

as to preserve privacy, was often used as a storage space and as a private *majlis* where male guests were received. In some settlements, it was common for first floors to be extended over the street to link to the neighboring house opposite. Such a room bridging a street was called a *sabat*; this not only provided an increase in private living space, but also additional shaded areas for the streets.

Available building materials in the local context usually determined architectural form; for instance, in settlements along the coast, readily available coral stone and gypsum were often used for constructing walls, along with sun-dried adobe. Poor families often lived in *barasti* huts, which were simple structures, made from date palm fronds. Further inland, adobe deposits which could be found along the *wadis* or dry riverbeds, was used as a basic building material for walls and ceilings; these were supported by strong beams made from palm trunks. Adobe was not only in plentiful supply as a local building material, it also improved the indoor climate because of its natural insulation properties and its ability to absorb air moisture. The location of narrow rectangular openings positioned slightly above the floor or just below the ceiling served to maintain constant airflow and cooled the indoor temperature. This system of natural ventilation was perfected by the introduction of wind towers; these functional structures were up to fifteen meters in height with at least two separate chambers: one for catching the wind currents and one for releasing the air. Although architectural design was mainly characterized by such adaptations to climatic conditions, there was also widespread use of ornamental features such as wooden screens and crenulated roofs. Such decorative elements could differ from region to region but were uniform within individual settlements.

In addition to the Ottoman-influenced urban houses of Jeddah, the most notable examples of the pre-oil era are the Seif Palace in Kuwait and Bayt Burj al-Riyah in Dubai. The prominent location of the Seif Palace at the waterfront of Kuwait City made it one of the first coastal landmarks in the region. The wind tower house, Bayt Burj al-Riyah, is located in the Bastakiya district and shows distinctive traditional elements. It is built around a courtyard, with two floors indicating that it belonged to a wealthy merchant family. Its foundations were constructed of masonry blocks, the upper level was constructed using columns of petrified coral blocks, the roof structure was made of wooden beams and palm fronds, and the wind towers were located above the major living spaces.

Oil Architecture: Petrochemical Dollars From the 1930s to the 1990s

Oil production began on the Arabian Peninsula in 1938 when the first oil fields were discovered in the eastern province of Saudi Arabia and on the island of Bahrain, during explorations conducted by British oil companies and adventurers. No other region of the world is as rich in oil reserves as the Arabian Peninsula; approximately 50 per cent of all currently known oil resources are located there. The largest single oil field, the Ghawar Oil Field, with a length of 240 kilometers and a width of 35 kilometers, was found in the eastern province of Saudi Arabia. Although the first oil fields were allocated to British and American oil companies in the mid-1920s, the oil boom and its inevitable effects on society and economy, only began after World War Two.

Countries on the peninsula began to develop into independent nation-states a few decades after the commencement of the oil boom. The precise area and borders of each country's territories were demarcated sometime during the mid-1950s. At the beginning of the twentieth century, the western part of the Arabian Peninsula and most of its population were still under the control and influence of the Ottoman Empire. Only the settlements along the trade route to India were under the protection of Britain and its political allies. After World War One, the powerful Al Saud tribe of the Nejd succeeded in uniting various Arab tribes and factions, in a concerted effort to liberate the peninsula from Turkish hegemony. In 1932, the Kingdom of Saudi Arabia, incorporating the Hejaz, the northern Asir, the Nejd and the Eastern Province, was founded under the leadership of the Al Saud tribe and its astute leader, Abdul-Aziz bin Saud.

Flushed with success, the Al Saud rulers harbored ambitions of annexing the neighboring coastal sheikhdoms. However, the attempt to unify the Arabian Peninsula under the flag of Saudi Arabia failed due to the opposition of the emirs in control of the coastal Trucial States (later the United Arab Emirates), who were fearful of losing their land, power and influence. In this aspect, they were supported by the contracts and treaties that had been signed with their longstanding protector, Great Britain. In 1961, Kuwait was the first sheikhdom to become an independent state; this was soon followed by Bahrain. Qatar and the Trucial States parted ways in 1971 after their attempt at a unified entity failed; thus Qatar rejected the opportunity to become the eighth Arab Emirate. With the exception of Yemen and the Sultanate of Oman, the new Gulf coastal nation-states were founded as oligarchies, based on the tribal hierarchy of ruling families in each country; future successors are members of, and appointed by, the ruling family. Economic and political cooperation among the countries and emirates was not a major political priority until 1990,

when Iraq invaded Kuwait. Then, all countries, apart from Yemen, joined forces to strengthen the Gulf Cooperation Council (GCC) initially founded in 1981 in order to unify regional foreign policies and defend common interests.

In tandem with increasing oil exports, an intense and accelerating process of industrialization began in the Peninsula in the 1970s; this industrialization was initially limited to a number of generally oversized projects and was the beginning of a short-lived industrial revolution lasting no more than three or four decades. In addition to aluminum and copper smelting industries, numerous dry docks and petrochemical plants were constructed. The new building industry started to boom and required vast investments from the state, as well as ambitious local entrepreneurs and shareholders. At first, major infrastructure projects such as streets, energy infrastructure, desalination plants, airports and harbors were the main focus of public investment; eventually, however, after this first stage of industrial and infrastructural development, investment became more directed toward establishing industries designed to help decrease the need for the import of basic commodities such as food, furniture and building materials. The industrial production of other non-essential consumer goods, such as plastics and fertilizers, was the last stage in the so-called industrial revolution. Most industries in the region were based directly or indirectly on oil and gas production and its profits. However, almost all the other elements needed by industry had to be imported, for example, labor, various raw materials and trade licenses and permits. This meant that industry in the Peninsula often had to rely on public subsidies mainly derived from oil exports.

The introduction and development of modern infrastructure led to a rapid transformation process in most oil cities, wherein the former compact town model with its clearly delineated boundaries was replaced by a new ever-expanding agglomeration of peripheries and outskirts. The inland or coastal topography also had a major impact on general land-use decisions: wind direction has led to the establishment of industrial areas in the south and, with them, poor residential areas occupied by substandard and badly maintained worker camps and accommodation. On the other, more salubrious side of towns, large areas were transformed into suburbs, predominantly for the local population and upper-income expatriate groups. Airports soon developed into important regional and global hubs and therefore businesses as well as administrative buildings soon lined up along main roads, thus linking them to old centers and new facilities. Because of limited accessibility by vehicles, former core centers gradually lost their function and attraction as main commercial districts and were soon abandoned by local residents and entrepreneurs. Businesses and high-end markets were gradually replaced by multi-purpose commercial developments sprouting along newly built airport roads. The first shopping malls were built along the urban periphery and due to their attractive, modern air-conditioned environments and accessibility along main roads, they have become not only new marketplaces but also the most significant and widely used public leisure spaces.

Generally, the oil city can be understood in terms of three major areas – the old city core, new business districts along growth corridors and the suburban outskirts. The largest part of the urban area of an oil city is occupied by the suburbs that are typically structured within a system of streets and highways arranged in a rigid geometrical grid. The most common residential typology in oil cities became the walled two-story villa built on a square or rectangular plot. For the most part, the old city core remained a mixed-use center with the expansion and reconstruction of old market areas for lower income locals and expatriate groups. In addition, foreign workers were often accommodated either in the city core or in fringe areas nearby, where multi-story apartment buildings were constructed to accommodate them. As a result, the densest spaces of oil cities tend to be found in these old core areas. In contrast, the mix of high-rise and low-rise typologies in the suburbs and outskirts, due to privacy concerns, was generally restricted.

While there have been different movements and trends within this 60-year period, a number of notable examples can be selected to highlight various isms, primarily centered on striking a balance between tradition and modernity while endeavoring to meet environmental, socio-cultural, and contextual constraints. In Kuwait, the water towers evoke high symbolism due to the reference they make to the ideals of humanity and technology that are signified by the globe and the rocket. On a square site, the National Museum represents an efficient response to climate with an intervention that comprises four buildings, rectangular in plan and irregular in their massing, set around a central garden and linked to each other through bridged galleries and a covered atrium. The National Assembly is inspired by the expansive structure of a bazaar street and tent structure. The building was one of the first projects to introduce contemporary modern design for a government building and it has a particular significance for the first democratic movements in the Arabian Peninsula.

In Saudi Arabia, the National Commercial Bank Headquarters was designed in Jeddah with great attention to climatic conditions and incorporating two important features found in traditional Islamic architecture: natural ventilation and inward orientation. The Ministry of Foreign Affairs is designed in a manner rooted in two Islamic