, architects are constantly challenged with identifying design solutions that address the endless change of urban environments. Therefore, they need to apply architecture resilience to help them maintain the world from dystopian.

4.1. Resilience Definition

Resilience is a strategy to enhance the ability of a building, facility, or community to both prevent damage and to recover from damage. Resilient design is defined as the intentional design of buildings, landscapes, communities, and regions in response to vulnerabilities to disaster and disruption of normal life, and to be flexible with the environment, and this is the right way for build or design buildings, landscapes, and other to reach the safe and healthy life.

Architectural resilience also known as building elasticity, which is closely related to the definition, defined by materials engineers, that is, the ability of certain materials

to recover from stress and adapt to sudden inputs. Weather conditions are an important issue for building resilience. In terms of materials, concrete is the core building material and has not been proven to be the most elastic material in earthquakes.

Resilience will also become the decisive quality of the 21st century globally. As a method for the unknown and unpredictable impact of climate change, as well as the multiple challenges of resource depletion, welfare loss and economic crisis, the current lifestyle lacks flexibility in these aspects.

Resilience can be built through new forms of design, new social and technological innovations, new economic models and forms of collective governance, new research methods and participatory practices, all of which depend on humans. To do this requires professional skills, because approaching the unknown requires new life, work and design patterns.

Architects have made a significant contribution to the establishment of local resilience, because they have the ability to analyze and innovate, and the building itself is rooted in the local area, unshakable. Buildings also constitute the physical infrastructure of the community; these communities are an elastic unit, the urban cell that builds the elasticity of the entire urban organism.

4.2. Resilience Purposes

Disaster-related losses are increasing across all regions, threatening the economies of low- and middle-income countries as well as outpacing wealth gains across many of the world's affluent nations, so resilient design serves to design for durability over time.

Resilience can improve the architecture of the current city and plan future flexible designs. Therefore, there is an urgent need to expand the role and participation of architects in urban systems and processes driven by government and urban institutions, and to contribute to the creation of more resilient buildings and cities.

According to the established principles, architects must assess the existing social, spatial and environmental conditions from the perspective of resilience. At the same time, architects must improve existing and future architectural design and urban planning (building and technical infrastructure). This will lay the foundation for urban strategy.

Through the use of all social spaces and environmental resources, the design and planning are always local specific flexible buildings to optimize both (structural) safety and the (reduced) consumption of materials. Thus, resilience is a long-term design principle and it is a functional. Some of architects like John M. Anderies, provided a resilience framework for the built environment. His intention is to operationalize resilience by introducing additional tools and concepts from different disciplines and fields of application [7].

4.3. Resilience is the New Sustainability

In recent years, disasters show the need to rethink of how to build for the future. The challenges include climate change, increasing urbanization and population growth that cause extreme weather events, pollution, rising of sea levels, urban sprawl and traffic congestion, which leads to disruptions that cripple the functioning of cities. Green Buildings is trying to improve the quality of life in the urban environment, but it is not merely about being "green" for transforming the cities. It requires a wide range of collaboration of stakeholders, regulatory, institutional frameworks and authorities within an urban community. Resilient cities can regain their function and structure after significant impacts quickly. It has the preparedness and capacity to protect people from risks, bounce back to being vibrant and maintain operations at times of crisis. It means to decrease the vulnerabilities of the built environment, concerning structural responses to a constantly changing, built structures and complex urban system.

Resilience must be part of the design focus in future. It believes that it is the architects' responsibility to design a resilient environment that adapts to natural conditions and be more successful to recover from adverse events. This means architects will qualify to recommend products and materials that attribute value and desirable regarding resilience, such as strength, efficiency, durability, flexibility and cost-effectiveness. Nowadays, the "blue" building idea takes "Green" building standards and methods to a new level. In Green Buildings, the emphasis is mainly focusing on energy efficiency [8]. While the Blue building certification concentrates more on sustainability throughout the whole life cycle of a building. The blue color represents the resilience and security. To transfer the cities for the future, it required investment in both `blue` and `green` design and planning. The `Blue` building institute request to remove obstacles and lead to create a dynamic infrastructure for the ecosystem in the form of "built environment and human health". Resilience is not the new sustainability. It is integral and essential part of the sustainable system. The built environment is a complex system including managing and responding to key challenges around urbanization, globalization and climate change to sustain a good quality of life. From the design perspective, it is not just about materials and product used, but how they incorporated into the system and arrange an entire life cycle to reach best sustainable outcomes for the infrastructure and buildings.

4.4. The Resilient Design Principles

There are several principles required to consider for resilient design and the explanations of each principles are tabulated in Table 2.

Table 2. Resilient Design Principles [9-11]

Principles	Explanations
Resilience transcends scales	Strategies to address resilience apply at individual buildings, communities
Resilient systems provide for basic human needs	These include potable water, sanitation, energy, livable conditions (temperature and humidity), and lighting
Diverse and redundant systems are inherently more resilient	Social systems are better able to respond to change, making them inherently more resilient
Simple, passive, and flexible systems are more resilient	Flexible solutions can adapt to changing conditions in the short and long term
Durability strengthens resilience	The beautiful building will be maintained and last longer
Locally available, renewable, or reclaimed resources are more resilient	Relying on abundant local resources, such as solar energy
Resilience anticipates interruptions and a dynamic future	Adapt to climate change with rising temperatures. Rising sea levels, increasing floods and wildfires, natural disasters not related to climate, such as earthquakes and solar flares, and anthropogenic actions like terrorism, also call for resilient design. Responding to change is an opportunity for system improvements.
Find and promote resilience in nature	Relying on and applying lessons from nature. Strategies that protect the natural environment enhance resilience for all living systems
Social equity and community contribute to resilience	Social aspects of resilience can be as important as physical responses
Resilience is not absolute	Implement what is feasible in the short term and work to achieve greater resilience in stages

4.5. Resilient Buildings

Some of the efforts toward resilient is the School of Design and Environment of the National University of Singapore that aims to promote innovative ideas and propositions towards the resiliency of Asian cities responding to the environmental effects caused by climate change. Also in different part of the world, people are trying to achieve resilient in many buildings in different part of the world.

In 1924, architect George Martin responded to an article about whether the New Woolworth Building would collapse on a windy day. Skyscrapers often make people nervous in the early days, but "any building has a well-known quality, that is, it is well built, called elasticity, which allows materials to return to their original state under pressure. He observed the Church tower built of stone, which "had passed through The Thirty Years' War and bore the marks of solid cannon shot" [12]. The architect explained the same principle of resilient engineering.

**Figure 12.** Sendai Mediatheque building [13]

Another example is shown in Figure 12, the Sendai Mediatheque building designed by Toyo Ito during the earthquake in 2011. It is designed to withstand huge impacts, and each floor floats on pillars so that the floor slabs will fluctuate, but the structure will not crack.

In recent years, vigorously promote the earthquake resistance of new buildings. After the 1994 Northridge Earthquake in California, extensive promotion engineers gathered across the country to study the response of buildings to different soils. It can simply raise the building above the flood zone to keep it dry. Figure 13 shows another example in Nomi, Japan. The huge special cable curtain is the latest earthquake-resistant innovation in Japan, combining functionality and stylish design.

**Figure 13.** Earthquake-Resistant Building Made with Carbon Fabric [14]

5. Conclusion

All in all, this study outlines the reasons behind

dystopian that covered the roles of human being and the built environment as well as the architecture mistakes that lead to dystopian. The potentials architecture mistakes that could lead to dystopian are high-rise buildings, materials used, construction mistakes as well as failure of studying climate, orientation, and site analysis. This study also discusses on the how dystopian architecture leads to oppression and the main factors are war and distortion architecture. Lastly, resilience is the new sustainability. Towards the resilience architecture, this study included the resilient design principles as well as discussed on the resilient buildings. Since building flexibility is a major concern today, builders need to pay more attention to the choice of building materials, including seams and waterproof tape. Resilient buildings must be able to withstand strong natural and man-made disasters, depending on the ability to prepare and plan, absorb, recover, and more successfully adapt to adverse events.

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