

Architectural Revolution in Arab Cities under Global Change and the Future of Arab Cities

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Abstract Lately, modern modification in the social and economic conditions all over the Middle East has become more essential. The region is inhabited with the transition from the ancient societies and economies to a well-developed modern region that is still in motion to seek its stability in which architectural and economical points of view are taken into consideration. In the nature of master planned communities or town planning, many modern planning and operating had been done. Nonetheless, the developments of the Arabs cities have caused many issues to surface which are related to the town designers and planners who were accounted for designing and developing these cities without the effective and efficient concept of culture, constraints, and region. Their shortfall had led to major mistakes which were conducted in the process of planning and developing of most Arab Cities. Thus, this paper collected the information from articles and addressed the Arabs cities in the past; entail the origin and development of ancient cities, urban planning, ancient architecture innovation and lastly ancient skyscraper. This study also discussed the Arab Cities after the industrial revolution and technology. Moreover, this study covered the modern cities and technology, as well as the impact and adaptation towards climate change. Finally, a case study from Saudi Arabia is used to identify the architectural revolution under global change. By 2030, the economic advancement and rise of the educated young generation is expected to gradually shift towards modern architecture

and change the whole face of Saudi Arabia as a country.

Keywords Global Changes, Arab Cities, Modern Modification, Urban Planning, Architecture Innovation, Revolution and Technology

1. Introduction

Despite the fact that the Arab cities portray a multiplicity of growth patterns and origin trends, the Arab cities were nevertheless recognized by an ordinary group of religions, "geographic" and social factors leading to a comparable "morphological" standard initiating the urban structure. In the urban context of design, according to Frank [1], he defined it as "the underlying factors of urban form that draw upon society's attitudes towards and in relation to physical elements and spaces". Without a doubt, the Arab Cities may be viewed with a combination of various eras and culture as they emerged in touch with the Islamic culture with at the end lead to the morphological type and urban structure type in the current Arabs cities [2].

Taking other cities across the globe into consideration, the original section of the Arab settlement depended mostly on the existence of the regional natural resources like the availability of the trading routes, water supply and in most of the times the religious necessity of various

locations. Most of the times, it was the integration of these forces and other unmentioned factors which played a bigger position in the settlement's growth and site. For example, the "holy city of Mecca" was a buy and sell path prior to turning out to be a significant pilgrimage area [3]. Also, Medina turned out being an Oasis due to its water supply and progressed with its development due to the Frankincense trade pathway. Cities like Baghdad, Cairo, and Damascus urbanized as a result of the geographic area that benefited from the water distribution and along with the trade routes.

At the same time, the starting point of the Arab cities was needed on the significant peripheral forces; the Arab Cities' ancient development was challenged by various factors. One the challenge was the division of the social hierarchy. Conventionally, the citadels, palaces, residence, and camps of the authoritative class were grouped

differently from the common herd. This meant that the complicated structures were utilized as the familiar sight structures on the boundaries of the biggest cities away from the focal point of the urban centers. These structures were linked with the top social class people, mosques and other religious organizations, local trade and crafts, and the community facilities.

Another contributing factor behind the development of the Arabs cities was the ethnic migration. As the migration took place, it resulted in the growth of two different towns which linked themselves to the urban centers. These towns acted as the major routes and developing significant traffic ways outside the urban centers. The Arabian Peninsula (Figure 1) is a peninsula in southwestern Asia and northeastern Africa, bordered by the Red Sea to the west and the Persian Gulf to the east [4].



Figure 1. Political Map of the Arabian Peninsula [4]

1.1. Ancient Urban Planning

An Arab Cities plan was developed in two different ways. That is the spontaneous way or the planned way. The spontaneous development pattern was cleared by the official drawing of palace urban in reaction to the concept of the military and the representation of royalty and power. These expansion trends were in accordance with the social order and culture order of the Islam. They were established in a more spontaneous or organic approach distinguished by social groups and private communities. Instead of being structured by a formal arrangement, the Arab cities developed in accordance with the demands of the population [5].

Beginning with the center of the Arab Cities, the mainland utilized trends focusing on the "multifunctional core structure enveloping or at least partially surrounding the central mosque by different layers of interconnected souks (the typical form of Arab shops and markets)" [6]. All these were organized in the commercial institution in an approach of caravanserai, educational and civic buildings, social structures and religious structures. In all, the congregation of structures and facilities builds a bigger mosque complex with a just great arena of the mosque and the minaret constructing a shelter in the rooftop. The focal point of the mosque turned out to be the fundamental open area of the city population and mosque complex. As the mosque complex turned out to be the focal structure of the Arab cities bounded by the trading areas, the circulation system of the souks turned out to be the primary right of entry to the fundamental mosque complex, frequently with a carious entry point on every side. Other small open areas are located at the edges of the main routes initiated by the caravanserai and smaller religious institutions which turned out to be a unique public space with different social activities balancing the society's requirements.

Visually, the mosque complex and the supplementary amenities seemed as one structure [5]. Still, in an experimental perspective, the focal point of the mosque complex was divided by the architectural cues and social behavior. Architectural information like detailed doorways, thresholds, passages, and gateways showed a change in operation and delicate prompts in spatial trends showing a modification in conventional social behaviors. All over the center, people who visited experienced a group of interrelated and distinct areas still a homogenous urban center as a whole [5].

Linking the fundamental facility to the rest of the city was an integer of primary routes that acted as spines. These roads linked the outer walls of the mosque complex to the external part of the city. Each of the roads was creased with shops which acted as the people's path routes and took advantage of all capable customers as they move all over the cities.

1.2. Ancient Architecture Innovation

"The morphology of the Arab cities" was constructed by a recurrence of clusters and cellular residential blocks at various measurements (Figure 2).

As each compartment interrelates, the urban fabric turned out to be a structure of "hierarchical" subjects of different sized units making a complicated trend of homogeneity and unity. This turned out to be significant as the subunits and entire units of the cities were viewed as an inclusive fashion qualified to their personal architectural objective. The fascinating thing was that as the measure increased, the subunits of personal units were indistinct permitting the architectures to study the content differently as far as different measurements were taken into consideration [8]. The actual sense of the matter is that each approach of the Arab cities shared similar structural standards and these made them be compatible. Due to the environmental factors of the open space and the courtyards, addition, development, and bond were promising in any step of the expansion. This permits maximum flexibility of the Arab cities. Furthermore, courtyards provide thermal performance, natural light, privacy, security, visual connectivity, daily and seasonal activity spaces during peak summer months [9].

1.3. Ancient Skyscraper

At the center of Yemen's Wadi Hadramaut, a bunch of the traditional mud skyscrapers ascends above the desert area. This was a symbol of hope, of the man's flexibility to the most redoubtable of surroundings. Every attribute of the Shibam's structure was planned. That is, the ancient skyscraper was suspended on a rock-strewn spur that was surrounded by the biggest flood wadi. The Shibam elevation shielded it from flooding and at the same time maintained closeness to its core sources of agriculture and water. The city was constructed on a rectangular framework which is behind the fortified wall. The fortified wall was a defensive understanding which secured its population from other competing tribes and provided a high traditional location from which the rivals would be observed when approaching [10].

The mud made stones that stretched up to the seven stories high, were built from the soil that was adjacent to the city. Hay, water, and soil mixture was made into bricks and was left to harden in the sun for several days. The ground floors and windowless were utilized for grain storage and livestock, whereas the topmost levels were used as a communal floor for entertainment. Doors and connective bridges amid the buildings offered a quick escape route. This one was used as a defensive strategy by the people of Yemen [10].

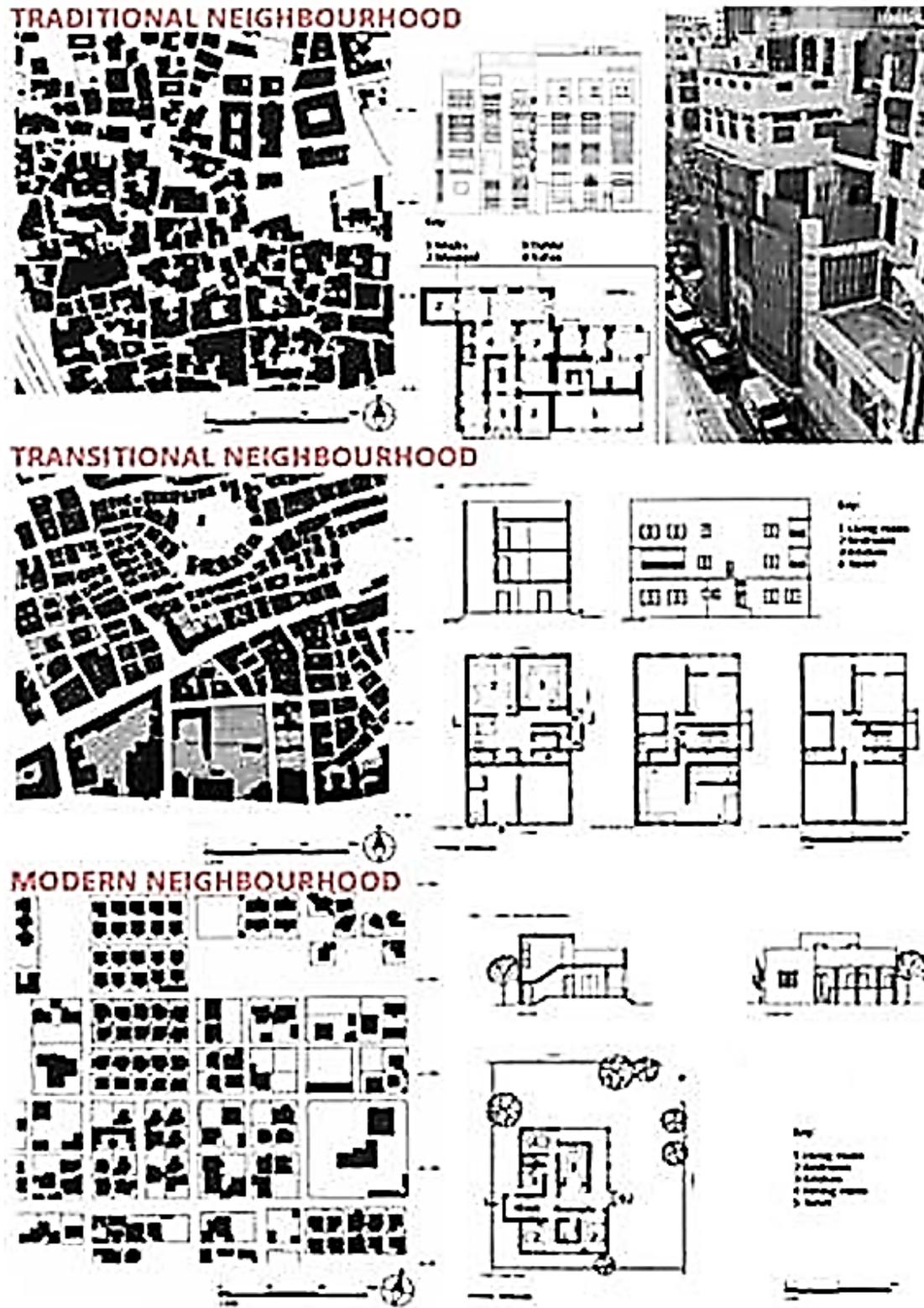


Figure 2. Different stages of urban form at the community and housing design level in Jeddah [7]

2. Arab Cities after the Industrial Revolution and Technology

2.1. Modern Cities and Technology

After industrialization, the dynamics of the socioeconomic transformation that was fostered by industrial era establishes their substantial illustration in the modern changes of the customary Arab cities. Throughout the preceding centuries, transformation in the “architectural structure” and urban areas had often taken place as a segment of the ordinary “evolutionary procedure”. The new advancement was of distinct environment. This was because of the documented speed and the biggest rates of the advanced constructions.

The physical advancement of the customary Arab cities was predicated on the mechanism selected by the majestic rules in formulating the cultural choices, the geographical significance of the area, and reconditions of the administrators who were responsible together with their architects. The rate of the urban involvement was characterized by two domains. According to Bianca [6], "One consisted in superimposing the new city on the old historic fabric by cutting out large new roads and sites for major public buildings. The other one consisted of setting up completely new colonial cities on virgin land, without seeking any interface with pre-existing urban structures [3]. This kind of construction urbanization policy was founded in Damascus, Baghdad, and Cairo.

In the modern era, as far as architecture is taken into consideration, the application of sustainability standards on the modern housing structure has taken a distinct appearance. These appearances fashioned the architectural patterns which are distinct in their characters and forms and at the same time, they have similar content and principles. A large quantity of sustainability patterns has a significant effect on the architectural image and the identity of the Arab Cities.

Taking the modern technology trend into consideration, the modern technology patterns show the submission of the developed western technology [11]. This takes place when it comes to dealing with the sustainability standards. The followers of this pattern request for the universality of the sustainable architecture as an outcome of their high regard for the international perception of sustainability. The followers of these patterns in the Arab nations approve the most developed technological responses in their structural designs. According to Dogan Kuban, "the mass of knowledge which comes from the west cannot be ignored, nor is its impact neglected. But this does not mean that we have to be subservient to the bigotry and cliché of modern jargon". From this, the best manner to respond to western technology as far as Arab architecture is concerned and is to analyze its developments, deposit it, and then consume what is important in terms of its significance in the cultural and social context of Arabs [11]. With the advanced

knowledge of housing designs and modern technology, it is best to acknowledge that the Arab Cities building varies in terms of the local context and project budget. The architectures use photovoltaic structures as a successful way of using solar energy that is regarded as the most significant source of energy in the Arab cities. Also, the architectures use the glass technology, which has turned out to be a pattern in the Arab cities were "high thermal performance glass with the photovoltaic system" is utilized to combine the theory of producing renewable energy with a structure of minimizing energy consumption. Besides, using the modern technology, the architects are able to recycle gray water using the recycling water structures and the recycled water could be utilized to reduce economic constraints as far as water supply is concerned [12].

2.2. Climate Impact

When it comes to urban planning, at least seventy-five percent of the infrastructure and the building in the Arab cities are a direct hazard of the climate change effects. This effect comes mostly from the sea levels where the population in these areas will experience higher frequency and intensity of storm surges and hot days. It is believed that in one year time, the urban cities will experience at least four months of severe hot days. Also, water supply, energy generating stations and waste-water networks are believed to be at a major risk [13].

As far as water supply is taken into consideration, it is believed that with at least four months of hot days, the water level will decrease. This will be a major challenge to the Arab architects since their efforts of constructing sustainable houses will be looked down by natural challenges such as sea level rise.

Furthermore, since it is believed that the energy generated will be at risk, this means that the Arab cities will have no energy. As a result, most people who live in Arab cities or who have come to visit Arab cities will see no signs of constructing a complex well-designed house with no electrical power. As a result, people will lose interest in the Arab cities and focus their attention on other countries with the same view as Arab cities but which have energy.

Lastly, since most people come to Arab cities such as Dubai for tourism, nature, with the climate change causes, the tourism rate of foreign people or even local people will reduce drastically. This is because, the water level will have reduced significantly, and the energy consumption will be at zero rates. This will make it difficult to stay or visit Arab cities.

2.3. How Cities Adapt to the Climate Change

As far as architectural concepts are taken into consideration, the architects are using modern technology to deal with the climate changes. For instance, the architectures use photovoltaic structures as a successful way of using solar energy that is regarded as the most

significant source of energy in the Arab cities. Also, the architectures using the glass technology, which has turned out to be a pattern in the Arab cities were "high thermal performance glass with the photovoltaic system" is utilized to combine the theory of producing renewable energy with a structure of minimizing energy consumption. Moreover, using the modern technology, the architects are able to recycle gray water using the recycling water structures and the recycled water could be utilized to reduce economic constraints as far as water supply is concerned. With the above modification, the Arabs cities such as Abu Dhabi, Dubai, to mention but a few get their lives backs and become a center for all [12].

3. Arab Cities in the Future

In the twenty first century, it is evident that the need for modification of the cities around the world is attributed to the salient problems of environment faced. These ecosystem issues have heavily featured in the field of political agenda, scientific studies and warnings and public media attention. However, Arab region, which is undergoing massive transformation of its cities has not been spared either when it comes to the topic of environmental sustainability [14]. Hence, it is crucial for the Arabic to adopt a holistic approach in the attempt to mitigate the risks posed by the environmental degradation. While special architectural development strategies have brought changes in the overall global picture of the region, the patterns of these developments have been perceived to be largely unsustainable. Mostly, the policies have overwhelmingly provided short term measures to address the challenges instead of engaging in long-term planning [14]. With the unprecedented growth in most of the Arab cities, it is vital that the developers should be concerned with their sustainability in the future. According to Tolba & Saab [14], application of biophilic in cities and sustainable futuristic visions of the cities increases the chances of realizing the dream of transforming the cities into paradise.

3.1. Biophilic Application in Arab Cities

Despite the Arab region being endowed with rich and special natural resources, it is experiencing distinctive environmental issues and circumstances. City developers are having insufficient knowledge on the significance of the environment in promoting and sustaining national economic growth, as well as enhancing human welfare [14]. In response, inadequate environmental considerations have been integrated within their city development plans and building policies resulting in unsustainable utilization of the resources in development plans. Scholars have established that the environmental degradations cost the Arabic nations about 5 percent of their GDP [14]. Nevertheless, some cities, such as Dubai have started applying Biophilic strategies in the national metropolitan

development initiatives to address ecosystem insufficiencies. The approach has been facilitated by effective legislation which ensures that more considerations for the environment are integrated into the city's development plans [14].

Biophilic design involves the practice of providing sustainable development designs in the cities which interconnects the people with nature [15]. In the application of biophilic cities, city development programs, approaches are oriented towards building of greening all the city life [16]. This is validated by the presence of an advantageous environment in which there is a variety of countless birds, animals, with a large tree cover and garden parks [16]. Hence, a biophilic city is certainly meant to improve the physical conditions of the area to make them environmentally sustainable [16]. As a result, it depicts that urban architectural designers and policy makers have an emotional commitment and spirit of nature concerns as well as other forms of biodiversity. The elements of nature and biophilic design require that everything that is designed or built in the cities from schools, residential buildings, hospitals and the overall urban configuration, the streets, road infrastructures and the regional designs and plans should reflect environmental sustainability [16]. For example, the dynamics of hospital design trends includes the formation of integrated medical buildings that emphasize the intensity of treatment, the personalization of design decisions, the formation of aesthetic spaces with healing potential, ecological approaches and harmony with the environment [17].



Figure 3. Dubai city [19]



Figure 4. Tall structures and Marina in Dubai [20]

A look at the design patterns of the Arab cities from the past century reveals that Biophilic parameters are underway within the process of their transformation. Therefore, the analysis of the historic examples of city buildings and landscape from the regions would demonstrate the regions perspectives on Biophilic sensibilities and provide evidence of the presence of biophilia informed generation of policy makers, architectures and designers. According to Kellert & Calabrese [18], empirical evidence from the past city landscapes establishes the human connection with nature in the design practice. Before the past two decades, most Arab Cities landscapes have a very small proportion of tree cover; the architectural buildings were insufficiently sustainable as shown in the Figure 3 [19] and Figure 4 [20].

The Arabic cities therefore were subjected to the problems of air quality, management of water, and biodiversity among other environmental implications. This demonstrates policy making and advocacy on the environment and the application of sustainable environment and development strategies were ineffective.

However, today the situation is under transition and is backed by functioning environmental agencies which create the awareness of sustainability in the regions [14]. For instance, the Abu Dhabi environmental agency launched in 2008 is responsible for setting long-term strategies in Emirate city planning. In addition, such initiatives are common all over the Arab countries [14]. The application of biophilic designs on the architectural landscapes of these nations is one of the proposed plans. Therefore, some of the cities are reflecting biophilic perspectives as different types of the biophilic designs have been discovered and implemented. As a result, some buildings look like trees and cities appear like forests, which demonstrate nature and natural system wisdom in design and planning. When a city is functioning like a forest, it is imaginable that there is a balanced carbon and energy utilization and production. Hence, people are starting to celebrate biodiversity as cities are moving towards being resilient in the presence of issues of climatic change.

In the last decade, most of the cities are designed with less concern for environmental sustainability, endeavors are visible through the use of integrated approaches [16]. Designers and architectures are overstating the importance of environmental issues such as water conservation, energy, lighting, waste management and air quality with minimal emphasis on Biophilic design application. Nevertheless, the constructions of some of the modern buildings such as Dubai sustainable schools in Figure 5, signify that indeed the Arab region is aware of human connection top environmental recovery. In summary, a small proportion of Arabic cities display the biophilic elements in the buildings, neighborhood and the city landscape. Buildings are starting to implement green roof tops, indoor potted plant environments, vertical plant walls and outdoor environment. The neighborhood streets, islands and

waterways are starting to incorporate trees, zoos, parks, bark yards, biodiversity corridors, rivers and forest. This innovative inclusion of biophilic elements supports the creation of microclimate environments that effectively supports environmental and biodiversity benefits to the public. While great Arab cities such as Dubai are expanding at extemporary higher rates, building designers, government and urban planners are yet to realize the full application of Biophilic Urbanism.

Therefore, short-term planning may be a major obstacle in the development of cities that are environmentally sustainable [14]. Considering the common state of the environment that binds the Arabic countries together, the future hope of the region on environmental sustainability rests on its long-term planning strategies recognize the benefits of biophilic practices. However, the short-term strategies should reflect long-term plans to offer a solution to today's and tomorrow's challenges with Arab cities. Nevertheless, the direction of Arab urbanizations policies and development strategy offers a hint on the future vision of the Arabic nation to develop futuristic cities that represent environmentally sustainable paradises.

3.2. Futuristic Vision of Cities

While in the past, inefficiencies of short term planning strategies affected the success of environmentally sustainable urban development approaches, some attempts which go beyond addressing the pressing environmental issues through pursuing long-term and land plans are termed as a futuristic vision [14]. The future of Arab cities should be viewed in terms of the application of sound environmental plans which recognize that future environmental challenges by just concentrating on the current issues faced in the region [14]. However, if present problems are not adequately solved, they would magnify themselves to create even bigger threats in the future cities. Hence, some excellent practices announced in the region on the use of renewable energy, water conservation, quality air and biodiversity management should not redirect the cities from working for sustainable resource utilization for human benefits. Nonetheless, the fate of Arab cities is inevitably tied to the current state of their environment which bring the nations together and giving them a larger stake in the world environmental initiatives. As a result, the futuristic vision of Arab cities is determined by sustainable approaches to the environment.

According to Relly & Kalss [21], in future cities, the natural environment forms part of their urban space and covers the whole city, while it acts as a major source of food for the city and its neighborhood. With increased oil production in a large proportion of the Arab region, costs of food imports from the surrounding regions is a significant concern for the nations [21]. These futuristic cities would need to be self-sufficient [22]. For this vision to become a reality, in the cities, there is need to develop and design more green space, which increases

opportunities for people growing food around the urban cities, either in parks, backyards or vertical walls. However, not all land should be used for food production as the public also requires nature for their recreational purposes. Since, biophilic design in city development has become prominent in Dubai, it is notable a good reflection of a future Arab Cities as shown in Figure 5 and Figure 6.

Future cities would de-emphasize on the utilization of road transport in favor of special rail, and transit technologies [21]. This means that there is the need to minimize the use of motor vehicles in cities to reduce their deleterious effects of carbon emissions. Encouraging walking, cycling and mass transit systems demonstrate the need to consider the impacts of road transport system in a more holistic manner. Therefore, it is not effective to look into the widening the roads to accommodate more cars, but consider using electric vehicles and trains which use renewable energy and are less polluting in the endowment [21]. The future city would use solar powered cars and will have a minimal focus on road development.



Figure 5. New plan for a new Dubai sustainable school [23]



Figure 6. New plan for headquarters for Dubai's Roads & Transport Authority (RTA) [24]

From the Arab Cities case study, the physical structure; planning and design of the city should reflect personalized human needs. The layout of the city and the architectural design must be loved by man. The Arabic cities and significant world cities such as Dubai have incorporated design principles that reflect several decades of wisdom in

rediscovering the fabrics of the old city into automated design attributes that offer arguably some of the best street landscapes. Thus, future cities should depict good designs that provide benefits to a diverse range of people while offering them a process of participation.

In addition, decisions on futuristic cities must be sustainable based and integrated within the social, cultural, economic and environmental contexts [21]. This approach to decision making is on city designing, planning and development involving a democratic but inclusive process that empowers hope and engagement of the communities in the region. Therefore, it is not surprising that Arab cities are working toward realizing sustainable development. By incorporating all aspects of the region in the city architecture, it shows that decision of future cities should be made through practices beyond the normal process of planning. This is the reason to why numerous activities within the cities such as water and waste management, and air quality checks are related to sustainable development. The major characteristics of the planning decisions in future cities are the stakeholder engagement efforts. For instance, the collaboration between the government, environmental agencies, urban architectures and planners, as well as the residents or the general public, these features constitute today's cities and their capacity to induce a new promise about the sustainability and resiliency of future cities.

Though cities in the Arab region have realized that their future paradise lies in the innovative approaches to their environmental issues, their grand plan needs to give priority to environmental sustainability [14]. The implementation practices accompanied by increased environmental concern, awareness on sustainability by the government, the citizens, media and agencies, among Arab cities depict the need for more efforts in the realization of futuristic paradise vision. Emphasizing on holistic approaches to environmental issues facing the region will form the tomorrow's fate of the region.

4. Case Study

However, the apex of the research has the critic of the efforts that Saudi Arabia has taken and their possibility of yielding the expected results by the year 2030. In addition, it is amazing that so far so good with all that is being done. It has been highlighted that the version of the ban on driving for women in Saudi Arabia together with the given right to own property and compete in education systems with the male gender is among the pinnacle things that are being expected to boom this investment in Saudi Arabia by the year 2030.

This is because the rise of women in technology and education will also arise many of other sectors even the markets for electrical gadgets as these women will now need more of these facilities in order to suit their advancement needs. Above all, the economic advancement

together with the rise of a youthful educated generation is expected to gradually remove the traditional setting of lifestyles, including Architectural designing of the housing to the modern architectures and look. This is then said to have the potential of changing the general look of Saudi Arabia as a nation by the year 2030.

4.1. Discussion

Nations in the world are said to be in a quick succession of transformation in holistic aspects of their systems, including economic, social and even political system. However, all is the architectural and urban planning together with the present witnessed great race of technological advancement. In this, Saudi Arabia has not been left behind. Being also among the countries in the world with a developing and advanced economy, this country then has its millennium and also short goals it aimed at achieving despite facing challenges of all nature just like any of the other countries in the world today. The country is said to have set high goals of achievement in these sectors including already experienced achievements in the development agenda of their 2030 vision.

Amidst the stiff competition the nation is experiencing from China, Japan, and other rising economies, Saudi Arabia is optimistic that with the given time, it will have transformed its architectural designs and urban planning together with technological advancement and is set to have among the tallest building in the world which are said to dwarf the rest of the other buildings in this and other regions in the world. The country is also aiming at changing its dependence on the fossil fuels in the economy with an aim of targeting tourism in the near future. This is the reason as to why the aspect of architecture is coming in and the very reason for the investment of that field.

This might have been the reason as to why King Salman has commissioned a commission to oversee the renovations of the abandoned historical and architectural sites of the Al-Ola and Diriyah Gate. He emphasized that he does not want to leave things at chances and that every effort that can facilitate the achievement of this dream should not be spared. The country is also committed in educating the general public on the idea and the vision of this nation for the architectural advancement even with a word vernacular of mouth just to ensure that the whole idea is sent forth and that the earth architectural designs of the traditional housing. This aid is meant to be a transformational step that will help much in the actualization of the whole idea. This is affirmed by the fact that Mecca was once a city that was traditionally architecture and which is now among the cities in the world with the most advanced architectural designs in the housing.

Saudi Arabia is to this date still having the traditional forms of the architecture in the housing patterns, but this is expected to change in accordance to Mortada [25]. The hot

and desert climates of this nation are among the reason as to why the traditional housing is still preferred and the fact that the mud is readily available.

However, there are several factors which are said to affect the change of this trend in the years to come in this nation. The fact that most of the young people improving the cities in search of opportunities for better lives, they will be subjected to the education and challenge of the modification of their household and which will boost the rural modifications of the housing architectures. This will transform these houses into stone and glass houses in accordance with the developmental agenda of this nation. The society is also said to be slowly moving from a conservative one to a determined one and which will be readily at ease to accept these changes and boost these development agendas.

In the Mecca city today, Saudi Arabia still stands a nation with among the most thrilling buildings in the world. This tower is said to be among the tallest buildings in the world being under finishing construction in this nation and said to dwarf all the other houses in this region and also other regions in the world.

Saudi Arabia as a nation is also said to have taken and to be in the process of turning to the investment towards the attainment of this vision of 2030. By giving their women ability to own property and to drive together with other empowerment of the women were among the expected pinnacles of the achievement of this goal for this nation. This is because of the virtue of their capacity these, it will boost the market and trading markets for technological gadgets as the market will have expanded. However, though the nation has a great plan for the urban planning and advancement, there is still quite limited land for the establishment of much of the government given housing. This is said because of a past activity that the government gave its land voluntarily to its citizens for the establishment of settlement areas and they are now having difficulties to consider economic developments in these areas as citizens due to their personal ambitions and plans. This is said to be a factor which will make this nation establish the government establishments as far as 80 km away from the national capital. Nonetheless, this is said to also boost the expansion of cities and bring a positive influence.

With the example of Mecca which was once a traditional city in architecture and technology and to what it is today, the Saudi Arabia vision of being among the leading on housing and planning together with technology is said an achievable thing. This is because, with the lid measures and the consistency their government is putting in use of this, the achievement of the vision is the something that they can achieve in plan with their development agenda.

Through investment in housing and planning together with the architectural designs, it is possible that Saudi Arabia will boost their capacity for economic tourism and they might stand the competition from their stiff and close enhanced economies in the world today.

5. Conclusion

In conclusion, the global transformation of cities through time reflects the social, economic and technological development as city's growth organically by its community. However the revolution of transportation technology has dramatically impacted the settlement patterns in the early part of this century which was markedly different from the past where the urban planning of old Arab cities was significantly simple and sustainable. The change from gathering, agricultural society to the industrial production community has dramatically changed the patterns of urban settlements of Arab cities and globally seeking global solutions of adaptation where sustainability takes the first place since climate change is a significant issue.

In addition, for a few portions of the populace, particularly bring down wage gatherings, adjusting to monetary change is troublesome, bringing about confounds between abilities, demeanors, and opportunity. Since these populace bunches are all the more vigorously moved into specific areas and parts of metros, these spots have felt the impacts more significant. Adaptation today is the biggest challenge facing the urban planning where all the global visions of cities will definitely lead to planning resilient and sustainable cities according to the problems that affect the globe which is the climate change. Many Arab cities started to change even in a slow pace compared to other city but it has the potential to be adaptive according to people's needs.

The close connection amongst urban communities and technology, including transportation, infrastructure, broadcast communications, process innovation, and mechanical and work association, prompts bumbles and conflicts. Beneficial frameworks, particularly in market based economies, are portrayed by their smoothness and receptiveness to change, especially originating from the presentation of new technology frameworks. Despite the fact that at a slower pace, the populace's salary, statistic attributes, aptitudes, and ways of life likewise change and advance, prompting new inclinations of areas, urban communities, and neighborhoods. Interestingly, urban areas and their establishments adjust much more gradually. Without adjustment, structures can be surrendered or underutilized and land can end up empty. Foundations can end up unbendingly and ineffectively suited to new difficulties.

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REFERENCES

- [1] K. Franck. Types are Us. In K. Franck & L. Schneekloth (eds) *Ordering Space: Types in Architecture and Design*, Portland: Wiley & Sons, 1994.
- [2] Rapoport. *Human aspects of urban form: towards a man-environment approach to Urban form and design*, Elsevier, 2016.
- [3] H. Maroufi, and E. Rosina. Cities Hosting Holy Shrines: the Impact of Pilgrimage on Urban Form, *Iconarp International Journal of Architecture and Planning*, Vol. 5, 30-44, 2017.
- [4] Map of the Arabian Peninsula, Middle East, One World - Nations Online, Online available from <https://www.nationsonline.org/oneworld/map/Arabia-Map.htm>
- [5] R. Lawless, and G. Blake. *The Changing Middle Eastern City*, Routledge, 2016.
- [6] S. Bianca. *Urban Form in the Arab World: Past and Present*, New York: Thames & Hudson, 2000.
- [7] Osra. Urban Transformation and Sociocultural Changes in King Abdullah Economic City (KAEC) 2005-2020: KEY RESEARCH CHALLENGES, *Journal of Advances in Humanities and Social Sciences JAHSS 2017*, Vol. 3, No. 3, 135-151, 2018.
- [8] M. Salama. *Evolution 9 in the Arab region, Time Frames: Conservation Policies for Twentieth-Century Architectural Heritage*, 2017.
- [9] G. Gangwar, and P. Kaur. User's Perception of the Relevance of Courtyard Designs in a Modern Context: A case of Traditional Pol Houses, Ahmedabad, *Civil Engineering and Architecture*, Vol. 8, No. 3, pp. 379 - 389, 2020, DOI: 10.13189/cea.2020.080323.
- [10] M. Lamprakos. *Building a world heritage city: Sanaa, Yemen*, Routledge, 2016.
- [11] S. M. Wheeler, and T. Beatley. *Sustainable urban development reader*, Routledge, 2014.
- [12] V. Moudon. *Re-Engineering the Twenty-First- Century City: Future Directions for Urban Design in the Arab World*, *Urban Design in the Arab World: Reconceptualizing Boundaries*, 2015.
- [13] Chandran, G. Basha, and T. B. M. J. Ouarda. Influence of climate oscillations on Temperature and precipitation over the United Arab Emirates, *International Journal of Climatology*, Vol. 36, No. 1, 225-235, 2016.
- [14] M. K. Tolba, and N. Saab. Arab environment: future challenges, *Arab Forum for Environment and Development*, 2008.
- [15] T. Beatley, and P. Newman. Biophilic cities are sustainable, resilient cities, *Sustainability*, Vol. 5, No. 8, 3328-3345, 2013.
- [16] R. F. Young. The biophilic city and the quest for paradise, *Smart and Sustainable Built Environment*, Vol. 5, No. 1, 25-46, 2016.
- [17] Bulakh, O. Chala, and V. Divak. Dynamics of Architectural and Urban Planning Hospital Systems Evolution, *Civil Engineering and Architecture*, Vol. 8, No. 4, pp. 586-598, 2020, DOI:10.13189/cea.2020.080423.

- [18] F. Brown. 12 famous buildings in Dubai, 2020, Online available from <https://edition.cnn.com/style/article/famous-buildings-dubai/index.html>
- [19] Bobley. Here's Why Buildings in Dubai Keep Catching on Fire, 2017, Online available from <https://me.popsugar.com/how-to/Why-Do-Buildings-Dubai-Keep-Catching-Fire-43872859>
- [20] S. Kellert, and E. Calabrese. The practice of biophilic design, 2015, Online available from <http://www.bullfrogfilms.com/guides/biodguide.pdf>
- [21] Relly, and F. Kalss. Envisioning Future cities ideas and examples, International Society of City and Regional Planners, 2016.
- [22] N. Khansari, A. Mostashari, and M. Mansouri. Impacting sustainable behavior and planning in smart city, International Journal of Sustainable Land Use and Urban Planning, Vol. 1, No. 2, 2014.
- [23] V. Gintoff. CEBRA and SLA Design a School for The Sustainable City in Dubai, 2016, Online available from <https://www.archdaily.com/788309/cebra-design-school-for-the-sustainable-city-in-dubai>
- [24] R. Wangkhem. RTA plans new EC3 project for Dubai Expo 2020, 2016, Online available from http://www.tradearabia.com/news/CONS_308631.html
- [25] H. Mortada. Sustainable Desert Traditional Architecture of the Central Region of Saudi Arabia, Sustainable Development, 2016, DOI=10.1002/sd.1634.

