

# THE MANIFESTATION OF DUBAI'S PETROLEUM ECONOMY IN ITS ARCHITECTURE AND URBAN DEVELOPMENT: 1930–1980

## Abstract

In 1966, after about 30 years of oil and gas exploration, oil was discovered offshore from Dubai. The oil revenues began to flow to the city, opening doors for a new era of development. Dubai was keen on using the oil revenues to invest mainly in the city's infrastructure. The new "petroleum economy" manifested itself in the transformation of the Dubai city map and architecture, contributing toward the modern metropolis we know today. This transformation, both physically and chronologically, took place between the two trade ports of the city—Port Rashid to the north and Jebel Ali to the south—along today's approximately 40-kilometer Sheikh Zayed artery that links the two ends.

This essay is an attempt to investigate the role of some distinctive oil-related events between the 1930s and 1970s that influenced the city's development. The focus is placed on events connected to oil excavations, discoveries, and socio-economic and spatial development. This essay has two main objectives: The first is to understand the emergence of Dubai as a modern city within its historical context and to exhibit the manifestation of the petroleum economy that is considered to be the chief pioneer in the formation of the city skyline and spatial identity. The second is to assess the achievements during the 1930s through the 1970s in relation to infrastructure, planning, and architecture.

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## Introduction

It took Dubai less than five decades to transform from a small town by the Arabian Gulf in the 1950s to a modern city with great potential. Many events have played a significant role in this transformation, and the petroleum industry stood out as a leading force during the “Trucial State” era just before the formation of the United Arab Emirates in 1971.

Like other oil-producing states in the Gulf, Dubai was transformed by the inherent nature of the oil industry and the many stages of oil extraction. British companies and individuals played an additional significant role in establishing Dubai’s modern state and infrastructures. Oil, trade, and financial companies brought along their technologies, equipment, industry, construction, workforce, and urban culture. Furthermore, individuals were appointed to advise and help in the formation of modern governmental departments and were employed in different sectors, including planning, construction, and public works.

As Dubai expanded, many of the new construction projects during the late “Trucial States” era, such as buildings, infrastructure, airports, bridges, and facilities, were designed and/or executed mainly by British firms and construction companies.

Four key events related to oil discoveries occurred between 1930–1980 and played a major role in the transformation of Dubai. The first event was the Oil Concession Agreement between the Dubai ruler and Petroleum Concessions Limited. The second was the Commercial Air Agreement which led to developing the city creek and eventually the city planning strategies. The third was the First Dubai Master Plan of 1960, which came to establish the physical framework of the modern city. And finally, the erection of Shaikh Rashid Office Tower (Dubai World Trade Center) to house the major oil companies’ headquarters and initiate the new city skyline.

### From Pearls to Barrels

Toward the end of the eighteenth century only about 3,000 people lived in Dubai. Mainly pearl divers and fishermen with their families occupied the mouth of Dubai Creek.

During the nineteenth century, the British recognized the importance of the lower Arabian Gulf as a new strategic location and established footholds in the area through a series of treaties signed with the rulers of Dubai and other sheikhdoms in the area (including Bahrain) in order to secure their shipping routes. The Trucial States, a form of federation between the sheikhdoms who signed the “maritime truce” treaties with Britain, was established between 1853 and 1971 (figure 1).<sup>1</sup>

### Notes

1. Jeffrey Sampler and Saeb Eigner, *Sand To Silicon; Going Global, Rapid Growth Lessons From Dubai* (Dubai: Motivate Publishing, 2008).



Figure 1: Trucial State stamps in 1961.

In 1900, only 11,000 people inhabited Dubai and were concentrated in three main areas in juxtaposition to each other but separated by the creek (figure 2): The first area was Deira (ديرة) with about 1,600 houses and 350 shops for Arabs, Persians, and Balochis. The second was Al Shindagha (الشندغة) with 250 houses of only Arab residents. And the last was Bur Dubai (بر دبي) with 200 houses and 50 shops dominated by Persians and Indians.



Figure 2: Dubai Creek aerial view showing Bur, Al Shindagha, and Deira in the 1950s. (Source: Dubai GIS Department, Dubai Municipality.)

At that time, the principal economic activities in Dubai were pearl-diving and fishing, with no other natural resources. By the turn of the twentieth century, the declaration of the Dubai port to be tax-free and control-free attracted many re-export activities from the surrounding cities and added an additional source of income. However, with the invention of artificial pearls in 1926 (figure 3) and the Great Depression of 1929, a collapse in the international markets resulted in the downfall of the pearl trade, which urged Dubai to look for alternative sources of income. Oil shortly became the answer.

### Oil, Air, and Water

Two important agreements with Britain had a significant role in the transformation of Dubai from a primeval settlement to a new “modern” form of economy and urbanism. The first was a seventy-five-year oil concession agreement sponsored by Great Britain in 1937 signed between the ruler of Dubai and the British oil company Petroleum Concessions Ltd. (figure 4). The agreement secured the company an exclusive

right to search for gas and petroleum in the land of Dubai, and exempted the creek area (around which the city was located) and other areas "occupied by or devoted to the purposes of mosques, sacred buildings, or graveyards" from carrying on the excavation operations. But the agreement also gave the company the right "to do all things necessary for the purpose of the operation,"<sup>2</sup> such as the construction of buildings (figure 7) and infrastructure, including roads, railways, tramways, ports, harbors, aircraft buildings and landing places, power stations, water supply facilities, and telegraph and telephone lines. The city started to expand along the seashore toward the south and inland along the shores of the creek but still within the sheikhdom property and the defined limitations (figures 5 and 6).

The second agreement, which followed soon after, was the "Dubai Commercial Air Agreement" (figure 8). It was signed in 1941 following the booming trade and commercial activities of Britain in the area. The result was the establishment of a commercial landing base for aircraft in the British Overseas Airways Corporation (now British Airways), which became the first "airport." And due to the concern over British flying boats stopping in Dubai, this agreement included a suggestion to assess the creek for navigability (figure 9) by oil and construction companies. Soon after, an actual proposal for dredging the creek was presented in 1941.<sup>3</sup>

In 1954, the British construction company Halcrow was awarded a contract to dredge and widen the Dubai Creek. This was Dubai's "most imperative infrastructural project"<sup>4</sup> which helped increase the amount of water traffic and facilitated the landing of heavier equipment necessary for oil exploration. And above all, it expedited the city expansion. With this project, the creek was set to be a central urban element and became a structuring mechanism for later urban articulation and development toward a more polycentric city (figure 10), as well as a transportation armature amongst and beyond the old town areas of Deira, Al Shindagha, and Bur Dubai.



Figure 3: Natural vs. cultured pearls. (Source: www.myheera.com.)

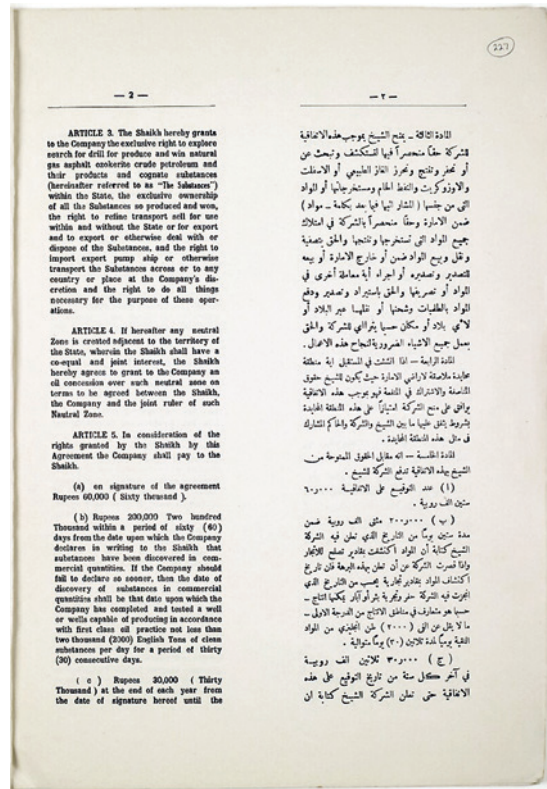


Figure 4: Oil Concession Agreement, 1937. (Source: Qatar Digital Library, www.qdl.qa.)

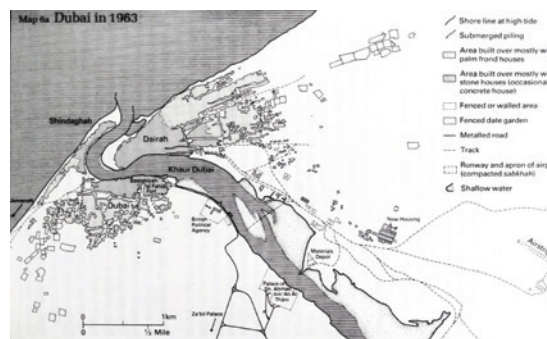


Figure 5: Dubai map in 1963. (Source: Halcrow and Partners, Dubai.)

2. Oil Concession Agreement, 1937, Qatar Digital Library.

3. S. J. Ramos, *The Blueprint: A History of Dubai's Spatial Development Through Oil Discovery*, Belfer Center for Science and International Affairs (2009).

4. Ramos, *The Blueprint*.



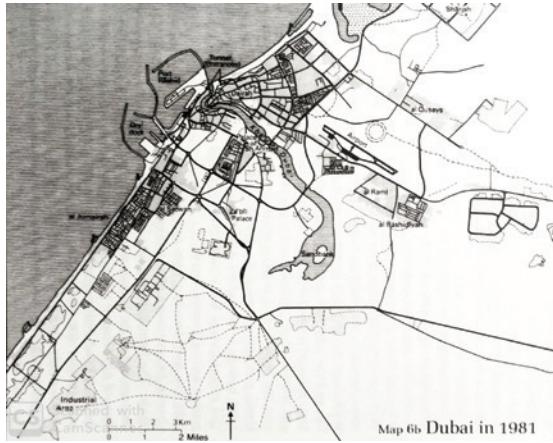


Figure 6: Dubai map in 1981.  
(Source: Halcrow and Partners, Dubai.)

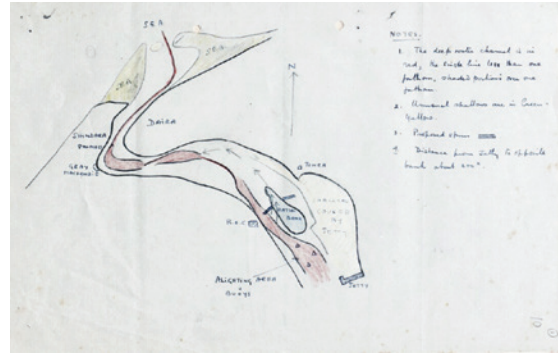


Figure 9: Silt map of Dubai Creek, 1941.  
(Source: Qatar Digital Library, www.qdl.qa.)



Figure 7: P.D. (T C) Ltd. Medical Center in Dubai.  
(Source: Sheikh Muhammed Centre for Cultural Understanding.)



Figure 10: Dubai Creek.  
(Source: Sheikh Muhammed Centre for Cultural Understanding.)

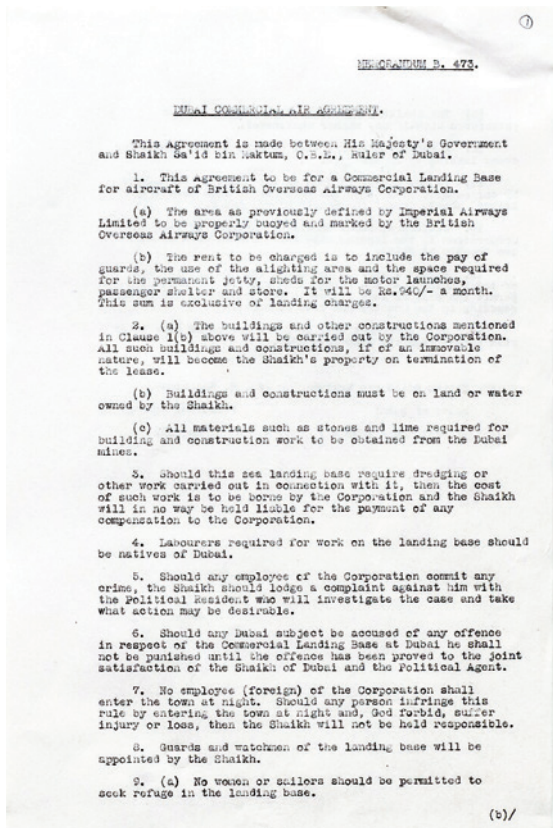


Figure 8: Dubai Commercial Air Agreement, 1941.  
(Source: Qatar Digital Library, www.qdl.qa.)

During this time, the number of Dubai inhabitants was increasing rapidly (table 1), but revenues from oil concession and aviation went to the rulers. This made Dubai merchants look for another sector of business. When banks started to become established, they offered financial facilities for gold trade, stimulating gold re-export activities and becoming an additional source of income.

Year	1900	1939	1968	1975	1980
Dubai Population	11,000	21,000	59,000	183,187	276,301

Table 1: Dubai Population 1900-1980.  
(Source: Dubai Statistic Center)

Because of the trade and oil concession boom of the 1950s and 1960s, a consequential development of the city infrastructure occurred, including a future vision of a city port (Port Rashid) and a new city airport opened in 1960. Many international corporations—trade, oil, shipping, hotels, and financial institutions, including British Bank of the Middle East and National Bank of Dubai, along with eight other banks from Britain, the U.S. and neighboring Gulf countries opened by 1968—were attracted to venture in the city and establish their footholds, stimulating new construction along the creek to be developed (mainly multilevel office buildings). The development of Dubai infrastructure and the two ports set the bases upon which Dubai continued to raise the

capacity to transfer people and goods until it became an important transportation and re-export hub in the area and gradually took the lead from other cities in the region. A more elaborate infrastructure became a necessity and Dubai Municipality was established in 1957 to control the construction activists and city growth nearly one year after the first concrete house was introduced to the city in 1956 (figure 11).



Figure 11: Early concrete building, Dubai.  
(Source: Emirates Natural History Group, [www.enhg.org](http://www.enhg.org).)

After years of oil excavations, deposits were finally discovered offshore from Dubai in 1966 (figure 12), and the first shipment of oil arrived at the U.K. Conoco (Continental Oil Company) refineries in 1969. The oil revenues then began to flow to Dubai, opening additional doors for development besides the successful trade- and transportation-based economy revenues which had been well established during oil exploration in the preceding years.

The population of Dubai reached 183,000 in 1975, however, urging for a new elaborate strategy in Dubai spatial development.



Figure 12: Oil discovered in Dubai, 1966.  
(Source: Emirates Natural History Group, [www.enhg.org](http://www.enhg.org).)

5. Frauke Heard-Bey, *From Trucial States to United Arab Emirates; A Society in Transition* (Dubai: Motivate Publishing, 2004).

6. Heard-Bey, *From Trucial States*.

7. Ramos, *The Blueprint*.

## The Architect and Master Planner

“No architect or architecture practices had more power on shaping the architecture of Dubai than John Harris,” the British architect who was “responsible for Dubai’s Initial strategy toward Modernism.”<sup>5</sup>

John Harris, the Architectural Association School of Architecture graduate who also served as a Royal Engineer in the British Army, had gained overseas exposure and interest in buildings in severe climates. He was hired by the British Building Research Laboratories to design their institute in Kuwait (as a hub for investigation of construction and materials in desert climates), then he was awarded the Qatar State Hospital Design Competition sponsored by the Royal Institute of British Architects in 1953.

## The Master Plan

In 1959, Harris was invited to Dubai to meet Sheikh Rashid Bin Saeed Al Maktoum, the young ruler of Dubai. As a “plenipotentiary in town planning and surveying matter,” Harris was introduced to Sheikh Rashid by the British Political Agent in Dubai, Donald Hawley. Harris was officially commissioned to prepare the first master plan of Dubai in 1959. In 1960, Sheikh Rashid approved and promoted Harris’ first master plan.

“With no planning experience,” Harris developed the master plan of 1960 to become the first physical framework of the city development. Until 1960, Dubai still did not have much infrastructure, lacking paved roads to accommodate the automobile, as well as a utility network and running water. Only a few telephone lines existed.<sup>6</sup>

In the 1960 master plan (figure 13), Harris adopted a grid and roads system as a natural growth of the old part of the city around the creek, trying to weave the old town into the future growth. The master plan’s important contributions were the introductions of a road system, industrial, commercial and public buildings, as well as new town centers and residential quarters. It also included general land-use indications for industrial, residential, commercial, and public (for future schools and hospitals). This planning strategy was clearly opposed to the conventional planning-by-zones strategy and showed a great respect to existing houses and dwellings with a minimum penetration for automobile access in the dense area of the old town around the creek; the master plan also kept the old town untouched. In the same year, Sheikh Rashid signed the Land Law of 1960 and established the real estate sector, which was directly linked to the master plan. The law helped the city take advantage of the resulting land value increase and secured loans needed for different developments. Most importantly, it promoted a new understanding of Dubai as a “territory” with large infrastructure projects.<sup>7</sup>

By 1961, Halcrow was commissioned and then received instructions to begin the implementation of Harris’ master plan. In the same year, the first central water supply system was executed in the city.





Figure 13: Dubai Master Plan of 1960.  
(Source: Dubai GIS Department, Dubai Municipality.)

The plan of 1960 was considered a roadmap, outlining the transportation armature to help structure the city's growth, but it failed to anticipate the fast growth of the city population. It was later enhanced and updated in 1971 (figure 16) with the introduction of a tunnel and two bridges across the Dubai Creek along with a future vision of Port Rashid. In the second master plan of 1971, the zoning areas were increased in size, adding new zones to accommodate education, industry, leisure, and healthcare. Dubai had its first British roundabout in this updated plan (figure 15).



Figure 15: Clock Roundabout.  
(Source: Sheikh Muhammed Centre for Cultural Understanding.)



Figure 16: The 1971 Master Plan of Dubai. (Source: Dubai GIS Department, Dubai Municipality.)

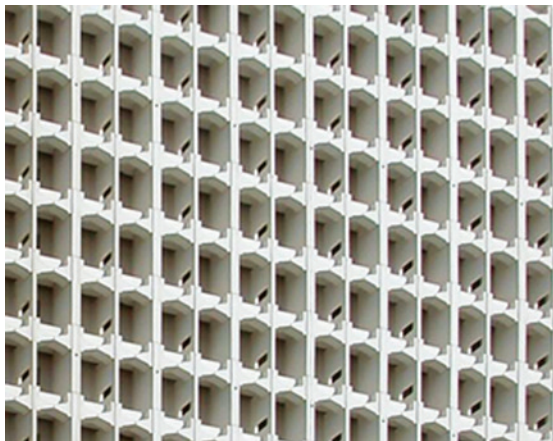


Figure 14: Dubai World Trade Center exterior treatment.  
(Source: Heard-Bey, *From Trucial States*.)

A third and final version of Harris' master plan for Dubai was submitted to the municipality in 1979.

Besides his work as a city planner, Harris was involved in other architectural works that influenced the shape of the city. He developed a new architecture language and introduced a new morphology that arguably spoke the local vernaculars and architecture vocabularies (figure 14)—the language that later found its way amongst other architects in the region (see work by Rifat Chadirji).

Harris' first architectural project in Dubai was the expansion of Al Maktoum Hospital, completed in 1968. In the same year, Harris completed his first "tallest building" in Dubai: the National Bank of Dubai branch in Deira at seven stories (figure 17). Dubai Hospital was Harris' second "tallest building" in Dubai, erected in 1971 (figure 18).



Figure 17: National Bank of Dubai headquarters, Dubai 1971. (Source: Royal Institute of British Architects [RIBA] Photographs Library.)



Figure 18: Dubai Hospital, Dubai 1974. (Source: MIT Library.)

## The First Tower

"I was leaving Dubai and flying back to London. My suitcase had been placed on the new hoist at Dubai's international airport and sent down to the loader below. At that moment a hand rested on my shoulder and a voice said, 'Sheikh Rashid wants to see you.' I explained about my luggage, but of course, my suitcase went one way and I went the other." -John Harris<sup>8</sup>

Harris' third, and last, Dubai (and Gulf) "tallest building" for the next twenty years was Sheikh Rashid Tower (Dubai World Trade Center) (figure 19). As a milestone in the history of Dubai urban growth, the tower was one of very few structures to stand outside the old city or alongside the creek. During the course of the design, the project's height gradually increased during and after design reviews with Sheikh Rashid. It started with a five-story structure then became a 34-story tower, with an additional five floors requested by the time the construction reached eight stories. The final building was completed at 39 stories (figure 20).<sup>9</sup>

The tower architecture was simple and followed the conventional office and tall structure basic planning principles with a regular shape of a central core and outer open office space. It was mainly occupied by oil and other companies related to the industry.

As a modern structure, the tower finally stood as a landmark to define a future "superlative" city identity.<sup>10</sup>



Figure 19: Dubai World Trade Center, Dubai. (Source: Dubai Museum Archive.)



Figure 20: Construction of Sheikh Rashid Tower (Dubai World Trade Center), Dubai 1964. (Source: www.reckontalk.com.)

8. Heard-Bey, *From Trucial States*.

9. Heard-Bey, *From Trucial States*.

10. Ahmed Kanna, *The Superlative City; Dubai and the Urban Condition in the Early Twenty-First Century*, Aga Khan Program at the Harvard University Graduate School of Design, 2013.



## Conclusion

This essay has traced four key events that occurred between 1930–1980 and related, directly or indirectly, to oil discoveries, which I believe had a major role in Dubai's transformation from a small settlement to a large modern city. In addition, I shed light on some of the social and political consequences of the immediate connection to these events.

The first event was the Oil Concession Agreement between the Dubai ruler and Petroleum Concessions Ltd., which introduced an initial understanding of the possible demographic and physical change in the city's future toward "modernity," which was soon to be witnessed. The second event was the Commercial Air Agreement which, above all, reflected the need for Dubai to connect with the economic, commercial, and political world in order to embrace the change. It also indirectly commanded the development of the city creek, which dramatically influenced the subsequent planning strategies of the city and set the creek to be a major commercial and industrial means of transportation, and a dominant planning element that separated yet interlinked both parts of the city. Moreover, the creek development stimulated construction.

The third key event was Harris' First Master Plan of Dubai in 1960, which established the initial physical framework of the city and allowed for future enhancements and modifications. This master plan dictated the city's growth on many different levels and preserved the old city as an important element of the city identity.

The fourth, and last, event was the erection of the Dubai World Trade Center (Sheikh Rashid Tower): As a successful project, the tower was a new built-form to be introduced to the city in the right time and the right place. It first came to satisfy the needs of many important players in the oil industry during the early years of production. And it was located outside the congested city yet in close proximity to it, triggering many future similar developments along the way toward Abu-Dhabi, the neighboring oil-rich city. Finally, the built-form it represented has become the signature of the city today (figure 21).



Figure 21: Dubai World Trade Center in the twenty-first century (left); Dubai World Trade Center in the 1980s (right). (Source: [www.reckontalk.com](http://www.reckontalk.com).)

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