



POLITECNICO DI MILANO_ FACULTY OF DESIGN_ MSC IN INTERIOR DESIGN

“The hybridization between local characters and international traits in Dubai's architecture”

Final Thesis

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With ambitions to become a hub of global commerce, a top tourist destination and a shopping Mecca—a New York/Las Vegas/Miami rolled into one—Dubai has been spending billions of dollars to build an astonishing modern city nearly from scratch in a mere 15 years. Combining the involvement of local businesses and innovative strategies of urban marketing with headline catching projects, Dubai has set out to transform its urban landscape, and its image. Ambitious mixed-use urban development's featuring luxury residences, hotels and office blocks, huge shopping malls and imaginative entertainment complexes are rapidly changing the face of Dubai emirate and are putting the Dubai property market on the world stage. But in the meantime what happened to this city's history of architecture? How was the city transformed and what characters were mixed to give birth to the architecture we see in Dubai today? Is it true that the migration of an architectural style from an area to another foreign area is something that should be rejected because it will cut its relations to its heritage, traditions and culture? Does it lead to double personality and the loss of one's identity? Could Dubai develop from a desert to a cosmopolitan city by keeping also its own character?

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Chapter 1

1. Introduction

With ambitions to become a hub of global commerce, a top tourist destination and a shopping Mecca—a New York/Las Vegas/Miami rolled into one—Dubai has been spending billions of dollars to build an astonishing modern city nearly from scratch in a mere 15 years. Combining the involvement of local businesses and innovative strategies of urban marketing with headline catching projects, Dubai has set out to transform its urban landscape, and its image. Ambitious mixed-use urban development's featuring luxury residences, hotels and office blocks, huge shopping malls and imaginative entertainment complexes are rapidly changing the face of Dubai emirate and are putting the Dubai property market on the world stage. But in the meantime what happened to this city's history of architecture? How was the city transformed and what characters were mixed to give birth to the architecture we see in Dubai today? Is it true that the migration of an architectural style from an area to another foreign area is something that should be rejected because it will cut its relations to its heritage, traditions and culture? Does it lead to double personality and the loss of one's identity? And most importantly, in what way did the local architecture of Dubai get influenced from the international traits?

Chapter 2

2. General info about the UAE

2.1 Brief Introduction of the UAE

The United Arab Emirates, sometimes simply called the Emirates or the UAE, is a country located in the southeast end of the Arabian Peninsula on the Persian Gulf, bordering Oman to the east and Saudi Arabia to the south, as well as sharing sea borders with Qatar, Iran and Pakistan.

The UAE is a federation of seven emirates (equivalent to principalities). Each emirate is governed by a hereditary emir who jointly forms the Federal Supreme Council which is the highest legislative and executive body in the country. One of the emirs is selected as the President of the United Arab Emirates. The constituent emirates are Abu Dhabi, Ajman, Dubai, Fujairah, Ras al-Khaimah, Sharjah, and Umm al-Quwain. The capital is Abu Dhabi, which is one of the two centers of commercial and cultural activities, together with Dubai. Islam is the official religion of the UAE, and Arabic is



Photo Source: www.wikipedia.com

the official language.

In 1962, Abu Dhabi became the first of the emirates to begin exporting oil. The late Sheikh Zayed, ruler of Abu Dhabi and the first president of the UAE, oversaw the development of the Emirates and steered oil revenues into healthcare, education and infrastructure. Today, Emirates oil reserves are ranked as the seventh-largest in the world, along with world's seventeenth largest natural gas reserves. UAE is one of the most-developed economies in Western Asia with the world's seventh-highest GDP per capita. Its most populous city of Dubai has emerged as a global city and a business gateway for the Middle East and Africa.

2.2 History of the United Arab Emirates

The earliest known human habitation in the UAE dated from 5500 BC. At this early stage, there is proof of interaction with the outside world, particularly with civilizations to the northwest in Mesopotamia. These contacts persisted and became wide-ranging, probably motivated by trade in copper from the Hajar Mountains, which commenced around 3000 BC. Foreign trade, the recurring motif in the history of this strategic region, flourished also in later periods, facilitated by the domestication of the camel at the end of the second millennium BC.

By the 1st century AD overland caravan traffic between Syria and cities in southern Iraq began. Also, there was seaborne travel to the important port of Omana (present-day Umm al-Qaiwain) and then to India. These routes were an alternative to the Red Sea route used by the Romans. Pearls had been exploited in the area for millennia but at this time the trade reached new heights. Seafaring was also a mainstay and major fairs were held at Dibba, bringing in merchants from as far as China.



Advent of Islam

Photo Source: www.wikipedia.com

The arrival of envoys from the Islamic prophet Muhammad in 630 heralded the conversion of the region to Islam. After Muhammad, one of the major battles of the Ridda Wars was fought at Dibba resulting in the defeat of the non-Muslims and the triumph of Islam in the Arabian Peninsula.

In 637, Julfar (today Ra's al-Khaimah) was used as a staging post for the Islamic invasion of Sasanian Iran. Over many centuries, Julfar became a wealthy port and pearling center from which dhows travelled throughout the Indian Ocean especially to neighboring land of Sindh and its cities of Thatta and Debal.

Portuguese rule (1506–1620)

Portuguese expansion into the Indian Ocean in the early 16th century following Vasco da Gama's route of exploration saw them battle Safavid Persia up the coast of the Persian Gulf. In 1507, the Portuguese Captain Afonso de Albuquerque sailed a small fleet into the Gulf of Oman and the Straits of Hormuz seeking a way of bypassing Arab traders and taking control of the Indian Ocean to increase the amount of wealth flowing into the Portuguese monarchy's coffers. Vasco da Gama was helped by Ahmad Ibn Majid, a navigator and cartographer from Julfar, to find the spice route from Asia.

Afonso d'Albuquerque set sail in 1506, intent on founding a Portuguese empire in the Persian Gulf. The following year, the area of the Emirates soon became a target. After sacking Sohar in Oman, he pillaged and burnt to the ground the Fujairah port of Khor Fakkan, before overwhelming Hormuz Island. Over the succeeding decades the Portuguese invested considerable time and energy in trying to keep order along the coasts of Arabia, as local Emirati tribes rebelled against Portuguese control, and in fending off challenges from the Ottoman Empire. In the Emirates, Portuguese forts were constructed all along the East Coast beginning in the north at Dibba and proceeding south to Khor Fakkan, Fujairah, Sharjah and Ras al-Khaimah. Remnants of the Portuguese forts have been located at Bidya and Julfar, but the ruins of the remaining ones continue to elude archaeologists and historians.

By the early seventeenth century, the Portuguese were beginning to suffer from the efforts of the East India Company and the Safavids to expel them from the region. They were dislodged from their base on Bahrain in 1602, from Bandar Abbas in southern Iran in 1615, and from Ras al-Khaimah in 1620.

Saudi rule (1744–1891)

Between 1744 and 1891, the Emirates was officially part of the First Saudi State, and after the Ottoman–Saudi War, was officially part of the Second Saudi State. Despite this, the first and second Saudi states had very little influence and control over the Emirates. During this time, the Ottoman Navy tried to gain influence along the coast but the Saudi rulers were too busy fighting the Ottomans in the Hejaz and therefore could never have effectively ruled the Emirates in a traditional way, let alone come to their assistance and fight a two-front war. As a result, the Emirates operated independently from the capital city Diriyah during the first Saudi state and later from

Riyadh which was the capital during the Second Saudi state. The Emirates also had an extremely high degree of autonomy. Not only could they negotiate treaties with outside powers if they wanted to, they also had their own militias and navies.

After the Ottoman-Saudi War in 1818 which led to the collapse of the first Saudi state, the British eventually got the upper hand, but the region was known to the British as the "Pirate Coast", as raiders based there harassed the shipping industry despite both European and Omani navies patrolling the area from the 17th century into the 19th. British expeditions to protect the Indian trade from raiders at Ras al-Khaimah led to campaigns against that headquarters and other harbours along the coast in 1819. The following year, Britain and local rulers signed a treaty to combat piracy along the Persian-Gulf coast. Yet according to the local Qawassim version, the piracy issue was a pretext. The British Empire tried to further establish itself in the Persian Gulf region and to secure it from any other European influence, particularly from France and Russia, not from local raiders. This version has been particularly well articulated by the current emir of Sharjah in his 1986 book 'The Myth of Arab Piracy in the Gulf'. From this, and from later agreements, the area became known as the Trucial Coast. Raids continued intermittently until 1835, when the sheikhs agreed not to engage in hostilities at sea. In 1853, they signed a treaty with the British, under which the sheikhs (the "Trucial Sheikhdoms") agreed to a "perpetual maritime truce." It was enforced by the United Kingdom, and disputes among sheikhs were referred to the British for settlement. The Battle of Mulaida in 1891 marked the formal end of the second Saudi state.

British rule (1892–1971)

The following year after the formal collapse of the second Saudi state, and primarily in reaction to the ambitions of other European countries, the United Kingdom and the Trucial Sheikhdoms established closer bonds in an 1892 treaty, similar to treaties entered into by Britain with other principalities in the Persian Gulf. The sheikhs agreed not to dispose of any territory except to Britain and not to enter into relationships with any foreign government other than the United Kingdom without its consent. In return, the British promised to protect the Trucial Coast from all aggression by sea and to help in case of land attack. British suppression of piracy meant that pearling fleets could operate in relative security. However, the British prohibition of the slave trade meant an important source of income was lost to some sheikhs and merchants.

During the 19th and early 20th centuries, the pearling industry thrived in the relatively calm sea, providing both income and employment to the people of the Persian Gulf. It began to become a good economic resource for the local people. Then the First World War had a severe impact on the pearl fishery, but it was the economic depression of the late 1920s and early 1930s, coupled with the Japanese

invention of the cultured pearl, that all but destroyed it. The industry eventually faded away shortly after the Second World War, when the newly independent Government of India imposed heavy taxation on pearls imported from the Arab states of the Persian Gulf. The decline of pearling resulted in a very difficult era, with little opportunity to build any infrastructure.

Dubai in the mid-20th century; the area in this photo now corresponds to the Al Ras and Al Shindagha localities of present-day Dubai.

Oil was first discovered in the 1950s. At the beginning of the 1960s, the first oil company teams carried out preliminary surveys and the first cargo of crude was exported from Abu Dhabi in 1962. As oil revenues increased, the ruler of Abu Dhabi, Zayed bin Sultan Al Nahyan, undertook a massive construction program, building schools, housing, hospitals and roads. When Dubai's oil exports commenced in 1969, Sheikh Rashid bin Saeed Al Maktoum, the de facto ruler of Dubai, was also able to use oil revenues to improve the quality of life of his people.

In 1955, the United Kingdom sided with Abu Dhabi in the latter's dispute with Oman over the Buraimi Oasis, another territory to the south. A 1974 agreement between Abu Dhabi and Saudi Arabia would have settled the Abu Dhabi-Saudi border dispute; however, the agreement has yet to be ratified by the UAE government and is not recognised by the Saudi government. The border with Oman also remains officially unsettled, but the two governments agreed to delineate the border in May 1999.

The British had set up a development office that helped in some small developments in the emirates. The seven sheikhs of the emirates then decided to form a council to coordinate matters between them and took over the development office. In 1952, they formed the Trucial States Council, and appointed Adi Bitar, Sheikh Rashid's legal advisor, as Secretary General and Legal Advisor to the Council. The council was terminated once the United Arab Emirates was formed. The development of the oil industry in the 1960s, encouraged unification of the sheikhdoms. Sheikh Zayed bin Sultan Al Nahyan became ruler of Abu Dhabi in 1966 and the British started losing their oil investments and contracts to U.S. oil companies.

Independence (1971)

By 1966 it had become clear the British Government could no longer afford to administer and protect what is now the United Arab Emirates. British MPs debated the preparedness of the Royal Navy to defend the trucial sheikhdoms. Secretary of State for Defense Denis Healey reported that the British Armed Forces were seriously overstretched and in some respects dangerously under-equipped to defend the trucial sheikhdoms. On 24 January 1968, British Prime Minister Harold Wilson announced the government's decision, reaffirmed in March 1971 by Prime Minister

Edward Heath to end the treaty relationships with the seven Trucial sheikhdoms that had been, together with Bahrain and Qatar, under British protection. Days after the announcement, the ruler of Abu Dhabi Sheikh Zayed bin Sultan Al Nahyan, fearing vulnerability, tried to persuade the British to honor the protection treaties by offering to pay the full costs of keeping the British Armed Forces in the Emirates. The British Labor government rejected the offer. After Labor MP Goronwy Roberts informed Sheikh Zayed of the news of British withdrawal, the nine Gulf sheikhdoms attempted to form a union of Arab emirates, but by mid-1971 they were still unable to agree on terms of union even though the British treaty relationship was to expire in December of that year.

Bahrain became independent in August and Qatar in September 1971. When the British-Trucial Sheikhdoms treaty expired on 1 December 1971, they became fully independent. The rulers of Abu Dhabi and Dubai decided to form a union between their two emirates independently, prepare a constitution, then call the rulers of the other five emirates to a meeting and offer them the opportunity to join. It was also agreed between the two that the constitution be written by 2 December 1971. On that date, at the Dubai Guesthouse Palace, four other emirates agreed to enter into a union called the United Arab Emirates. Bahrain and Qatar declined their invitations to join the union. Ras al-Khaimah joined later, in early 1972. In February 1972, the Federal National Council (FNC) was created; it was a 40 member consultative body appointed by the seven rulers. The UAE joined the Arab League in 1971. It was a founding member of the Gulf Cooperation Council in May 1981, with Abu Dhabi hosting the first summit. UAE forces joined the allies against Iraq after the invasion of Kuwait in 1990.

The UAE supported military operations from the United States and other Coalition nations that are engaged in the war against the Taliban in Afghanistan (2001) and Saddam Hussein in Iraq (2003) as well as operations supporting the Global War on Terrorism for the Horn of Africa at Al Dhafra Air Base located outside of Abu Dhabi.[citation needed] The air base also supported Allied operations during the 1991 Persian Gulf War and Operation Northern Watch. The country had already signed a military defense agreement with the U.S. in 1994 and one with France in 1995. In January 2008, France and the UAE signed a deal allowing France to set up a permanent military base in the emirate of Abu Dhabi. The UAE joined international military operations in Libya in March 2011.

On 2 November 2004, the UAE's first president, Sheikh Zayed bin Sultan Al Nahyan, died. His eldest son, Sheikh Khalifa bin Zayed Al Nahyan, succeeded as Emir of Abu Dhabi. In accordance with the constitution, the UAE's Supreme Council of Rulers elected Khalifa as president. Sheikh Mohammed bin Zayed Al Nahyan succeeded Khalifa as Crown Prince of Abu Dhabi. In January 2006, Sheikh Maktoum bin Rashid

Al Maktoum, the prime minister of the UAE and the ruler of Dubai, died, and the crown prince Sheikh Mohammed bin Rashid Al Maktoum assumed both roles.

The first-ever national elections were held in the UAE on 16 December 2006. A small number of hand-picked voters chose half of the members of the Federal National Council—which is an advisory body.

Largely unaffected by the Arab Spring turmoil, the government has nonetheless clamped down on Internet activism. In April 2011, five activists who signed an online petition calling for reforms were imprisoned. They were pardoned and released in November. Since March 2012 more than 60 activists (later showed evidence of being moved by Iran to create chaos) have been detained without charge (at the time) – some of them supporters of the Islah Islamic group. A member of the ruling family in Ras al-Khaimah was put under house arrest in April 2012 after calling for political openness. Mindful of the protests in nearby Bahrain, in November 2012 the UAE outlawed online mockery of its own government or attempts to organize public protests through social media.

2.3 Geography

The United Arab Emirates is situated in Southwest Asia, bordering the Gulf of Oman and the Persian Gulf, between Oman and Saudi Arabia; it is in a strategic location along southern approaches to the Strait of Hormuz, a vital transit point for world crude oil.

The UAE lies between 22°30' and 26°10' north latitude and between 51° and 56°25' east longitude. It shares a 530-kilometer border with Saudi Arabia on the west, south, and southeast, and a 450-kilometer border with Oman on the southeast and northeast. The land border with Qatar in the Khawr al Udayd area is about nineteen kilometers in the northwest; however, it is a source of ongoing dispute. Following Britain's military departure from UAE in 1971, and its establishment as a new state, the UAE laid claim to islands resulting in disputes with Iran that remain unresolved. UAE also disputes claim on other islands against the neighboring state of Qatar. The largest emirate, Abu Dhabi, accounts for 87% of the UAE's total area (67,340 square kilometers). The smallest emirate, Ajman, encompasses only 259 km².

The UAE coast stretches for more than 650 km along the southern



Photo Source: www.wikipedia.com

shore of the Persian Gulf. Most of the coast consists of salt pans that extend far inland. The largest natural harbor is at Dubai, although other ports have been dredged at Abu Dhabi, Sharjah, and elsewhere. Numerous islands are found in the Persian Gulf, and the ownership of some of them has been the subject of international disputes with both Iran and Qatar. The smaller islands, as well as many coral reefs and shifting sandbars, are a menace to navigation. Strong tides and occasional windstorms further complicate ship movements near the shore. The UAE also has a stretch of the Al Bāṭinah coast of the Gulf of Oman, although the Musandam Peninsula, the very tip of Arabia by the Strait of Hormuz is an exclave of Oman separated by the UAE.

South and west of Abu Dhabi, vast, rolling sand dunes merge into the Rub al-Khali (Empty Quarter) of Saudi Arabia. The desert area of Abu Dhabi includes two important oases with adequate underground water for permanent settlements and cultivation. The extensive Liwa Oasis is in the south near the undefined border with Saudi Arabia. About 100 km to the northeast of Liwa is the Al-Buraimi oasis, which extends on both sides of the Abu Dhabi-Oman border. Lake Zakher is a man-made lake near the border with Oman.

Prior to withdrawing from the area in 1971, Britain delineated the internal borders among the seven emirates in order to preempt territorial disputes that might hamper formation of the federation. In general, the rulers of the emirates accepted the British intervention, but in the case of boundary disputes between Abu Dhabi and Dubai, and also between Dubai and Sharjah, conflicting claims were not resolved until after the UAE became independent. The most complicated borders were in the Al-Hajar al-Gharbi Mountains, where five of the emirates contested jurisdiction over more than a dozen enclaves.



Photograph by Michael Green, Photolibrary

2.4 Climate

Photograph by Michael Green, Photolibrary

The climate of the U.A.E is subtropical-arid with hot summers and warm winters. The hottest months are July and August, when average maximum temperatures reach above 45 °C (113.0 °F) on the coastal plain. In the Al Hajar Mountains, temperatures are considerably lower, a result of increased elevation. Average minimum temperatures in January and February are between 10 and 14 °C (50.0 and 57.2 °F). During the late summer months, a humid southeastern wind known as Sharqi (i.e.

"Easterner") makes the coastal region especially unpleasant. The average annual rainfall in the coastal area is less than 120 mm (4.7 in), but in some mountainous areas annual rainfall often reaches 350 mm (13.8 in). Rain in the coastal region falls in short, torrential bursts during the summer months, sometimes resulting in floods in ordinarily dry wadi beds. The region is prone to occasional, violent dust storms, which can severely reduce visibility. The Jebel Jais mountain cluster in Ras al-Khaimah has experienced snow only twice since records began.

2.5 Government and politics

The United Arab Emirates is a federation of absolute hereditary monarchies. It is governed by a Federal Supreme Council made up of the seven emirs of Abu Dhabi, Ajman, Fujairah, Sharjah, Dubai, Ras al-Khaimah and Umm al-Qaiwain. All responsibilities not granted to the national government are reserved to the emirates. A percentage of revenues from each emirate are allocated to the UAE's central budget.

Although elected by the Supreme Council, the president and prime minister are essentially hereditary. The emir of Abu Dhabi holds the presidency, and the emir of Dubai is prime minister. All but one prime minister served concurrently as vice president. Sheikh Zayed bin Sultan Al Nahyan was the UAE's president from the nation's founding until his death on 2 November 2004. On the following day the Federal Supreme Council elected his son, Sheikh Khalifa bin Zayed Al Nahyan, to the post. Abu Dhabi's crown prince, Mohammed bin Zayed Al Nahyan, is the heir apparent.

The UAE convened a half-elected Federal National Council in 2006. The FNC consists of 40 members drawn from all the emirates. Half are appointed by the rulers of the constituent emirates, and the other half are indirectly elected to serve two-year terms. However, the FNC is restricted to a largely consultative role. In December 2008, the Supreme Council approved constitutional amendments both to empower the FNC and to improve government transparency and accountability.

Dubai is an emirate in the United Arab Emirates (UAE) federation. The main city of the emirate is also called Dubai. The emirate is located on the southeast coast of the Persian Gulf and is one of the seven emirates that make up the country. It has the largest population in the UAE (2,106,177) and the second-largest land territory (4,114 km²) after the capital, Abu Dhabi. Abu Dhabi and Dubai are the only two emirates to have veto power over critical matters of national importance in the country's legislature. The city of Dubai is located on the emirate's northern coastline and heads up the Dubai-Sharjah-Ajman metropolitan area.

The earliest mention of Dubai is in 1095 AD, and the earliest recorded settlement in the region dates from 1799. Dubai was formally established on the 9th June 1833 by Sheikh Maktoum bin Butti Al-Maktoum when he persuaded around 800 members of his tribe of the Bani Yas, living in what was then the Second Saudi State to follow him to the Dubai Creek by the Abu Falasa clan of the Bani Yas. It remained under the tribe's control when the United Kingdom agreed to protect the Sheikdom in 1892 and joined the nascent United Arab Emirates upon independence in 1971 as the country's second emirate. Its strategic geographic location made the town an important trading hub and by the beginning of the 20th century, Dubai was already an important regional port.

Today, Dubai has emerged as a cosmopolitan metropolis that has grown steadily to become a global city and a business and cultural hub of the Middle East and the Persian Gulf region. It is also a major transport hub for passengers and cargo. Although Dubai's economy was historically built on the oil industry, the emirate's Western-style model of business drives its economy with the main revenues now coming from tourism, aviation, real estate, and financial services. Dubai has recently attracted world attention through many innovative large construction projects and sports events. The city has become symbolic for its skyscrapers and high-rise buildings, such as the world's tallest Burj Khalifa, in addition to ambitious development projects including man-made islands, hotels, and some of the largest shopping malls in the region and the world. This increased attention has also highlighted labor and human rights issues concerning the city's largely South Asian workforce. Dubai's property market experienced a major deterioration in 2008–2009 following the financial crisis of 2007-2008, but is making a gradual recovery with help coming from neighboring emirates.

As of 2012, Dubai is the 22nd most expensive city in the world, and the most expensive city in the Middle East. Dubai has also been rated as one of the best places to live in the Middle East, including by American global consulting firm Mercer who rated the city as the best place to live in the Middle East in 2011.

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Photo source: Dubai museum, Dubai

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Some people say Dubai is one of the wonders of the modern world. A decade ago the sand was the ruler of this emirate located on the edge of the Arabian Desert with no discernible natural advantages. Nowadays the sand has been dethroned by the luxurious futuristic skyscrapers and the exclusive cozy villas scattered around the coastline. And all this is thanks to the vision of Dubai's ruler – Sheikh Mohammed and the belief in his subjects in his idea to turn his country into the center of international trading and tourism. His logic is simple: if you build it, they will come. But my question here is, in what way was Dubai built?



Photo source: Dubai museum, Dubai

Chapter 3

3. Local and traditional architecture of Dubai

Besides being a town on the old caravan route from Iraq to Oman, Dubai was also a transit port for dhows between India east Africa and the northern part of the Gulf. Gradually it developed into a busy commercial center where people of different cultures and traditions settled and mixed, leading to today's multi-cultural society.

"Like most Arabian Gulf coastal cities, Dubai was established on land near a creek and fresh water. Creeks provided natural ports for dhows, and the sea was a convenient way of transportation, besides being a means of providing food and pearl diving," explains Rashad M. Bukhash, head of historical buildings section at Dubai Municipality.

Bukhash explained how Dubai's traditional architecture is a result of the mixture of nationalities of people who lived here.

"In general it is influenced by Islamic architecture which developed in the region. Its main features are simplicity, functionality, durability and suitability for climatic environments and social life. The courtyard houses are an aspect of Islamic architecture and are well suited to the local climate," he said.

Many elements of the architecture are imported from neighboring countries, such as the wind-towers and decorative panels from Iran as well as carved doors and balconies from India. The first thorough description of Dubai was given by the British Lieutenant Cogan in 1822, who recorded that the population then was around 1200 people, that there was a low wall around the town with three watch-towers and that

the houses were made of mud. Lieutenant Cogan drew the first map of Dubai city and its elevation from the sea. In 1841 smallpox broke out on the Bur Dubai side of the creek and as a result people moved to Deira side and started to build houses and markets. Consequently, Deira became larger than Bur Dubai. In 1894 fire swept through Deira, burning down most of the dwellings. Richer people began building their houses from coral stone and gypsum which was more fire resistant.

G.G. Lorimer is considered one of the best historians and geographers to describe the Arabian Gulf at the beginning of this century. He recorded the statistics of Dubai in 1908 as follows: "There is no customs; the yearly revenue is \$51,400 mainly from pearls. In Deira side there are 1600 houses and 350 shops. In Shindagha area there are 250 houses. In (Bur) Dubai there are 200 houses and about 50 shops. There are about 4000 date palm trees in the town, 1650 camels, 45 horses, 380 donkeys, 430 cattle and 960 goats. In the creek, there are 155 boats for diving and trading and 20 small boats - abras- to take passengers between the two banks of the creek."

At the beginning of the century, Dubai became a main trading center in the Arabian Gulf where dhows handled the import and export of goods between the ports of India and east Africa. The main income was from pearls which people used to dive for in the hot summer months. The city expanded during this period, the population increased and Dubai experienced a construction boom.

However, the pearl trade started to decline after Japan produced cultured pearls in 1930 and the economy began to deteriorate. The 1930s and '40s were slow years for Dubai. The introduction of cultured pearls by Japan on the one hand, and the start of the Second World War on the other, led to widespread economic depression. Consequently, people migrated to neighboring countries such as Saudi Arabia and Kuwait where more job opportunities were available. The population dropped significantly from 38,000 in 1940 to just 20,000 in 1953.

The first oil agreement was signed with Britain in 1937 to search for oil in Dubai on land. Thirty years later, oil was discovered offshore. The first production was in 1969. Oil discovery increased the Emirate's income and subsequently, major infrastructure projects were embarked upon.

Cement was first imported to Dubai in 1955 and the first concrete building was built in 1956. Cement was much cheaper than gypsum, which was traditionally used for building construction, so that in a few years the tradition of constructing buildings with coral stone and gypsum vanished and replaced with ready-made cement block construction. This was the beginning of a new era where traditional ways and forms of architecture were abandoned and new modern styles adopted.



Photo source: plus.google.com/photo

The traditional architecture of Dubai

The traditional architecture of Dubai was basically the result of three main factors: **the hot and humid climate, people's social lives and religion, and locally available construction materials.**

Climate

In response to the hot and humid climate, three architectural elements are visible.

1. As in most Islamic cities, buildings were constructed close to each other. This type of high-density structure created *narrow alleys, known as sikkas*, which were shaded for most of the day. These alleys tended to run from north to south and ended at the creek, permitting the prevailing north winds to pass through. The narrowness of the alleys caused



Photo source: *photo by S.Shehadeh*

the wind to increase in velocity as it breezed through, creating a comfortable pedestrian zone.



Photo source: photo by S.Shehadeh

2. The second element is the *courtyard house*, where most of the rooms look inward with shaded verandas overlooking the courtyard. The courtyard generated wind movement in the house by allowing hot air to ascend the cooler air to replace it from the surrounding rooms.



Photo source: www.declome.com



Photo source: www.mountainsoftravelphotos.com

3. *Wind-towers* (bastikiyya) were a unique and elegant architectural element, acting as conduits for the trapped air to be directed to the rooms beneath. Usually bed and sitting areas were situated directly under the wind-tower to enjoy the cool air coming through. In winter, these wind-towers were boarded up with wooden planks to protect the room from rain.



Photo source: www.mountainsoftravelphotos.com

People's social lives and religion

The effect of religion and social interaction on local architecture can be observed in two ways.

1. Islamic religious teaching encourages *privacy and modesty*, and courtyard houses fulfilled this condition by providing an inward-looking house. All the rooms were open onto the courtyard and the exterior walls were mostly solid except for some small ventilation openings quite high up, preventing pedestrians looking in. The zigzag entrance to the houses, where the main gate was faced with a solid wall to provide privacy and prevent people from staring in, is another facet of that.
2. *Air pullers* are a unique piece of local architecture. To avoid opening windows to the exterior, the architect Ostaad overcame the problem by replacing the opening of the window with two thin parallel walls with a distance of about 10 centimeters in between them. This design enabled the wind to strike the upper wall, be deflected into the opening and then pass through the lower wall into the adjacent room, providing both air and privacy to the occupants.

Locally available construction materials

The vernacular architecture in the region depended totally on the locally available materials.

1. In the mountainous areas the oldest houses were made from stones put on each other simply to make a wall and occasionally the gaps were filled with mud. The roofs were covered with palm tree trunks and fronds. Later on, walls were made from small mountain stones and mud was used as mortar, roofs were covered with palm tree trunks and mats were made from palm tree leaves and mud.
2. In the desert, Bedouins moved from one place to another looking for



Photo source: Image by deconcrete2013

water. Therefore, their houses had to be portable and easy to dismantle. Tents made from camel hairs were the best choice. Camel hairs were dyed in several colors using natural plants, dried and then woven into colorful tents- "bait shaar". In areas where Bedouins stayed for long periods of time, they used palm tree fronds and trunks to make their dwellings.



Photo source: www.flickr.com

3. In urbanized areas, two types of construction prevailed.
 - A. Buildings made from coral stones and gypsum tended to be either public institutions, such as watch-towers, mosques and markets, or houses of rich people. Coral stones were collected along the shore or dug up from the sea while gypsum was made on the outskirts of the city.



coral stone

Photo source: Dubai municipality articles

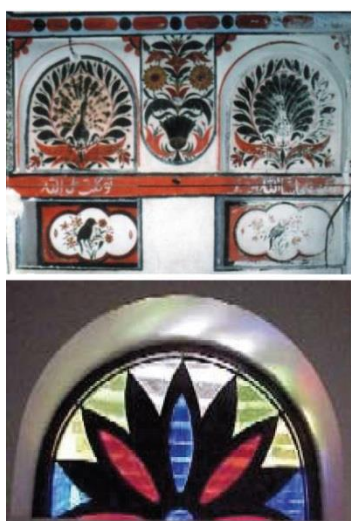
Gypsum stones were collected and burned for a few days, then ground into powder and mixed with water when applied to a building. Ceilings in earlier houses were covered with palm tree trunks, mats and gypsum. At the beginning of the century when Dubai trade was at a peak, palm tree trunks were replaced with sandalwood joists imported from east Africa.



palm tree trunks

Photo source: Dubai municipality articles

In the 1920s and '30s when trade with India flourished rectangular wooden joists, known as morrabaa, were imported from south India. "Morrabaa was the preferred wood as it was longer and stronger than sandalwood joists. In some cases, the roof was laid with a layer of burned mud "sarooj", which was introduced from Iran and proved to be waterproof. In mountain areas where mud was available, sarooj was made by mixing mud with hay and cow manure, burned for a few days, then powdered and mixed with water. Doors and windows were made from solid teakwood imported from southern India and carved with geometrical decorations. Decorative items used in arches, wind-towers, rooms and architrave were made from gypsum powder. The decorative panel was poured on a flat surface, geometrical or floral designs were cut or carved onto the mold and then it was fixed in its position with gypsum mortar.



graphy ornaments

Photo source: Dubai municipality articles



Gypsum ornaments

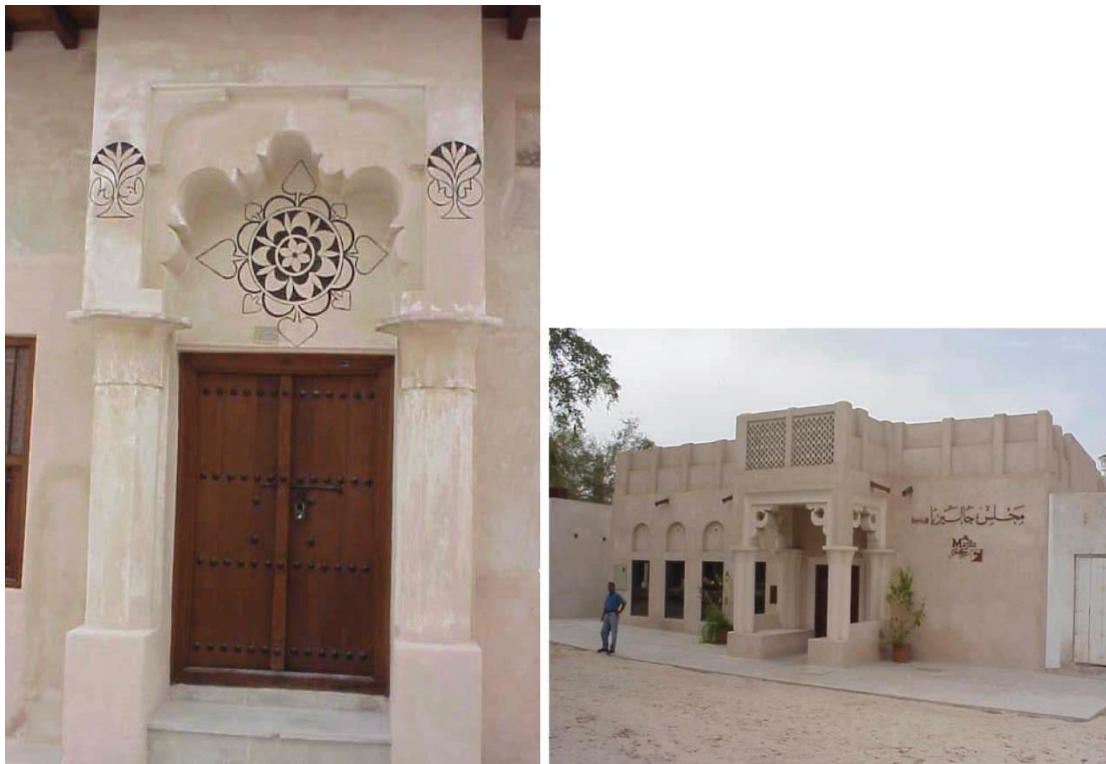


Photo source: Dubai municipality articles

gates

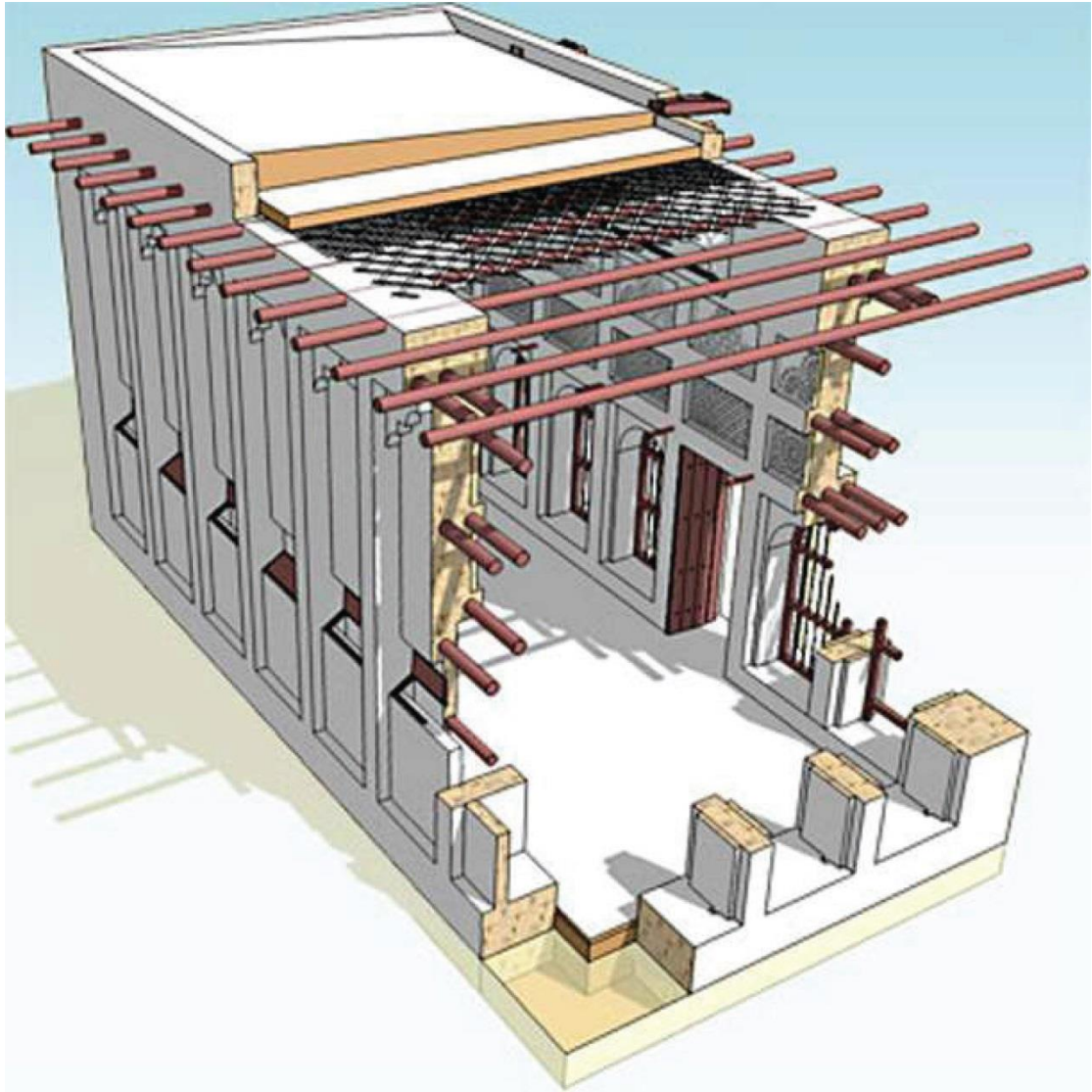


Photo source: Dubai municipality articles

Construction method

- B. The second type of construction used in the city was houses made of palm tree trunks and fronds, locally called areesh or kheima. Lower-income citizens lived in these houses. The main structure was made from palm tree trunks and the walls and ceilings were made from "daen", dried palm tree fronds tied together with kombaar, rope made from coconut tree fibers. In some cases, the fronds were cleaned of leaves to give more beauty and stability. Some of the houses had a portable wind-tower over the main room, the skeleton of which was made from palm tree trunks covered by a sack. The wind-tower was used in summer and in winter it was dismantled and the opening in the ceiling was covered with palm fronds.

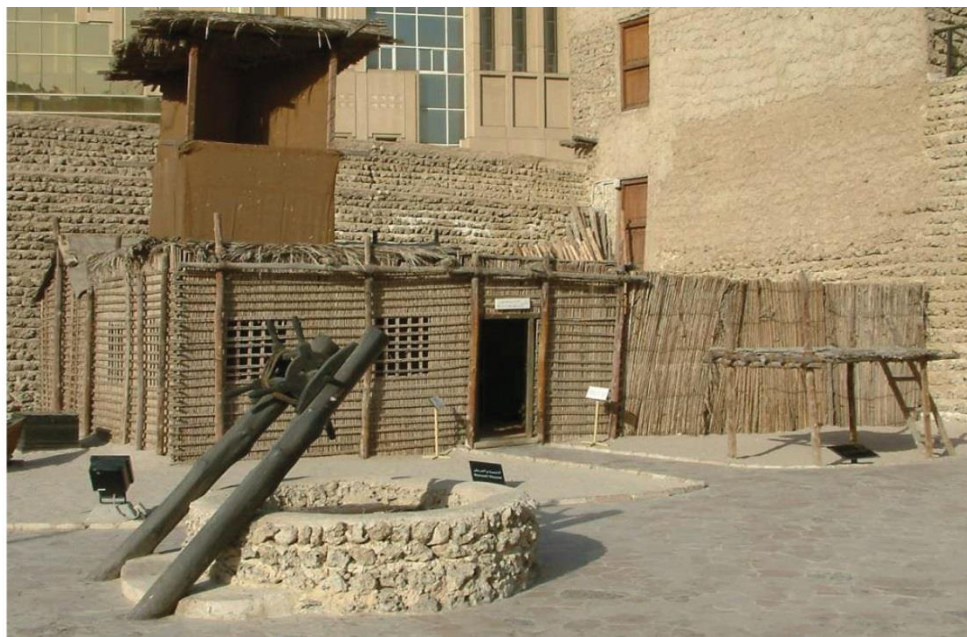


Photo source: Dubai municipality articles

Areesh



Photo source: Dubai municipality articles

Wind towers

According to Bukhash, urban buildings could be divided into four categories: defensive, residential, markets and mosques.

1. "Defensive architecture is the most prominent because it was the largest in scale. At the beginning of the 19th century Dubai was a small town with roughly 800 inhabitants," he says. Dubai was surrounded with a 2.5 meter high and 60 centimeters thick wall made from what were considered to be the strongest available materials, coral stones and gypsum. The main fort Al Fahidi, built in 1799, was located inside the town and was used as a residence for the ruler and a place of shelter for the people whenever they were attacked.



Photo source: Dubai municipality articles

Al Fahidi fort

2. There were two types of residential buildings: the palm tree frond houses "khaima" for the low income people and the large courtyard houses made from coral stone and gypsum for the rich people. In the 19th century, most of the houses were of one storey only. At the beginning of this century when Dubai opened its doors to international trade, many merchants settled in Dubai and started building two storey houses. Wind-towers and toilets were introduced into the houses in the 1920s. The houses were close to each other with narrow curved alleys in between them, creating a strong neighborhood.

Each building housed a large family consisting of parents, sons and their wives and children.



Photo source: SIKKA 2013 - photo by Analog Production

Old neighborhood



Photo source: Dubai municipality articles *Sh. Saeed Al Maktoum's house, 1896*

3. Since Dubai was the city of traders, numerous markets "souqs" and storage areas were built on both banks of the creek. As in most Islamic cities, similar traders joined together to create specialized markets named after them, such as the gold souq, the animal markets, the herb sellers. Markets consisted of a main street or alley shaded with palm tree fronds or mats, with gates on the two ends that were closed after sunset. Shops were constructed from coral stones and gypsum on both sides of the street, about three meters wide and four meters high, with two large leaf doors. In the 1950s larger shops were constructed made of two adjacent spaces with one wind-tower over it to reduce the heat of the summer.



Photo source: Dubai municipality articles

Grand souq, Bur Dubai

4. Mosques were built in both residential and commercial areas to enable people to perform their prayers five times a day, while people gathered every Friday for prayer in the grand mosque on the Dubai side. This mosque was the most elegant building in the town with its 52 small domes and a short minaret. In residential areas, small mosques were constructed from coral stones and gypsum. Since there was no need for privacy in religious buildings, windows covered all exterior walls to collect breezes from all directions and ventilate the space. Aside from worship, mosques were used as schools where children learnt Quran, writing, reading, religious affairs and mathematics. In the 1960s, simple designs were introduced as well as cement blocks and reinforced concrete. Some of the buildings in this period were school and governmental like Dubai municipality buildings and lands department. Dubai's clock tower and the flame round-about commemorating the discovery of oil were constructed during this time.



Al Otaibat Mosque,
Shindagha

Photo source: Dubai municipality articles

Al Otaibat Mosque



Photo source: Dubai municipality articles

Al Ahmadiya school

Chapter 4

4. The transition phase

After the production of oil in 1969, Dubai witnessed the beginning of the boom. During the 1970s, many infrastructure projects including roads, drainage, housing and commercial buildings, were started. Dubai's population surged from 60,000 to 206,000 between 1967 and 1977. Because of the rapid construction in this decade there was no guide to control the type and shape of architecture; different international designs and style were produced.

Some of the major projects constructed in this decade are Rashid hospital, the Dubai world trade center (39 floors), Shindagha tunnel, Al Garhood bridge, the dry docks and Jebel Ali port as well as the airport.

1980s witnessed more infrastructure projects and more modern buildings with some relation to local culture. Some of the local architects graduated and started designing buildings with reference to traditional architecture. Dubai municipality had shade and water pools introduced into its buildings while Al Wasl hospital used traditional arches.

The first renovation project was Sheikh Saeed Al Maktoum's house, which now houses a photography museum. The decade of the 1990s is considered to be the maturing stage of Dubai architecture, where most of the main buildings are designed with some respect to the traditional culture and heritage. More than 40 buildings have been restored in the past eight years and used as museums, restaurants and shops.

The new materials and technologies now available are enabling more adventurous designs.

Restoration works in Dubai

The Bastakiya Quarter should be atop any list of architecture heritage sites in the UAE. The Quarter is a complete restoration of a wealthy neighborhood settled in the late 1800s by Persian traders. A beautiful labyrinth of narrow laneways and cozy coffee shops, the Quarter is a lovely locale to while away an afternoon.



Photo source: Photos by S.Shehadeh



Photo source: Photos by S.Shehadeh

Another example of the city's restoration work is the **Al-Ahmadiya School**, a superb example of traditional Islamic architecture. The school, founded by Sheikh Mohammed bin Ahmed bin Dalmouk in 1912, was in operation until 1962 and is now open as an education museum. Al-Ahmadiya has undergone extensive renovations to preserve the classrooms as they appeared in the 1920s and 1930s. While providing a fascinating insight into education in a bygone area, the school also offers visitors some beautiful design work, notably the intricately carved arches and decorative gypsum panels.



Photo source: Dubai municipality articles

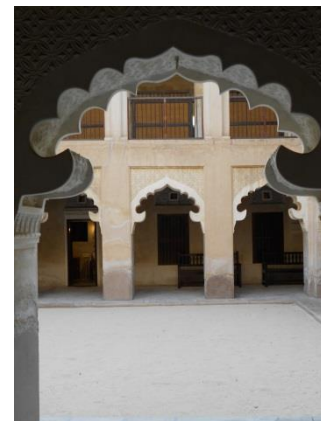


Photo source: Dubai municipality articles

Built in 1896, the palace of Sheikh Saeed Al Maktoum is located on the historical Shindagha waterfront and was home to royalty until the late 1950s. Undergoing substantial restorations in 1986, the palace reopened as a museum and now displays an enormous collection of photographs documenting the pre-oil history of Dubai. Of design note is the use of 'wind towers', an effective early air-conditioning system.



Photo source: Dubai municipality articles

Illuminated at night, the rose-colored sandstone is the only mosque in the UAE open to non-Muslims. Built in the 1970s in the Fatimid tradition, the Mosque is an essential visit. The glitz and the glamour of Dubai will compel even those with the scantiest interest in architecture to become connoisseurs. Boasting grand examples of both preserved and modern Islamic, Iranian, Indian and Arabic design right through to spectacular skyscrapers and manmade islands, the emirate ensures that all that steel, sand and stone is put to exceptional use.



Photo source: www.archaeoadventures.com

Chapter 5

5. Dubai's architecture today

Dubai is one of only a few locations worldwide where iconic architecture is not only encouraged, but actively pursued. As long as it is eye-catching, it seems that anything goes, from the sublime to the outrageous, and sometimes a combination of the two. What is interesting is Dubai's extraordinarily short building cycle. At less than 50 years old, Dubai is remaking its own image faster than any other city in the world. Nearly a quarter of all the world's construction cranes are hard at work here, leaving the beholder with plenty of iconic architecture for sightseeing. Strategically positioned on the trade route between Europe and Asia, Dubai has long been an important hub for commerce. Boasting oil and natural gas reserves, the world's largest manmade port and a thriving banking sector, Dubai is a prosperous state and the most populous emirate in the UAE. Wealth catapulted Dubai onto the world stage as a major player in business; riches are also behind its positioning as a world-class architectural destination.

Following are the most famous architecture buildings and complexes in Dubai.



Photo source: www.sites.psu.edu

Dubai is perhaps best known for **Burj al Arab**, a 321-metre white spinnaker yacht sail, dominating the skyline. Built offshore in the Arabian Gulf on a spectacular manmade island, the sail is home to a multi award-winning \$650 million seven-star hotel. At night the sail is illuminated in a dazzling multicolored light display. Perhaps the most intriguing feature of the complex is the submerged Al Mahara Restaurant, which diners need to access via submarine, travelling down through a two-storey tropical aquarium. The first modern building in the city, the National Bank of Dubai, is located in the eastern part of the city on the banks of the Dubai Creek. Upon completion in 1998, the bank was the fifth tallest building in city. As with Burj al Arab, the city's rich maritime history is evident in its sail-like design – the building boasts a large curved frontage made of gold glass and reflects the creek below.



Photo source: www.worldlinkmed.com



Photos source: www.jumeirah.com

Continuing the maritime theme is the distinctive **Dubai Creek Golf and Yacht Club**, a stellar example of modern architecture. Topped by three white triangular canopies – their appearance again distinctly sail-like – bearing strong semblance to the Sydney Opera House, the club became an instant design destination on opening in 1993.



Photos source: www.skygolfblog.com

Completed in 2000 was the **Emirates Towers Complex**: two towers on the busy commercial strip of Sheikh Zayed Road. The larger tower is the head office for the airline Emirates, with the smaller being home to a hotel and shopping mall. Of greatest design note is the juxtaposition between the two towers depending on where in the city you stand – from some vantage points, the towers appear miles apart, at other junctures they appear fused. Wherever you stand, both appear imposing.



Photo source: www.mountainsotravelphotos.com

At a staggering 828 meters, the world's tallest tower is **Burj Khalifa**, which appears to pierce the sky with its needle of fine glass. Often also called Burj Dubai, Khalifa was built at a cost of US\$1.5 billion and was unveiled in 2010. The tower broke not only height records but construction records too, utilizing 330,000 cubic meters of concrete, 39,000 metric tons of steel and 142,000 square meters of glass.

Khalifa is home to a diverse mix of residential, commerce, shopping and leisure facilities and the first Giorgio Armani hotel. While an unequivocal example of cutting edge modern architecture, Khalifa pays homage to a number of Islamic and Arabic traditions evident in the incorporation of onion domes, pointed arches and desert flowers into the design.



Photo source: www.dubaidhow.com

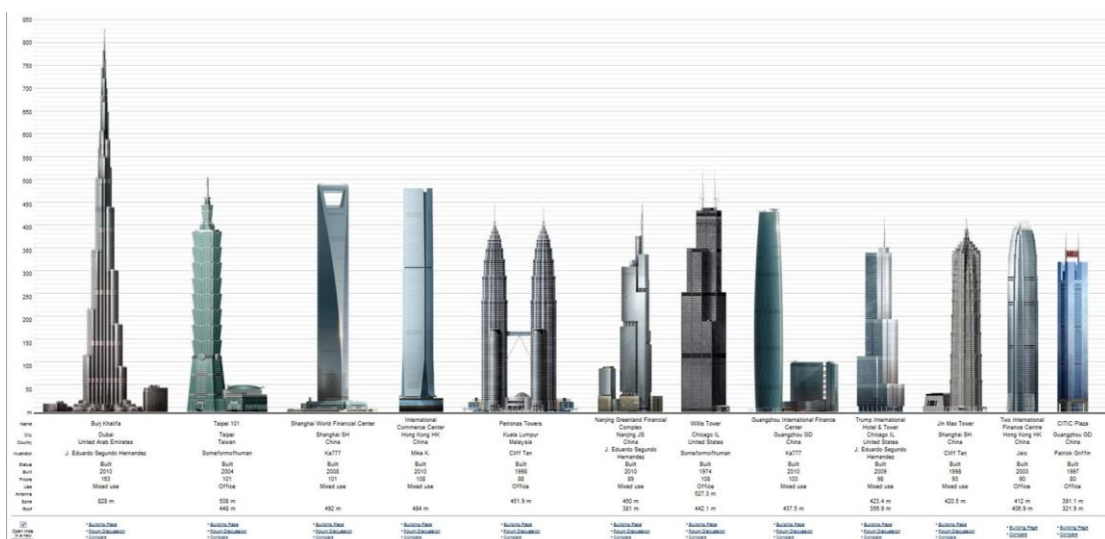


Photo source: www.urbansplatter.com



Madinat Jumeirah is an Arabian-style complex of hotels and restaurants, conference facilities, spas, malls and markets located a 30-minute drive from Dubai Airport. Inspired by the Arabian royal summer palaces, the complex boasts sand-colored buildings flanked by waterways and gardens. While complexes like Madinat Jumeirah may take inspiration from Dubai's past, most buildings in the city are fewer than 20 years old. Those rare exceptions of the past, however, are well worth a visit.



Photos source: www.edsaplan.com

Dubai Marina is a district in the heart of what has recently become known as 'new Dubai', in Dubai, United Arab Emirates. It is located at 25°4'52.86"N, 55°8'38.67"E on Interchange 5 between Jebel Ali Port and the area which hosts Dubai Internet City, Dubai Media City and the American University in Dubai. The first phase of this project has been completed.

The marina is entirely man-made and has been developed by the real estate development firm Emaar Properties of the United Arab Emirates. The marina will contain over 200 high-rise buildings and some supertall skyscrapers, Dubai Marina Towers, The Torch Dubai Marina, Infinity Tower, The Princess Tower, Number One Dubai Marina, Marina Terrace, Le Reve and Horizon Tower to name a few, and comprise of an area of 4.9 million m² (50 million ft²), which includes the 40 residential and hotel towers of the Jumeirah Beach Residence.



Photo source: photo by Vadim Makhorov



Photo source: photos by Vadim Makhorov

Atlantis, the palm

Situated at the center of the crescent of the Palm Jumeirah, the water theme park serves as the centerpiece of the resort which includes a luxury hotel, spa, retail entertainment village, and distinctive archeological marine exhibits. The design was based on the myth of Atlantis and maintains the iconic design elements of the Paradise Island property, while incorporating traditional Arabic design themes.



Photo source: www.atlantisthepalm.com

The Dubai Mall is the world's largest shopping mall based on total area and thirteenth largest by gross leasable area. Located in Dubai, United Arab Emirates (U.A.E), it is part of the 20-billion-dollar Downtown Dubai complex, and includes 1,200 shops. Access to the mall is provided via Doha Street, rebuilt as a double-decker road in April 2009.



Photos source: www.thedubaimall.com

Chapter 6

6. Opinions/ Conclusion

While working and living the past year in Dubai, I realized many things. Every day I had a different opinion and getting even more confused. Dubai for me, with some small exceptions is a city without identity. Living in Dubai is like living without a past and this is sad to know and very hard to get used to, especially when you come from places with huge history. Dubai is the city where everything is possible. But nothing can substitute tradition, culture and most importantly nature.

In my opinion the architecture we see today in Dubai doesn't respect culture, has no tradition and its only characterization is that it's new. But is this fully true;

If we think about it, the UAE is a new country that started in 1971, and before that it was generally only desert. And because it is a rich country it has faster modernizing movements that grabs all the world attention. So, the UAE did not have buildings in its history, how is it possible that these projects have UAE style and identity? Well, in my opinion, UAE is supposed to be the heart of the Arab countries and not a show off but a leader to these important civilizations. Arabic architecture is so rich and is spread all over the world and it's a pity that it is not the main architecture of this city. And we can see this in the few building and projects which follow a deep history and culture. To conclude, I don't say that Dubai shouldn't be influenced by modernity and not create new ideas and unique projects but what I would have liked to see is the development of something past to something new, and this is what I tried to find during my project but I hardly did.

Resources

Books

- Records of Dubai 1761-1960, Archive Editions, 2000, Vol.1
- Dubai – Gateway to the Gulf, edited by Ian Fairservice, Motivate Publishing, 1986
- Architectural Heritage of the Gulf, Shirley Kay and Dariush Zandi, Motivate Publishing, 1991
- Land of the Emirates, Shirley Kay, Motivate Publishing, 1999
- The UAE and Oman, 2 Pearls of Arabia, Walter M. Weiss and Kurt-Michael Westermann, Motivate Publishing, 1996
- Charter of Dubai A Manifesto of Critical Urban Transformation, Sabine Müller and Andreas Quednau, SMAQ
- Brand Dubai: The Instant City; or the Instantly Recognizable City, Samer Bagaeen

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- Traditional Architecture in Dubai, Dubai Municipality
- Tourist Map of Historic Buildings, Dubai Municipality
- Elements of Traditional Architecture in Dubai, Dubai Municipality
- Historical Building in Dubai Before & After Restoration, Dubai Municipality
- Traditional houses of Dubai, Dubai Municipality
- The Emergence of a New Urban Brand “Dubaization”, Ali A. Alraouf, Ph.D
- Globalizing Dubai: Transience, Dwelling and Hospitality Tensions, Amir M. Abdella

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- www.dubaitourism.co.ae
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- www.insightguides.com

Conceptual project

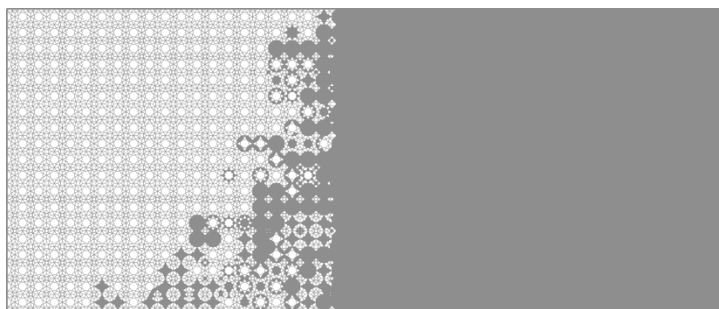
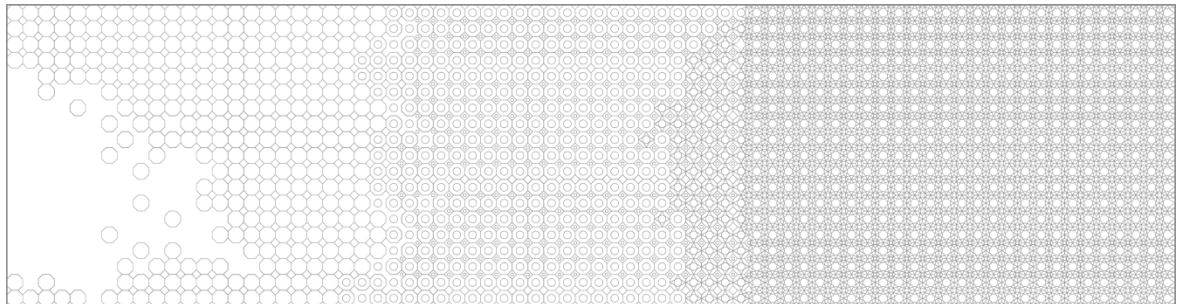
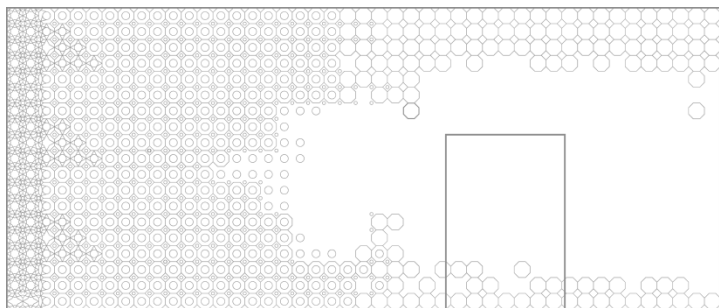
In addition to this theoretical research and to enhance my project I had the idea to make some proposals for a conceptual exhibition pavilion that could be used as places/galleries to show Dubai's architecture, either as a part of big interior exhibition or as a unique small building.

During my study in Dubai's architecture I realized that the only characteristic kept from the very first building till the new building we see today is the Islamic pattern. The Islamic pattern was used in the first buildings as a decorative element either in the carpets or rags or as ornaments to decorate walls or entrances and of course it's the main characteristic for all mosques from the past till today. In today's architecture it's prominent in many parts of architecture. Either as decoration or structure or even as landscape design. It's a huge chapter in architecture and played important role to almost all building with Arabic style. Following are some drawings and sketches to give a small clue. More information and a better illustration will be shown during the presentation.

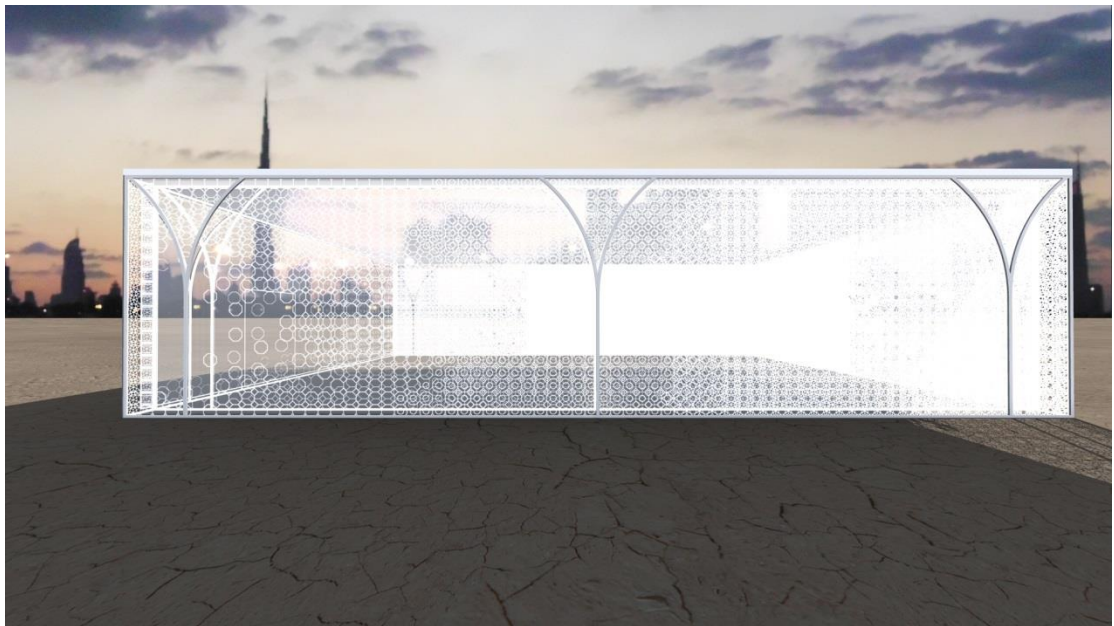
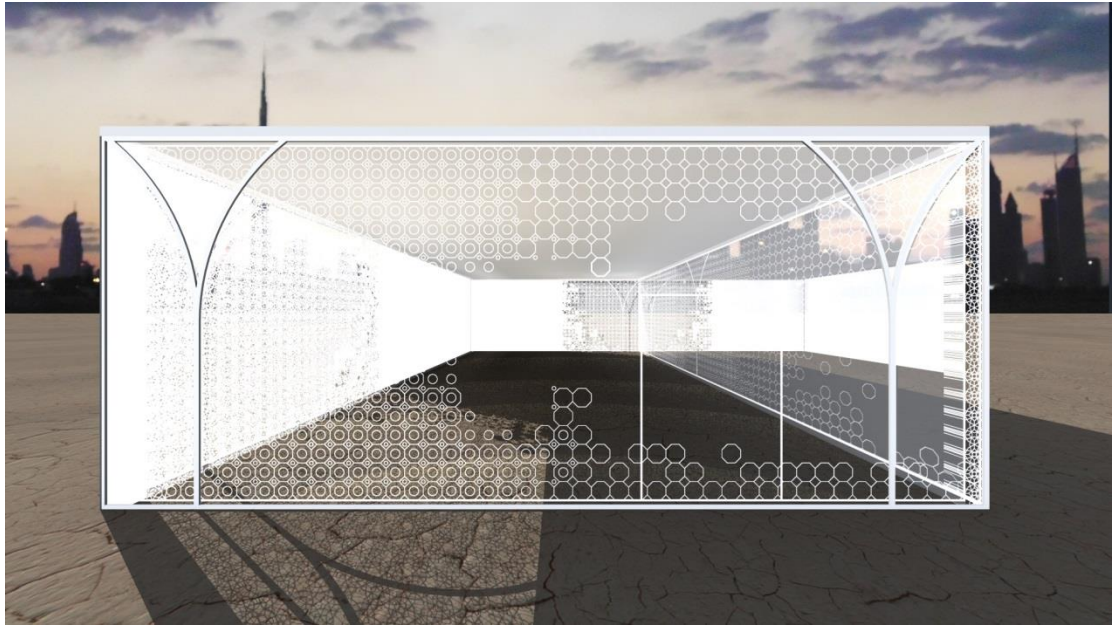
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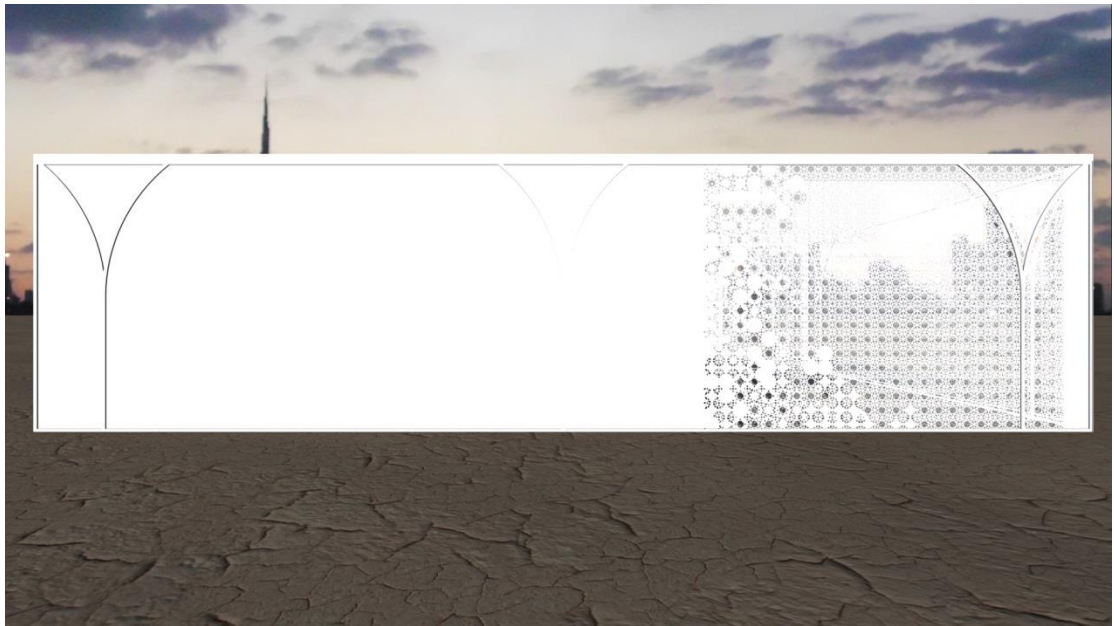
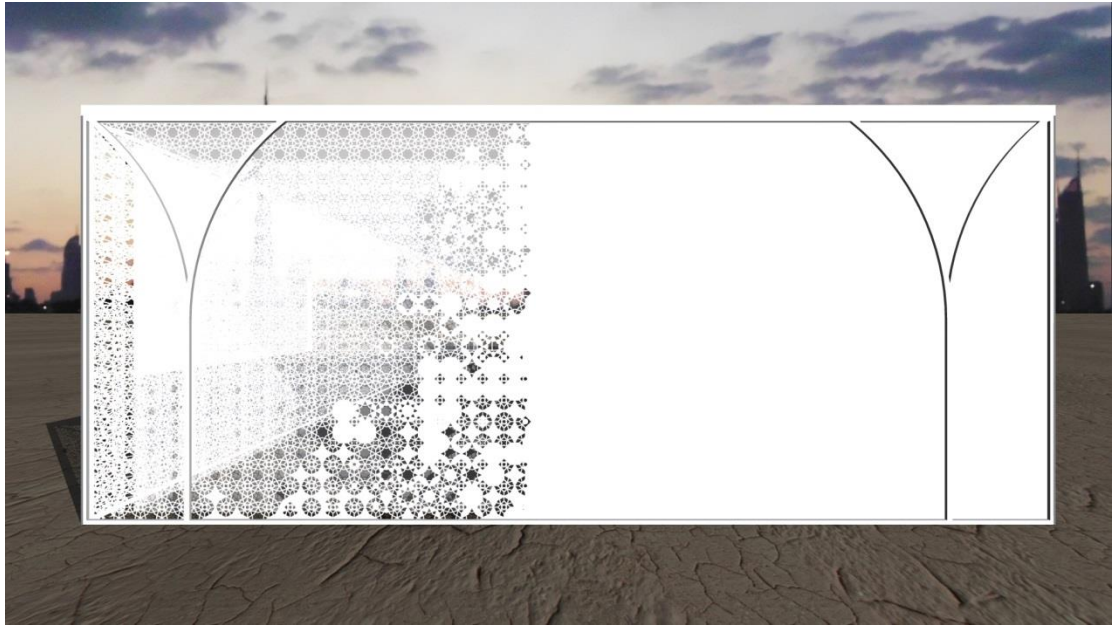
The design of this pavilion/gallery mostly conceptual is based on the geometry of the Islamic patterns. It is a building facade system developed to provide solar protection for the art while still allowing for visual connections to the exterior. The patterns used show the geometry of the lines that form the pattern. It shows how from simple polygons or circles by playing with lines and symmetry we can reach to complicated patterns. It is a symbolism of how the architecture of Dubai from very simple constructions as tents was developed to the “chaos” we see today.

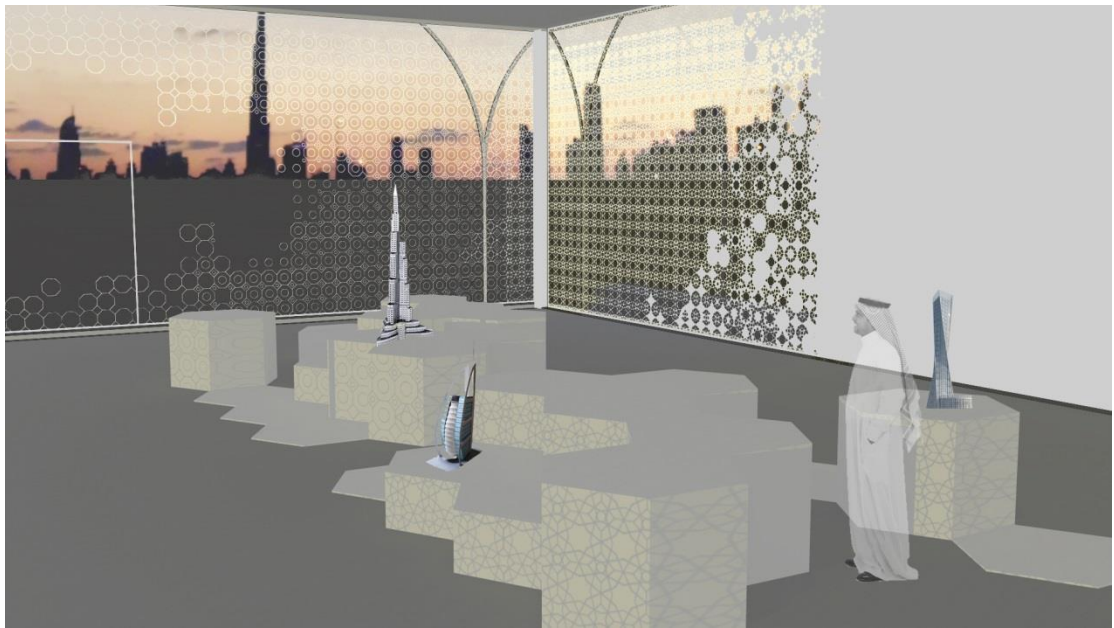
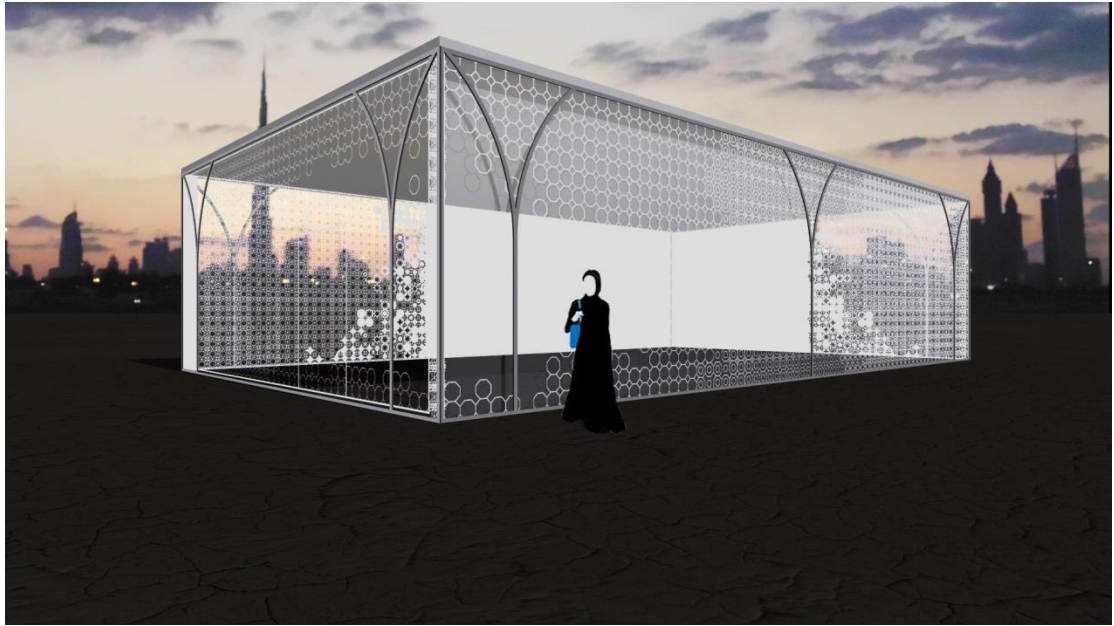
Pattern



Renders







B.

In the second proposal the pattern is used on cubical building on a bigger scale as partitions on the roof but also on the sides.

