

**DOHA HIGH RISE OFFICE BUILDING**

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### **A) Introduction:**

The Doha High Rise Office Building, located on the Corniche road in the centre of Doha City, is a landmark addition to the prominent features of Doha city where it occupies interface and is overlooking the waters of the Gulf. The development is situated only a few metres away from the Ministries and Government Departments and 15 minutes from Doha International Airport.

The Tower is cylindrical in shape and measures 45meters in diameter. It is capped by a dome and topped by a lightning conductor at a level of 231.5meters above ground with a total built up area of approximately 110,000 square meters.

The Tower has been designed by innovative French Architect Messrs Atelier Jean Nouvel. The design is unique and it is the first design of a Tower with reinforced concrete dia-grid columns in a cross (X) shape covered at the external facade by geometric complexity of the oriental moucharabiah and butterflies in the shape of Bee's heaves acting as a sun screen. The inner layer is aluminum curtain walling with slightly reflective glass that protect from the suns rays. There is a walkway between the sunscreen and the curtain walling that allow for maintenance to wash and clean the curtain wall.

Each floor offers panoramic views towards the Cornice Road and the Gulf to the East and South, the downtown of Doha City to the West with the Peal Qatar and Lusail on view Town to the North.

In addition to it's distinguished location and shape, the Tower has been finished with quality material and equipment that is incompliance with the highest International Standards. The Tower is equipped with the latest fire fighting systems that match the criteria adopted in the State (NFPA) governing the design of such systems and the latest security systems, surveillance cameras and access control system programmed to control entry of individuals into the court yards and each floor of the Tower. In addition is the availability of a passenger control system that distributes the passengers among the lifts with a sophisticated system for the movement of the elevators.

### **B) Advantage of the Tower:**

Tenant of the Tower will enjoy the following unique advantage:

- All offices are with a net height of 3 meters. The floors are comprised of galvanized raised flooring that facilitates the electrical connections and other services.
- High flexibility in the distribution and division of offices.
- False ceiling equipped with lighting, smoke detectors and sprinklers as part of the fire fighting system. In addition all tower areas are covered with an affective fire alarm system complete with a voice system in case of evacuation.
- Pantry / buffet room equipped with the necessary apparatus.
- Toilets for men and women on each floor in addition to a separate toilet for the disabled.
- High-tech air conditioning system.
- An advanced Building Management System (BMS).
- The latest communication systems and the internet through a network of Fiber Optic cables for telephone and high speed internet network services that serve both Q- Tel and Vodafone. In addition, each floor is equipped with a communication rack and Data/Telephone outlets covering the whole floor area.
- A comprehensive satellite TV system.
- Restaurant at Level 42 with panoramic views of Doha City and the Corniche
- A programmed system for external lighting with LED lighting which highlights the Tower in a stunning form at night.
- All levels contain two exit doors, water outlet, hydraulic Lift and walkway between the sun screen and the curtain walling to facilitate the cleaning and maintenance of the curtain walling. In addition the walkways could be open to access from the outside of the Tower, to the upper and lower levels for cleaning purposes and in the event of emergency situations.
- Fire exit and fire escape methods using special lifts only operate during fire accidents, being implemented in accordance with the Civil Defense Department and International Specifications.
- Landscaped green areas in a unique design covers more than 40% of the land area and contains a vertical garden which is the first of its kind in the State of Qatar.
- Easy access to the Tower. In addition to the availability of car parking areas that accommodate 870 cars for the Offices.

### **C) The Main Components of the Doha Tower:**

Doha Tower is consists of 49 floors devoted to office and car parking at the Basement floors distributed as follows:

1. Public Lobby comprises of reception area, offices, and rooms for supervision and security on the ground floor with a total area of 1500 M<sup>2</sup>,
2. Offices at Mezzanine level with a total area of 680 M<sup>2</sup>
3. 41 floors of offices with a total built up area of 42,132 M<sup>2</sup>. The area of floors is ranging between 1071 M<sup>2</sup> and 922 M<sup>2</sup> with an average of 1053 M<sup>2</sup>
4. Restaurant at level 42 with a total area of 576 M<sup>2</sup> and a capacity of 80 customers.
5. Offices for VIP at level 43 with a total area of 730 M<sup>2</sup>
6. Offices for VVIP at level 44 with a total area of 954 M<sup>2</sup>
7. Special gate for the VIP at level -7 M
8. Public Services at each level comprised of the following:
  - Toilets for Male (3 Nos)
  - Toilets for Female (2Nos)
  - Toilets for the disabled at each floor
  - Plant rooms for electricity and other services
  - Public toilets at the Basement floors
9. Offices for security services at level -7 M with a total area of 57 M<sup>2</sup>
10. Offices for Safety services at level -7 M with a total area of 31 M<sup>2</sup>
11. Offices for technical supervision at level -7 M with a total area of 28 M<sup>2</sup>
12. Separate building of two floors for electricity stations and cooling services
13. Three Basement floors for the car parking that accommodate 870 cars for the Offices only. The car parking area is equipped with fire alarm with automatic sprinkler system that functions in the case of fire. Each Basement floor includes two escape routes that are fire and smoke resistant in addition to huge fans that extract the smoke from the fire affected floors and air pressurizes the upper and lower levels to prevent smoke transfer to unaffected areas to ensure safe evacuation of occupants from the building.
14. Fire fighting room at level (-4m) with a total area of 57 M<sup>2</sup>.
15. Area for loading and off loading goods in the north side of Basement 1.
16. Water storage tanks for public use and for fire fighting purposes.
17. Stores (closed) for storage purposes at the Basement levels with a total area of 4604 M<sup>2</sup>

## **D) Lifts**

The estimation of the number of the lifts and the speed of the same has been achieved following specialized study that adopted the highest International Standards and modern techniques. The control of the lifts movement is based on a modern technique that control and guide the user (Destination Control System). On the basis of this modern Destination Control System the Tower was provided with 23 elevators for multiple uses as shown below:

- 8 Panoramic lifts (glass) with a speed of 6 meters/second for public use travelling up to level 27.
- 4 High Rise Lifts with a speed of 8 meters/second serve all levels up to level 41
- One Lift with a speed of 8 meters/second for VIP
- One special Lift for VVIP with a speed of 0.13 meter/second for service between levels 42, 43 and 44
- 2 Lifts for fire fighting with a speed of 4 meters/second travelling up to level 42.
- 2 Lifts with a speed of 2.5 meters/second for Public Services travelling up to level 42
- 4 Lifts with a speed of 0.75meter/second serving the three Basement levels (Car Parking) up to the lobby.
- One Lift with a speed of 0.5 meter/second for loading located in a separate building for the electricity stations and cooling serves the three basement levels.

It is to be recorded that the maximum waiting time for the Lift is not exceeding 20 seconds which resulted from the implementation of the Destination Control System.

## **E) Service and Power Station Building**

The Service Building consists of two floors. The ground floor has been a located for the electrical Sub-Station which contains the high tension switchgear (11 KV), 10 No power transformers (1250 KW each), and low tension switchgear which feeding all the systems and utilities in the Tower. The first floor has been allocated for the chiller equipment for the air conditioning and all the auxiliary equipment that feed it.

## **F) Specialized Security and Communication Systems**

The Tower has been provided / equipped with the latest high tech communication system and fiber optic cables for telephone and high speed internet services, with specialized security systems to control the entry of individuals and their movement at each entrance and egress to the floors. The Tower has been equipped also with an advanced closed circuit television monitoring system (CCTV) which will allow the security personnel to follow the movement of the visitors and staff within the Tower.

The Tower is also equipped with a very advanced access control system controlling all the entrance and egress to the tower through gates and barriers as well as controlling vehicle access to the basement floors. The barriers are linked with direct communication / contact with the security personnel in emergency conditions. Each of these systems have been linked to a comprehensive and effective Building Management System (BMS) which could detect any failure / or malfunctions that may occur on any of the aforementioned systems through screens showing all details and information needed to assist the operation and maintenance team of the Tower.

## **G) Mechanical Systems**

The Tower has been equipped with its own central cooling system using chilled water from nine chillers which ensure moderate temperature around the clock. This has been done through two Air Handling Units (AHUs) on each floor handling the cold air and achieving a low level of noise resulting from the operation of machinery systems by using sound attenuators on the air supply and return attached to these two units. The fresh air supply is provided to floors by main fresh air handling units available at the mechanical rooms that provide the building with fresh air supply after being treated and cooled.

## **H) Fire Alarm and Fire Fighting Systems**

All Tower areas are covered with an effective fire alarm system together with voice system in case of evacuation with specialized links to the lifts, doors, fans, gates, barriers,.etc, to make the way clear in case of evacuation.

The Tower is served by an automatic sprinklers system that is sensitive to flames and functions during the event of fire. Each floor includes two escape routes that are fire and smoke resistant. The Tower has been equipped with huge fans that extract the smoke from the fire affected areas and pressurizes air to the upper

and lower levels to prevent smoke transfer to unaffected areas to ensure safe evacuation of the occupants from the building while the smoke is discharged to outside the building.

**I) Office Areas to be used for each Level in the Tower**

<b>Level</b>	<b>Description</b>	<b>Purpose</b>	<b>Total Area M<sup>2</sup></b>
00	Ground level	Public Lobby	1750,18
0	Mezzanine level	Offices	815,41
1	01 <sup>st</sup> level	Offices	1206,19
2	02 <sup>nd</sup> level	Offices	1196,08
3	03 <sup>rd</sup> level	Offices	1193,86
4	04 <sup>th</sup> level	Offices	1180,80
5	05 <sup>th</sup> level	Offices	1212,81
6	06 <sup>th</sup> level	Offices	1198,24
7	07 <sup>th</sup> level	Offices	1191,14
8	08 <sup>th</sup> level	Offices	1185,29
9	09 <sup>th</sup> level	Offices	1198,24
10	10 <sup>th</sup> level	Offices	1178,18
11	11 <sup>th</sup> level	Offices	1176,02
12	12 <sup>th</sup> level	Offices	1172,23
13	13 <sup>th</sup> level	Offices	1179,82
14	14 <sup>th</sup> level	Offices	1159,51
15	15 <sup>th</sup> level	Offices	1152,19
16	16 <sup>th</sup> level	Offices	1147,70
17	17 <sup>th</sup> level	Offices	1157,23
18	18 <sup>th</sup> level	Offices	1137,77
19	19 <sup>th</sup> level	Offices	1130,99
20	20 <sup>th</sup> level	Offices	1113,94
21	21 <sup>st</sup> level	Offices	1126,37
22	22 <sup>nd</sup> level	Offices	1127,12
23	23 <sup>rd</sup> level	Offices	1113,63
24	24 <sup>th</sup> level	Offices	1104,11
25	25 <sup>th</sup> level	Offices	1113,35
26	26 <sup>th</sup> level	Offices	1098,23
27	27 <sup>th</sup> level	Offices/Transfer	1083,08
28	28 <sup>th</sup> level	Offices	1063,21
29	29 <sup>th</sup> level	Offices	1033,40
30	30 <sup>th</sup> level	Offices	1211,61
31	31 <sup>st</sup> level	Offices	1203,31
32	32 <sup>nd</sup> level	Offices	1182,94
33	33 <sup>rd</sup> level	Offices	1173,43
34	34 <sup>th</sup> level	Offices	1151,23
35	35 <sup>th</sup> level	Offices	1130,74
36	36 <sup>th</sup> level	Offices	1118,69

37	37 <sup>th</sup> level	Offices	1110,75
38	38 <sup>th</sup> level	Offices	1075,28
39	39 <sup>th</sup> level	Offices	1039,26
40	40 <sup>th</sup> level	Offices	1002,07
41	41 <sup>st</sup> level	Offices	946,42
42	42 <sup>nd</sup> level	Restaurant	576,36
43	43 <sup>rd</sup> level	VIP Offices	730,64
44	44 <sup>th</sup> level	VIP Offices	953,72