

# OPPORTUNITIES AND CHALLENGES OF THE UAE CONSTRUCTION INDUSTRY

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## **Abstract**

When it comes to construction, the UAE leads the way. The UAE's construction industry is valued at US\$ 221 billion (about AED 811.73 billion) – the highest in the region. The construction boom has caused a shortage of both manpower and materials, leading to rise in input prices not only in UAE but in the entire region. The prices of materials have reportedly increased more than manpower. Consequently, there has been an escalation in project costs, which have increased by 10-20 per cent since last three years.

This paper examines the opportunities and challenges faced by the developers, consultants, contractors and suppliers due to the construction boom at UAE for the last five years. The paper summarizes that inspite of challenges faced, UAE expects the construction and real estate sectors to remain upbeat for the next ten years.

**Keywords:** UAE, Dubai, Construction boom, opportunities and challenges.

## **Symbols:**

AED UAE Dirham

US\$ United States of America Dollar

## **1.0 Introduction**

The high oil price in the 1970s helped the Gulf countries to expand their infrastructure effectively that provided the ground for the construction boom. Investment in projects began to follow, and as a result, the region put some of the best infrastructure in place.

The construction sector's value increased by 166 percent during the period 2000-2004 and has grown at an annual average growth of 27.7 percent during the same period. Ambitious construction projects will keep the sector buoyant: Burj Dubai, Nakheel Islands, Dubai Land, the Dubai Light Rail Transport (LRT) project and Deira Palm Island. In addition, the announcement of a US\$4.3 billion plan to redevelop Dubai's World Trade Centre will further catalyse the sector. Industrial construction is still expanding, and new investment in the power sector alone is set to hit US\$200 billion by 2020.

## **2.0 UAE Construction**

The UAE dominates the Gulf construction sector with AED130.6 billion worth of projects under construction in 2005, accounting for 63.7 percent of the total value of projects under construction in the GCC states. Saudi Arabia occupies the second slot with AED 28.9 billion with Qatar stands at third place with AED 16.88 billion and followed by Kuwait (AED 12.8 billion). Bahrain (AED 7.34 billion) and Oman (AED 5.1 billion), according to a study commissioned by the Abu Dhabi National Exhibitions Company (ADNEC).

According to a Dubai Chamber of Commerce and Industry (DCCI) report the GCC has experienced a boom in the sector and a significant percentage of project spending is taking place in the UAE. The construction sector has benefited from triple whammy oil revenue, repatriation of GCC money due to attractive business opportunities and historically low interest rates.

Dubai specifically possesses many incentives that have attracted foreign and domestic direct investment. Key factors include the stability of the market to absorb investment, availability of financial facilities, higher return on investment and the expectation of a new law that will clarify expatriate rights to own property. The construction sector in Dubai is considered a key source of employment, income and growth. The sector contributed 12.2 percent of Dubai's non – oil GDP in 2004.

Construction activity is running at its highest level in over 20 years. The region has a growing population and expanding housing needs. A number of outstanding construction projects are not only changing the region's landscape, they are also fundamentally altering what were previously primarily oil-based economies. As of June 2005, there were a total of 1825 building construction projects being implemented within the GCC. The UAE leads the market with 820 projects accounting for 46 percent of the total. Currently 214 building construction projects are underway in Bahrain, 209 in Qatar, 208 in Saudi Arabia, 207 in Kuwait and 167 in Oman. It is clear that the UAE has a vibrant construction sector as it not only leads in the number of construction projects but also in the overall value of the projects being implemented.

Government entities such as Dubai Municipality, Dubai Properties, Nakheel, Department of Civil Aviation, Ports, Customs and Free Zone Corporation, Dubai Electricity and Water Authority (Dewa) and Emaar Properties are leading all development activities with the private sector involved to a much lesser extent. Among the leading government organizations, Nakheel has the largest project portfolio with USD 30 billion currently under development including the Palm Island trilogy, the World, Dubai Waterfront, Jumeirah Lakes, Jumeirah Villas, Jumeirah Golf Estates and International City.

Another project is the 12.5 billion airport development, Jebel Ali Airport City undertaken by the Department of Civil Aviation. These ventures are closely followed by Emaar Properties portfolio of development projects, currently USD 8.30 billion. The Dubai government's investment arm, Dubai Holding could easily surpass many of upcoming projects, currently estimated at USD 7.57 billion.

### **3.0 Factors Attributed to the Construction Boom**

Looking at the macro-economic level, the increase in oil creates an increase in government wealth and expenditure. Besides this, the choice of investments made after 9/11 has been favourable for the UAE, which is considered a safer environment for investments.

The introduction of freehold property ownership by non-UAE and non-GCC residents has helped the industry grow. The UAE's geographic location makes it a prime candidate for investment. Worthwhile investments in infrastructure in globally recognised products such as Emirates airline brings in more companies to the UAE which in turn increases the demand on the real estate market. Since the UAE has a developing economy it is still growing, unlike developed economies which now have to rebuild themselves. In a developing economy where the service and financial industry aren't developed and industry is not very mature, investors look forward to real estate as investment vehicles as opposed to other investment opportunities. Real estate investment has what economists call a multiplier effect. Every dollar invested produces more returns. Since construction depends on manpower it feeds its own cycle.

According to UAE Contractor's Association (UCA), 16,000 contractors are sharing the UAE's construction business and 340,000 workers are employed in the sector. The total value of construction projects in the emirate is expected to increase nearly 175 percent from AED 8.6 billion in 2005 to AED 23.12 billion in 2006 and another AED 24.59 billion in 2007. The overall investment plans of the Emirate during the next five years shall be more than AED 500 billion to be invested in wide – ranging projects in Abu Dhabi during the next five years.

#### **4.0 Construction Projects**

The 2006 Gulf Construction Yearbook estimates that US\$4 billion is spent each week on projects in the six Gulf Arab countries. The estimated cost of these developments is set to exceed AED 360 billion in 2006. Both Dubai and Abu Dhabi International Airports are also undergoing massive expansion. Dubai is currently expanding its hotel capacity. Over 120 new hotels are expected to be constructed during the next five years. These include 80 hotels on the two Palm Islands projects. Additionally, Dubai Festival City is under construction as Dubai develops its role as a tourist destination. The various projects (Table 1) at Dubai and Abu Dhabi under the GCC are as follows:

## **4.1 Dubai**

### **1. Burj Dubai**

Burj Dubai, the tallest tower in the world, the iconic signature tower is part of AED 73 billion urban development in the heart of Dubai spreading across 500 acres and is a combination of residential and commercial space. It will include a boutique hotel, recreational facilities and entertainment venues, serviced residences and apartments. The tower is due for completion by 2008.

### **2. The World of Islands (US\$ 4 billion)**

The client is Al Nakheel Properties; known previously as Dubai Palm Developers. Parsons Corporation is the design – engineering consultant. The World Islands is the third offshore tourism project being constructed by Al Nakheel Properties. The two other projects are Palm Jumeirah and Palm Jebel Ali, both being built in the shape of palm tree off Dubai' s coast. The world project calls for the construction of a major tourism cluster of offshore islands off the coast of Dubai. Each island will be home of hotels, residential apartments and entertainment facilities. A series of man – made islands positioned to form the shape of the world map. Each island will vary in size and will have a theme to show a close similarity to the country it represents. There will be no road access to the islands and two types of breakwater will surround the islands.

### **3. China Tower (US\$ 650 million)**

The client is Al Nakheel Properties. Associated Consultants Engineers (ACE) International of Lebanon is the architectural consultant. Project calls for the construction 25 buildings in two stages. Chinamex Apartments – 1 will cover the construction of 13 buildings, each of four – five storeys, with a total built-up area of about 1.2 million square feet. Chinamex Apartments – 2 will include the construction of 12 buildings, each of four –five storeys, with a total built – up area of about 1 million square feet. In addition to the building, a shopping mall and related

facilities to be built in the shape of a dragon over 150,000 square meters and a 30,000 square feet warehousing facility know as, Chinamex mart.

#### **4. Two Palm Islands (US\$ 3 billion)**

The client is Al Nakheel Properties. The project is managed by a group of US consultants headed by Hill International and Parsons Corporation. The Palm Islands project focus on the creation of two man – made palm tree shaped islands – Palm Jumeirah and Palm Jebel Ali. Each island will be in the shape of a palm tree with 17 fronds and a trunk. The islands will each extend 5 kilometres offshore and will be 5 kilometres in diameter. Each island will be built from about 80 million cubic meters of sand and rock dredged from the sea bed or to be mined from quarries. Some 2000 villas, 40 luxury boutique hotels, two marinas and a water theme park will be built on the islands, as well as bridges, tunnels, shopping complex and related entrainment facilities.

#### **5. Dubai Lost City project (US\$ 165 million)**

Client is Al Nakheel Properties. DMJM International is the project manager. Project calls for the design and construction of a hotel, a swimming pool and several recreational facilities at the Dubai Lost City project. The project calls for the construction of a: 340 room five star hotel, over 72,000 square meters; 24 suites; and 20 poolside cabana rooms. This project will include the construction of an artificial rainforest, waterfalls, aquatic features, desert areas, an oasis, seven restaurants and related facilities. The proposed swimming pool will be constructed 7 metres below ground level. The proposed hotel, to be called Caven/Garden, will be 37 meters high and will be constructed close to the pool. The facilities will be located adjacent to Jebel Ali Village off Shaikh Zayed highway.

#### **6. Gardens Shopping Mall (US\$ 200 million)**

Client is Al Nakheel Properties. Hill International is the project manager and Callision Architects is the design engineers. A new upscale shopping mall was completed. The mall

exhibit five country theme – shopping zones (Morocco, Egypt, Persia, India and China) – over a total built area of 5.4 million square feet including parking for over 5000 cars.

## **7. Dubailand**

Dubailand, a multi- billion- dollar residential and leisure development had launched several mega projects which will exceed AED 65 billion. They will have 12 entertainment parks, including one of the largest water parks in the world. The theme parks will include The Restless Planet, a dinosaur theme park being developed in cooperation with the Natural History Museum in the UK. It will also house the Mall of Arabia, billed as “one of the largest shopping centres in the world.”

## **8. Atlantis Resort**

Work has started at the US\$1.5 billion Atlantis resort located on the crescent of Palm Jumeirah. The package includes all structures for the hotel and convention centre and craneage. A JV of Bahamas based Kerzner International and the local Istithmar is the client.

## **9. Emirates Crown Tower**

ASGC is the contractor and developer; and DAR is the consultant. Comprised of two basement levels with a ground floor and three levels of parking of the 70 – storey, 290m building. The design for the US\$ 82 million project was influenced by the desire for optimum height without requiring a damping system.

## **10. Downtown Jebel Ali**

Limitless, a Dubai World company is the developer for the AED 70 billion township, Downtown Jebel Ali, that will house 235,000 people. The massive project to be completed in phases by 2011, will occupy an 11 kilometre land stretch covering 200 hectares with built-up area of 70 million square feet on Shaikh Zayed Road between the Jebel Ali Free Zone, Dubai

Waterfront and Techno – Park. It is designed to be gateway to the World Central International airport.

There will be a total of 326 buildings of which 237 will be residential and the rest commercial. The Downtown will reflect some of the world's most vibrant cities. The project will be connected to Dubai with four Dubai Metro stations. Construction of the project is currently underway, with the first four commercial buildings due for completion by mid 2007. The infrastructure works for the whole project is to be completed by 2009 while the entire project is slated for completion by 2011.

#### **4.2 Abu Dhabi**

Abu Dhabi will award more than AED 47 billion worth construction projects by 2007. Al Raha Beach Development(AED 53.96 billion), Al Reem Island Development, the Abu Dhabi International Airport expansion (AED 24.9 billion), the Mohammed Bin Zayed City , and the Shams Abu Dhabi project by Sorouh Real Estate (AED 25 billion) are the few of the mega projects underway in Abu Dhabi. Airport development and Road infrastructure projects are valued at AED 12.69 billion, representing 19% of the total value, according to a study commissioned by the Abu Dhabi National Exhibitions (ADNEC). In keeping with Abu Dhabi's drive towards diversifying its primarily oil-based economy, construction of Industrial parks accounts for AED 2.8 billion, shopping centres are valued at AED 1.77 billion, representing four and three percent of the total respectively.

Mixed use projects which combine residential and commercial buildings, account for AED 37.32 billion in Abu Dhabi, constituting the largest segment of ongoing construction activity and representing 56 % of the total project value. The aggressive growth of the construction industry from AED 8.6 billion in 2005 is expected to rise to AED 23.12 billion in 2006, an increase of 173%.

The Abu Dhabi construction market is proving to be one of the most dynamic markets in the region and there are clear indications of continued growth. Record oil revenues as well as the



property law unveiled in 2005 in Abu Dhabi will continue to fuel the massive scale of project development in the emirate.

### 1. Shams Abu Dhabi (AED 25 billion)

The Sorouh project on Reem Island will be a landmark development within Abu Dhabi and the United Arab Emirates. The Sorouh project will provide an outstanding lifestyle environment and a sustainable development, offering places for people to live, work, and enjoy recreation and leisure activities. The Sorouh development will be primarily a residential development with retail, offices, entertainment venues, and recreation activities. The total proposed built-up area will be approximately 6,017 Million Square Meters, (64,768 Million SFT), inclusive of adequate parking area for residents and visitors.

The project is jointly managed by Hill International Inc, 3D/I+PI and Williams; and Sorouh Real Estate is the client for the ambitious project. Hill International based in USA have extensive project management and construction claims consulting services experience worldwide.

**Table 1: UAE Building Projects [1]**

Project Title	Client	Value/Range (US \$ M)	Project Status	Project Type
Emirates Airlines HQ, Dubai.	Emirates Group	150	Under construction	Commercial
Rose Rotana, Dubai.	Abcco Group	136	Under construction	Hotel
Green Lakes, Dubai.	Asam Investment & Real Estate	150	Under construction	Residential
Orenburg Island on the World	Perseus Property	251-500	Project under design	Mixed use
Peninsula Tower in Business Bay	Tulip Business Developers	123	Project under design	Commercial
6 Towers in District 7WX, Dubai Marina.	Emaar Properties	157	Under construction	Residential
Raffles International Hotel	MKM Group	140	Under construction	Hotel

at Wafi city				
Rostov Island on the World	Perseus Property	251-500	Project design	under Residential development
The Binary in Business Bay	Omniyat	150	Project design	under Commercial
Dubai Marina-Phase 2	Emaar Properties	251-500	Project design	under Mixed use
Julphar Towers in RAK	RAK Properties	116	Under construction	Mixed use
Goldcrest Dreams in Ajman	Star Giga Establishment	190	Project design	under Residential development
Ocean Heights 2 in Dubai Marina	Damac Properties	251-500	Project design	under Residential development
Ritz Carlton in DIFC	Union Properties	275	Under construction	Hotel
Horn Tower at the Jumeirah village	High Rise Real Estate	136	Project design	under Mixed use

## 5.0 Opportunities

Record oil prices have enabled the Gulf countries to re-examine their economic development strategy. Countries in the Gulf Co-operation (GCC), particularly the UAE have decided to diversify their economy by first re-investing their additional petro – dollars into infrastructure industries and facilities. This has led to the undertaking of many mega-projects not only in Oil & Gas, but also in logistics, industrial parks, environmental services and urban infrastructure such as real estate and hospitality.

By April 2006, the total value of planned and active infrastructure projects in the Middle East had exceeded 1 trillion US dollars, of which more than 250 billion US dollars was generated within the first three months of this year alone. For comparison, China attracted some 61 billion US dollars in foreign direct investment in 2004, and India attracted 5 billion US dollars.

New investments in the construction and tourism sectors of over US\$ 20 billion will ensure that building activity will offer a wide range of opportunities in the Architectural, Construction and Engineering services.

## 6.0 Challenges

There are no constraints on architectural vision – the artist is encouraged to dream the impossible dream and is thus free to create.

There is no place in the world where construction moves as fast as the UAE. The exponential timescale is the most impressive feature of the phenomenal development at UAE.

The UAE construction industry desperately needs to ensure that the buildings it builds last by following predefined building standards. The industry still sits on the fence between the US and European standards, depending upon the consultants, and this needs to change. There are no national design codes and practices in place. There is vagueness in construction liability and overall regulation of the construction decision making process is not well defined.

There is an acute shortage for workers, supervisors, engineers, project managers, contractors, construction materials, machinery, equipment, vehicles and construction related materials including furniture and interior products. About 30000 or 24 percent [2] of the world's 125,000 construction cranes are currently operating in Dubai. It's not just cranes in short supply. The simultaneous building booms in the Emirates capital Abu Dhabi, and in nearby Qatar and Bahrain have swept the market of bulldozers, excavators, pile drivers and other machinery. Prices of materials like concrete, glass, steel and aluminium are soaring. The price of construction materials including cement, concrete and steel have almost doubled since 2003 and wages for project manager, foreman, carpenter, unskilled labourers working in medium and big projects have also increased. Recent statistics reveals that in 2003, the price of cement per bag was AED 9.5 (average) which reached AED 18 per bag in 2005 and the salary of a project manager in 2003 was AED 16,000 on an average which increased to AED 22000 last year.

The sheer size of projects in the Middle East makes the formation of alliances a particularly compelling approach. By pooling together resources and talent to offer better value

propositions and mitigate risks, these alliances have more bargaining power and are more competitive.

The Middle East market is a highly competitive one involving top notched international firms trying to capture a share of the rapid developments. Firms need to capitalise on reputation of efficiency and quality to position themselves in the face of strong competitors.

Due to harsh, high salinity of the local environment, the service life of reinforced concrete is significantly lower in the UAE than in other parts of the world.

Providing adequate infrastructure and determining the full load for chilled water, sewerage and electricity.

Logistics management which includes transportation, food, accommodation and medical services for a working population of 35000 to 50000 workers per day for a project like Shams Abu Dhabi.

## **7.0 Conclusion**

The Middle East market has indeed become a very exciting market. For firms seeking high growths and rewards, Middle Eastern markets hold great promises. With some of the most innovative projects are under way in the UAE, the construction and real estate sectors expects to remain upbeat.

## **References:**

- [1] Construction Week November 2006 issue.
- [2] Construction Week October 2006 issue.