DUBAI WORLD CENTRAL

Residential City

Planning Regulations & Development Guidelines

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PREFACE

The rapid and unprecedented growth of Dubai's economy and fast growing increase in air traffic, both for passengers and cargo, prompted the Higher Authorities in Dubai and "Dubai Civil Aviation, D.C.A" to develop a strategy for the expansion of Dubai Airport facilities and services to cope with future demand.

As of mid 1990's, Dubai started a vast program to expand its existing Dubai International Airport (DXB) with the aim to increase its capacity for passengers and cargo. During implementation it became clear that there were physical constraints that restricted a parallel expansion of cargo facilities. This fact, coupled with the results of several air traffic projections about ultimate passenger capacity of DXB, prompted the authorities to initiate in 2004, the studies for the development of a new international airport at Jebel Ali.

The selected site for the new airport is close to the Jebel Ali Free Zone (JAFZA), and presents several advantages for the immediate development of a cargo terminal and logistics city, which would benefit from a direct road link to the JAFZA, as such exploiting potential synergies.

The development of such a large international airport, with six runways, the largest contemplated at present worldwide, represented a major planning challenge. Al Maktoum International Airport (JXB), lately named as such, will be a major generator of employment. The planned airport would represent a significant pole of attraction for industrial, office and service employment. Such massive employment will result in an even larger demand for housing, community facilities and services.

It became clear at the early stages that there is a need to plan the areas around the airport to absorb employment, housing and supporting services. And that is how the concept of an Airport City emerged around the airport platform to become an integral part of the Master Planning process. The new airport city, "Dubai World Central" or DWC, extends over an area of 80 km^2 around the airport platform, which itself occupies an area of 60 km^2, bringing the total site area of Dubai World Central (DWC) to 140 km^2.
The components of DWC are:

1. *Al Maktoum International Airport;*
2. *Dubai Logistics City(DLC);Staff Village*
3. *Residential City; Staff Village*
4. *Aviation City;*
5. *Golf City;*
6. *Commercial City;*
7. *Exhibition City*
8. *East and West Entrances*
9. *Humanitarian City (DLC & Golf)*

The amount and scale of development in DWC is enormous; comprising the site area of around 140 km^2, a resident population of 950,000 and employment for some 750,000(including airport). This document covers a general description of the Master Plan for Dubai World Central (DWC) with major focus on the development guidelines and planning regulations of the Residential City that has been master planned around the airport. The guidelines and regulations have been suggested to ensure that the development of the city will follow the envisaged master plan and common grounds of development heights, character, coverage (FAR), quality, etc… the basic components of a developing a city for the future.

As a final note, the systematic and methodological approach has been followed in preparing the Master Plan and establishing the basic economic and planning parameters underlying the development of such regional and urban development project. At the commencement of the operation no definite figures were available to determine the extent and rate of growth. These are established based on research, benchmarking, stakeholder involvement, experimentation and empirical judgment. The concept is that a major airport with higher capacity for passenger and freight movements will generate employment demand, which will be accommodated in surrounding metropolitan urban communities with close proximity to the employment centers. Travel to work is optimized to the benefit of the residents of the metropolitan area as a whole.

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Glossary of Terms

"Authority" shall mean the Dubai Aviation Corporation (DAC) - Dubai World Central (DWC) or any other entity delegated by DWC.

"Building" denotes any walled and roofed structure erected inside a plot above the ground level, used for living, working, storing or fabricating, and which abide to the conditions of the Planning Regulations of the plot.

"Building Completion Certificate" is a certificate granted by the Authority acknowledging completion of construction and finishing and enabling connection to public utilities and occupation.

"Building Height" denotes the height of a building in meters measured from the finished sidewalk level to the top of the roof parapet or to the top of the coping tile of the pitched roof. The building height is measured along the midpoint of the building elevation facing the street that provides access to the plot. In cases where the plot is bounded by more than one street, the façade facing the main street, (or if not applicable, the façade having the longest frontage to the street) will be taken for reference.

"Building Line" denotes the vertical line that defines the outer face of the building façade. Decorative elements and cornices may project a maximum of 0.60m from the building line. Other projecting elements such as balconies must comply with current building regulations and specifications issued by Dubai Municipality.

"Building Permit" is the license that the Authority issues to allow construction work to proceed on a specific piece of plot, in accordance with approved plans, specifications and conditions.

"Consultant" means a locally registered consultant holding a valid consulting Engineers license from the Dubai Municipality.

"Contractor" means a registered contractor holding a valid contracting license from the Dubai Municipality and Dubai Chamber of Commerce for the type of works and classification therein.

"Developer" shall mean the lessee or his authorized Agent who submits an application to the Authority on behalf of the lessee.

"Floor Area Ratio" (F.A.R.): coefficient that denotes the ratio of the total built up area of buildings and structures on a given plot over the total land area of the plot. When calculating the F.A.R., the areas of the following shall not be counted as part of the total built up area:

i. Basement floors with no direct natural lighting, intended for use for parking, building services and storage.

ii. Balconies, terraces, garden sheds (of up to 2.20m clear height) and non enclosed shade structures (i.e. completely open on 2 sides at least).

iii. Mechanical floors with maximum clear height of 2.20m, elevator rooms, stairwells and areas reserved for water tanks and other mechanical equipment on the roof.

iv. Roof Attics, or parts thereof, which are not used and cannot be converted for habitation.

v. Mezzanine floor having direct access only from the ground floor and not from any common stair or lift lobby, and that has an area less than or equal to 50% of the gross Ground Floor area of the building.

"Green Building" is an environmentally responsible, profitable and healthy place to live and work.

"Ground Floor" denotes the floor directly accessed from the finished level fronting the main entrance to the building. It can be at the same level as the ground level, higher by a maximum of 1.2m, or lower by a maximum 1.0m from the finished site level.

"Habitable Room" means a room used for office, shop, workshop or other purpose involving occupation by human beings for continuous periods of time, but not including a W.C.

"Hazardous Goods" means:

i. Any compressed, liquefied or dissolved gases.

ii. Any substance which becomes dangerous by interaction with water or air.

iii. Any liquid substance with a flash point below 75°C.

iv. Any corrosive substance or a substance which emits poisonous concentrations of fumes when heated.

v. Any substance liable to spontaneous combustion.

vi. Any radioactive material and any substance which readily emits heat or other harmful radiations when it changes state or decomposes.

vii. Sheds which contain vehicles loaded with hazardous materials.

viii. Any other substance considered hazardous by the suppliers.

"Landscaping" is the treatment and maintenance of a plot area or property with predominant vegetation such as ground cover, plants, shrubs or trees. It includes paving, bricks, rock work and other natural or decorative features in an organized manner designed to create a specific appearance.

"Leadership in Energy and Environmental Design (LEED) Green Building Rating System" is the accepted benchmark for the design, construction and operation of high performance green buildings.

"Loading Space" is an area used for loading or unloading of vehicles, located entirely on private property with a minimum vertical clearance of 4 meters and provided with permanent independent access.

"Mezzanine Floor" denotes a floor that can be accessed from the ground floor only and which covers a maximum of 60% of the ground floor area excluding communal entrances, stairs and lift areas. The minimum height of the Mezzanine floor has to comply with applicable Dubai Municipality Building regulations and specifications.

"Operation Fitness Certificate" is a certificate granted by the Authority after a Building Completion Certificate is issued, acknowledging completion of installation and testing of machinery, and confirming the facility is safe for Operation.

"Permanent Building or Facilities" means buildings or structures designed and constructed in reinforced concrete, or steel with block or metal cladding, or with a combination of steel or precast concrete or reinforced bearing block walls or brick, or other durable material.

"Plot" is a parcel of land defined by clear boundaries and coordinates.

"Plot Area" is the total area of a plot within the plot lines as measured on a horizontal plan.

"Plot Frontage" is the portion of the plot construed nearest to the street.

All sides of a plot adjacent to streets shall be considered frontage.

"Plot line" is any line bounding a plot herein defined.

"Podium": A Podium is defined as the lower part of a building acting as a base on which the upper part, often a higher part of the building, is located. Podium may be used for commercial, recreational, offices and parking, while the upper building may be dedicated for residential, hotel and offices.

"Project" means the construction of a permanent building, any other civil work on a leased\ sold property including any modifications or installations in pre-built facilities.

"Regulations" means the rules and statutes listed in this publication and other regulations issued by the "Authority" or any other rules issued in the future.

"Service Authority" shall mean the following entities:

- ☐ Water Authority - DEWA
- ☐ Electrical Authority - DEWA
- ☐ Waste Water Authority – DWC - DuServe
- ☐ Irrigation Authority – DWC - DuServe
- ☐ Storm water Authority – DWC – DuServe
- ☐ Fire Authority - Dubai Civil Defense
- ☐ Telecom Authority - DWC - IT&T
- ☐ District Cooling Authority – DWC - DuServe
- ☐ Voice / Data - DWC - IT&T
- ☐ Tetra Radio System - Dubai Police Frequency Regulator & DWC IT & T - Service
- ☐ Police and Security - Dubai Police
- ☐ Waste Collection – DWC- DuServe

"Setback": denotes the distance separating the building line from the plot boundary line that must be left free of building. A setback may be specified as mandatory; in which case it will define a built to line that all buildings must adhere to. A setback may be specified as a minimum setback and in this case, the building line may adhere to it or be setback a distance larger than the specified minimum.

"Structure" denotes any constructed, erected material or combination of materials which requires being located on the ground or attached to something located on the ground.

"Temporary Building or Facilities" means a building used as a site office or to house construction equipment for the purpose of construction only.

"Typical Floor" is a floor that is similar to the floor that follows it or precedes it or both in area and structure.

"Ventilation Opening" includes any means of ventilation whether permanently open or closable and which opens directly on to the external air, such as parts of a window which can be opened, louvers, ventilators, and any door opening directly to the external air. Any openings associated with mechanical systems are excluded.

"Welfare" or "Welfare Facilities" shall mean ablution, washing and toilet provision standards for personnel working in buildings.

1. INTRODUCTION

1.1 Context

Residential City has been conceived as residential fold back of the vast employment numbers produced by Al Maktoum International Airport (JXB) and the surrounding aviation industry-related operations expected to flourish. Its main function is to provide livable communities for middle-income segment of the employees and their families; on the south limit, a staff village will provide accommodation to the workers that are involved in construction of DWC.

1.2 DWC and Site Context

The Dubai World Central (DWC) is located on the southern part of Dubai, near Jabel Ali free port zone.

The Residential City covers an approximate total site area of 760 ha (including the Staff Village.). The city is located to the north east of Dubai World Central; it is bounded by Al Maktoum International Airport from the South by the Jebel Ali-Lehbab road from the North and outer bypass from the East.

Figure 1: DWC Site Location

1.3 Development Context

The site lies within the new Dubai World Central development. As one of the largest new development zones in Dubai, Dubai World Central shall be anchored around the new Al Maktoum International Airport and shall comprise, in addition to Residential City, a number of significant new city-scale projects:

Figure 2: Residential City Location within DWC

1.3.1 Al Maktoum International Airport

- It shall be 10 times the size of the current Dubai International Airport and Dubai Cargo Village combined
- Passenger capacity close to 120 million passengers a year (Atlanta, currently the world's busiest airport, had 83.5 million passengers in 2004)
- Six parallel runways all of 4.5 km in length
- 92 meters control tower, the highest in the Middle East

- 3 dedicated terminals - the Emirates Group, other regional and international carriers and low cost charter airlines
- Dedicated facilities shall be earmarked for executive jet operators.
- Hotels and shopping malls, support facilities and state-of-the-art maintenance facilities, which will be developed as regional maintenance hub capable to handle all aircraft types, including the A380
- Linked to the existing Dubai International Airport via an express rail system and shall ultimately be serviced by the Dubai Metro
- Work is already underway on the first all weather runway (CAT III), which allows for automatic landing
- Some 100,000 car parking spaces shall be available for airport parking and car rental services.

1.3.2 Dubai Logistics City

- 20 million square meter site
- Designed to ultimately handle 12 million tones of air cargo annually
- A dedicated aviation area for specialized aviation industry suppliers and also offering direct apron access shall be provided
- It shall include a staff village, for 50,000 workers
- Sites shall be created for state-of the-art office buildings, dedicated industrial business, trading companies, distributors, logistics service providers and forwarders, and shared facilities, such as warehouses and modern air-side cargo handling facilities.

1.3.3 Aviation City

- The Aviation City (405 ha excluding the airside)
- It is divided into land side zone and airside zone
- Major Land-uses include Light Industrial Units, Warehousing (bonded zone), Academic and Training, Office Park and Commercial and Mixed Use (non-bonded zone)
- The city support primarily airport operations and its sub-activities

1.3.4 Golf City

-The Golf city is spread over 148 ha.
-It is expected to accommodate a population of 140,000
- Two 18-hole golf courses (possibly three) shall be designed
- The golf experience shall include extensive practice facilities, driving ranges and putting greens as well as a luxury clubhouse with restaurants and a pro-shop.
- 2,500 freehold homes, ranging from 2 storey villas to multi-storey apartment blocks will overlook the golf courses
- High-end boutique hotels complete with a spa resorts

1.3.5 Commercial City

- Spreads over a 1400 ha site
- Designed as Dubai World Central's business and finance hub
- Will feature more than 850 towers, reaching 46 storeys in height
- Expected to employ around 225,000 people and housing a population of 450,000
- It shall include a cluster of luxury villas
- 25 hotels, ranging from 3 to 5 star deluxe
- Land plots shall be sold to leading developers, who shall build in accordance with the approved Dubai World Central master plan and design requirements

1.3.6 Exhibition City

- To be developed over an approximately 405 ha site
- Designed around a world class exhibition precinct (200,000m2) with expected transient visitors 12,000 at peak events
- The city will have a large land area dedicated to Residential and Mixed Use development
- There are 3 major precincts around the exhibition area: the Office Park/Light Industry precinct, the commercial precinct and the Hotels/Serviced Apartments Precinct

1.3.7 EAST/ WEST Entrances

- Al Maktoum International airport has two main entrances at the East and the West
- Both sites are currently under design to provide state of the art development at the access points of an international hub
- Major Land Uses are offices, commercial and hotels creating the façade of the entrances while the back blocks might be dedicated to other facilities
- Major landscaping and art work will be dedicated to house the wide entrances and roads leading to the airport terminals

1.3.8 Humanitarian City

- Master Planned to be the first true humanitarian hub
- The city is spread on two sites; total site area is 141ha (97ha + 44ha)
- The first is strategically located at within the DLC and close to airport and seaport operations and the second within the Golf City
- The first site is designed as operational platform for humanitarian non-profit organizations (60% of site) as well as commercial (35% of site)
- The second site is a mix of residential and commercial developments, which is expected to generate revenue that will partially support humanitarian activities

1.4 Residential City

It is located to the north east of Dubai World Central; bounded by DWC airport from the South, by the Jebel Ali-Lehbab road from the North and outer bypass from the East. A seventy meter wide main road crossing from East to West with central part of the road is reserved for an elevated light rail train (LRT). This main road with light rail train will be developed as main residential avenue.

Residential City consists of roughly 760 hectares of land with good quality accommodation for middle-income households, in addition to providing adequate staff accommodation, working for the urban aviation community.

In addition, Residential City offers a site at the southeast corner of approximately 60 hectares (including female staff accommodation) allocated for a “Staff Village”. The village is intended to provide accommodation to around 40,000 of DWC staff (including female staff accommodation).

Figure 3: Residential City

1.4.1 Site Constraints

Due to its close proximity to the airport, Residential city Master Plan and land-use distribution took into consideration both physical and non-physical constraints:

- Airport Height and Obstacle Constraints
- Airport Noise Contours
- Airport Flight Path and Safety Zones
- Layout Structure and Utility Reservations
- Residential City Access Points

These constraints are considered to have an impact in the flexibility of the adopted planning approach.

1.4.2 Design Approach and Principals

The six basic principles used in DWC – Residential City master planning are:

- Acknowledge contextual constraints and address site limitations
- Provision of centralized amenities.
- Provision of adequate green spaces for leisure and recreational purposes
- Create neighborhood clustering to achieve equal and balanced distribution of services
- Maximize Land utilization with respect to BUA within allowable height limits.
- Organize self-contained neighborhood communities connected with a viable and efficient road network

The development of Residential City is closely related to the general concept of self-contained development in DWC, and is geared to service the new airport and main facilities in terms of providing suitable and appropriate housing for employees and their families. The development vision depends on three main pillars: the first is the convenience of living close to their workplace and decreasing daily generated trips; the second is the availability of end-users that ensures housing demand; and the third is affordability and compatibility of such development to specific income groups as the residences were designed according to the needs of each group.

The approach to design a predominantly residential character city revolves around injecting a variety of characters for the development to utilize and maximize their exposure to green open spaces. The green “pockets” are envisaged as the key element to act as meeting grounds and outdoor activities for the residents.

The Residential City BUA was maximized along the mixed use spine, allowing G+9 heights to clearly define the Residential Avenue. At the same time, the design approach adopted a concentric BUA model that gradually decreases floor height from G+7 to G+3 in an attempt to emphasis the common public space nodes and give an exclusive and distinctive urban environment to every neighborhood cluster.

In the Planning and design of Residential City Staff Village similar planning approach has been adopted, however, understanding the contextual aspect of the city and its components in reference to other residential categories directed the design orientation and assisted in placing the different land use layers. The strong visual and pedestrian green corridors are envisaged as the core element in this proposal as they will facilitate easy accessibility from all residential categories to and from the central plaza. As discussed before the central core “Central Plaza” is the primary design element in the city, and space around will became the meeting grounds and outdoor activities for all the residents.

1.4.3 Design and Planning Objectives

Residential City Master Plan was subject to various design constraints which needed a realistic planning and design vision in order to create and deliver a logical and functional master plan.

The objective is not tied or limited to one planning aspect i.e. creating an exclusive residential city that cater to one or two accommodation categories rather the vision is extended to cover all support facilities such as Education, Offices, Mixed Use, leisure and Entertainment, in other words, to be an exclusive urban aviation community serviced by high range of facilities.

The adopted design and planning objectives were addressed to:

- Create a multi-functional city structure with an organized land-use program that offers various living accommodation and income categories
- Provide high-end facilities and services
- Create an ideal living environment
- Create an efficient low-cost transit system that link the city to DWC cities.
- Create a comprehensive and integrated road network and offers various modes of transport to ensure easy accessibility between various components of the city. The planning and design regulations will help to achieve these objectives.

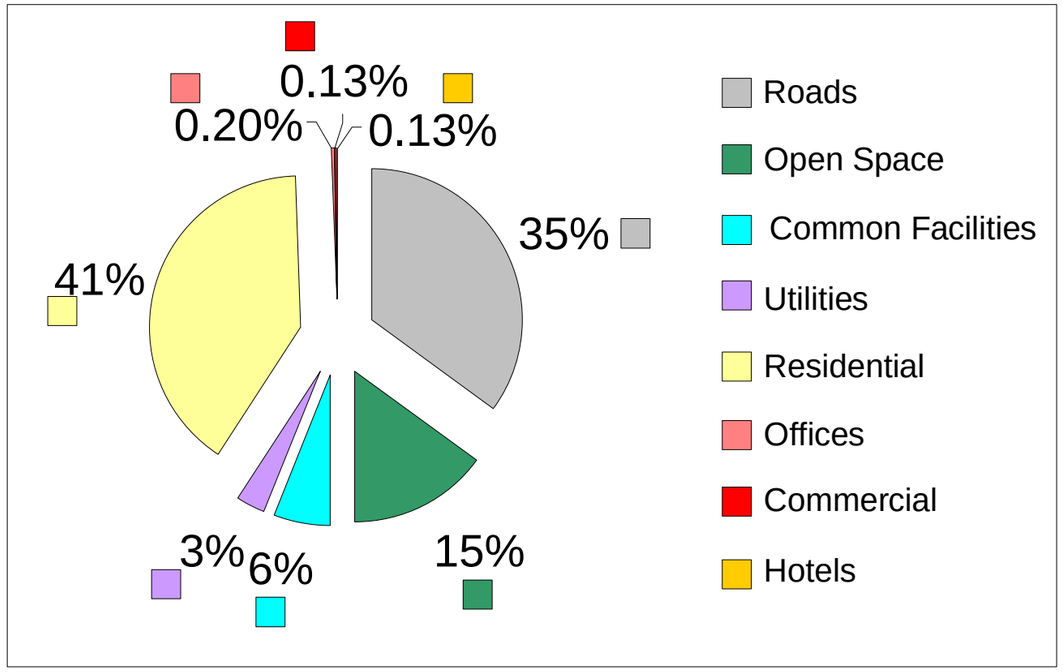
1.4.4 Master Plan Land-Uses

The main function of Residential City is to provide accommodations for middle and middle-to-low income households working for Al Maktoum International Airport and related facilities.

The Master Plan for the Residential City takes into account the need for providing adequate living standards and support facilities for the city's residents and staff. This is manifested in the open public space, public facilities and health care centers. As per the planning parameters estimates, the whole Residential City will ultimately be inhabited by around 245,000 people. Most of the population will be the employees of adjoining functions or supporting components/facilities. In the spirit of the prevailing vision to create a self contained project, Residential City will offer a resident friendly living environment with all the desired community facilities and services.

Residential City Staff Master Plan, on the other hand, envisages several residential building types housing different staff segments. The radial layout with the outer ring dedicated for Blue Collar accommodation then as we move closer to the core, high-rise accommodation becomes dominant, which is strategically positioned to be around and close to the central plaza, the commercial heart and leisure for the village.

Figure 4 Land Use Distribution Chart



This concentric layer form of land use development will provide segregation between different staff segments and at the same time creates public open spaces. The layout placed the different staff category buildings to be joined through major public open spaces, amenities, and mosques. The green spaces and visual corridors pleasingly provide a continuous character towards the core of the entire city and create favorable living conditions to all residents.

The land use budget within Residential City is mainly comprised of about 40% Residential Use, 24% for open spaces, community facilities and utilities and remaining 36% area distributed between roads, hotels, commercial and offices etc. (see figure 3)

2. DEVELOPMENT CONTROL PROCEDURES

The Development Guidelines and Planning Regulations and Standards contained in this booklet are intended for use by approved Developers seeking to construct residential and/or commercial buildings, on serviced sites in the Dubai World Central (DWC) - Residential City. They should be applied in conjunction with the local and international standards and codes of building construction.

The regulations contained in this document shall be considered to be the minimum requirements. Developers shall comply with these regulations along with all relevant legislative requirements of the Authority.

The Authority reserves the right to change any of these regulations as and when required and it shall be the duty of the consultants, contractors and developers to ensure that they possess the latest updates.

These regulations include:

a. Procedures for development covering building permits, construction procedures, alterations to rebuilt units, building completion certificates, power of the Authority and responsibilities and disputes.
b. General planning Regulations governing plot coverage, building set backs and heights, provision of parking, fencing and site landscaping and the external appearance of buildings.
c. Performance standards governing:
   - The provision of utility services including Chilled Water Services, Storm water drainage and refuse disposal.
   - The design of buildings including structure, materials and finishes, mechanical, electrical, and telephone installations.

2.1 General

2.1.1 A Developer wishing to erect a building on a serviced plot in the Residential City must apply to the Authority, stating his intended development program and his land requirements. All development within Residential city must comply with the development guidelines and planning regulations stated in this booklet, in addition to the current building regulations and specifications issued by Dubai Municipality.

2.1.2 The Developer must appoint a qualified Architectural / Engineering Consultant, registered in Dubai, and approved by the Authority, to carry out the design tasks connected to his project, and to act on his behalf regarding all technical matters related to the design, construction and completion of his project.

2.1.3 The development shall adopt and house “Green Building design Techniques” that are scaled by acquiring a minimum level of “LEED certified” following the US Green Building council LEED rating system or equivalent certified level from nationally recognized rating system. The developer shall comply with all the Design and Construction requirements of the Rating System and shall submit proof of certification towards the end of construction.

2.1.4 The Contractor must apply, prior to commencing any construction works for the following:

a. A building permit from the Authority.
b. No objection certificates (N.O.C) from the Authority and/or from the Service Authorities in charge.
c. Demarcation and Demarcation Certificate.

2.1.5 The Developer must appoint an approved Contractor to carry out construction works related to his project. The appointed Contractor must observe the procedures for construction set out in this booklet and any other locally applicable Regulations.

2.1.6 No buildings or facilities may be occupied after construction prior to obtaining a Building Completion Certificate from the Authority.

2.1.7 No facilities may be operated unless an Operation Fitness Certificate is issued by the Authority.

2.1.8 All Developers should approach the Authority with the initial design documentation, in order to obtain the approval on the building volume, built up area, external character and skin finishing material specification.

2.2 Procedures and Requirements for a Building Permit

2.2.1 A building permit shall be issued subject to:

a. Obtaining the no objection certificate from the Service Authorities for water, electricity, fire and telephone.
b. Fulfilling the submission requirements of the Dubai Civil Aviation Authority.
c. Building Permit Fees and any other fees as stipulated in the Planning Permission Charges Document issued along with Affection Plan.

2.2.2 The building permit shall remain valid for the period of a year and renewable annually if acceptable reasons are provided. However, construction on site must start within 3 months after obtaining the building permit.

2.2.3 Any amendments to approved drawings or deviations from the conditions stipulated in the building permit shall not be allowed unless explicit and written consent of the Authority is granted. In case of violation, the Authority reserves its right to demolish any illegal addition to the buildings or part thereof. The cost of demolition shall be borne by the developer.

2.2.4 Documents to be submitted to the Authority for obtaining a building permit must include:

a. Letter of appointment of the Consultant and a copy of the consultancy agreement.
b. Letter of appointment of the contractor from the Consultants.
c. Copy of the Contractor's Trade License and DWC or Dubai Chamber of Commerce Registration.
d. Affection Plan showing the coordinates of the plot.
e. No objection certificates from the Service Authorities.
f. A written statement outlining the project profile, the intended uses and a list of the drawings including:

- Colored perspective
- Architectural drawings & schedule of finishes 2 sets
- Structural drawings 2 sets
- Plumbing, irrigation and drainage layout drawings 2 sets
- Electrical layout drawings and Load details (present & Future) 2 sets
- Mechanical drawings 2 sets
- Fire protection and fire alarm layout drawings 2 sets
- Fire Zoning Plan 2 sets
- Plant layout drawings
- Safety Plan and Emergency Response Plan 2 sets
- Egress Plan 2 sets
- District Cooling requirements
- Technical Specifications 2 sets
- HSE Plan 2 sets
- Water & Sewage management Plan 2 sets
- Waste Management Plan 2 sets

All of the afore-mentioned drawings should be submitted at the scale of 1:100 along with one soft copy for each.

2.3 Construction Procedures

2.3.1 The Developer shall appoint a Contractor for the execution of his project. The Consultant shall supervise all construction works and shall liaise with the Authority regarding any problems encountered during execution. No direct communication concerning the management of the construction process shall be established between the Authority and the Contractor.

2.3.2 The Contractor shall demarcate the site in accordance with the setting out plan. This work shall be checked by the Consultant and approved by the Authority prior to any encasing or fencing works.

2.3.3 The Contractor shall obtain approval from the Authority after submitting his mobilization plan showing layouts and details of his temporary offices, fencing, sign boards, storage facility, etc.

2.3.4 The Contractor shall execute the project in accordance with the approved working drawings and specifications. The Contractor shall be allowed to erect temporary offices or porta-cabins during the construction stage provided; he will provide a written undertaking to remove them at the completion of construction.

2.3.5 The Contractor shall apply to the Authority and/or relevant service Authority and pay all charges associated with temporary electrical, water, drainage including dewatering, safety procedures, fencing, storage and telephone installations and connections during the construction period. All temporary installations and connections must comply with the Authority and/or relevant Service Authorities standards and must be terminated following the completion of construction with suitable local isolation switches.

2.3.6 Prior to initiating any construction work, the Contractor shall pay the Authority a refundable deposit or unconditional bank guarantee. The amount of this deposit or bank guarantee shall be fixed by the Authority in local currency based on the plot area. The deposit shall be refunded upon completion of the works and upon the satisfaction of the Authority that the Contractor has completed the clearance of all debris from the site.

2.3.7 The Contractor shall collect the HSE Guideline and the Construction Environmental Management Guidelines (CEMG) from the Authority. The Contractor is responsible to comply with the requirements of these guidelines.

2.3.8 The Contractor must present the following documents to the Authority in order to commence construction:

a. Letter of appointment signed by the Developer and his Consultant.
b. A notice of intent to carry out the works.
c. An invoice for the payment of the refundable deposit.
d. Three sets of revised shop drawings which incorporate any previous amendments or comments by the Authority on previous submissions.

2.4 Completion Procedures

2.4.1 A Building Completion Certificate must be applied for by the Consultant upon completion of building works with external finishes and basic electrical, mechanical and fire installations.

2.4.2 The Authority shall authorize the following services and utilities to be connected to the building only after the issue of the Building Completion Certificate from the relevant Services Authority:

a. Water supply
b. Power supply
c. Chilled water
d. Fire protection
e. Sewerage discharge
f. Irrigation
h. Telephone
i. Data lines (fiber optics)
j Gas

2.4.3 The Building Completion Certificate shall be issued following a satisfactory inspection visit by the Authority and/or relevant Service Authority. If the inspection of the buildings reveals that further work has to be carried out, the Building Completion Certificate shall be delayed until those works are completed.

2.4.4 The application for a Building Completion Certificate must be accompanied by the following documents:

a. Letter from the Consultant stating the completion of the building in accordance with the approved drawings.
b. Two sets of the following as built drawings accompanied by an electronic copy of the same:

i- Site layout showing the location of service installations.
ii- Floor plans, elevations and sections.
iii- Electrical layouts.
iv- Mechanical Layouts
v- Fire protection layouts.

c. Fire and perils insurance for the building.
d. Inspection certificate for mechanical and lifting equipment from an approved third party.

2.4.5 For Electric and Water Supplies, the Contractor shall be required to submit to the relevant Service Authority "Inspection Certificates" in accordance with the prescribed forms. All installations and equipment installed therein shall be subject to the Service Authority inspection, testing and final approval before connecting the power supply. All relevant documents shall be submitted to the Authority after the final approval by the Service Authority.

2.5 Building Operations

2.5.1 All building operations must be confined within the boundary fence or wall of the plot. Construction sites are required to be enclosed with temporary hoarding during the period of construction to avoid any hazard to public thoroughfares or adjacent buildings.

2.5.2 The Developer must obtain the approval of the Authority for the siting of temporary buildings and sheds required during construction and must ensure that adequate provisions for safety and the prevention of health hazards related to sanitation, dusting and drainage disposal are taken.

2.5.3 All necessary safety precautions shall be taken to protect existing buildings and fences from damage due to excavations, earthworks or any other building operation. The Developer and his agent are entirely responsible in case of damage.

2.5.4 The Authority shall have free and uninterrupted access to the construction site at any time.

2.5.5 The Developer or his agent must give the Authority no less than seven days notice following the completion of the building for inspection and prior to obtaining a building completion certificate.

2.5.6 All construction works must be adequately supervised, and a signed copy of the approved drawings and building permit must be kept on site during construction.

2.5.7 Any deviation from the approved drawings, or commencement of a construction operation without approval shall be fined. The payment of this fine shall not absolve the Developer from correcting the deviation.

2.5.8 Labor accommodation shall not be permitted within the site premises.

2.6 Alterations and Additions to Buildings

2.6.1 Any alterations or additions to existing building units shall be subject to the issue of a no objection certificate (N.O.C.) by the Authority. To obtain an N.O.C for alteration works, the Developer must present the same set of drawings required for a building permit, covering the areas of proposed alterations.

2.6.2 Prior to occupation, the Developer must obtain a Building Completion Certificate to the satisfaction of the Authority.

2.6.3 Any extensions or alterations to the electrical installations shall require the approval of the relevant Service Authority.

2.6.4 Any extension/alteration to the sewage installation shall require service authority approvals

2.7 Powers of the Authorities

2.7.1 It is the discretion of the Authority to cancel the Building Permit if:

a. Work was carried out in contravention of the conditions of the Building Permit or any regulations issued by the Authority.

b. If the Authority subsequently revealed that the Building Permit was issued on the basis of erroneous information supplied by the developer or his agent.

2.7.2 Building Permit shall not be withheld unreasonably, but the Authority shall have the discretionary power, while issuing a Building Permit to attach such special conditions thereto as related to all or any of the following matters:

a. Filling or Excavation within the plot.
b. Construction of boundary walls or fences.
c. Construction of the external appearance of the building, in relation to fitness to its intended purpose and location.
d. Disposal of soil, waste and rain water.
e. Health and safety of personnel and environmental conditions of the workplace and surroundings.
f. The engineering standards to which any process installation is constructed.

2.7.3 The Authority is empowered to change, amend, replace and/or update the regulations without prior notice. It is the developer's responsibility to obtain updated regulations and ensure compliance.

2.7.4 It is the responsibility of the developer to apply in accordance with the up-to-date regulations, the Authority notices, etc. that may supersede ones mentioned in these regulations.

2.7.5 The Authority reserves the right to reject the appointment of consultants or contractors for particular jobs if they are not deemed competent enough to fulfill the related responsibilities

2.7.6 The Authority reserves the right to suspend a consultant or a contractor for non compliance with the regulations.

2.8 Responsibilities and Disputes

2.8.1 Neither the checking of the drawings, nor the checking of the structural calculations, nor inspection of the work during the progress of construction, shall be construed in any way to impose responsibility and/or liability on the Authority or their agents. The developer and his agents shall remain responsible for all errors in the design and execution of the project and for the stability of construction during the progress of the works and after completion.

2.8.2 All complaints and disputes concerning Building Permits and the erection of buildings shall be referred to the Authority. Any financial disputes shall be referred to Dubai courts.

2.8.3 Authority shall carryout HSE inspections periodically during and post construction. However developer and his agents shall be responsible for any accidents and/or damages arising out of any lapses to their own property and/or adjoining property for any consequential physical and / or financial damages and liabilities.

3. GENERAL PLANNING REGULATIONS

Residential City is mainly dedicated for multi density residential apartment buildings with heights varying from 5 to 10 floors. Other buildings include residential, commercial and office buildings on the spine road up to ten floors high, as well as community facility and utility buildings.

3.1 General Provisions

The Regulations described in this document apply to developments within the DWC- Residential City. These shall be applied along with the current Building Regulations and Specifications issued by Dubai Municipality.

3.1.1 Within Residential City, all land plots will be determined as shown on the Land subdivision plan and plot coordinates (Appendix).

3.1.2 All plots located within Residential City are reserved for construction of buildings subject to the use restrictions set out by these regulations. These plots can not be subject to any further subdivision. However, two or more plots may be combined subject to approval by the Authority.

3.1.3 Each individual building must be connected to the internal utility networks provided by the Authority.

3.1.4 Mechanical equipment, water tanks and other technical installations located on the flat roof of a building must be screened. All Screens (such as perforated walls, panels, etc…) shall conform to building codes approved by the Authority.

3.1.5 All buildings shall be of good quality construction. Architectural materials shall conform to any specific requirement set out by the Authority and shall comply with the following standard specifications or any equivalent standards approved by the Authority.

ASTM	American Society for Testing and Materials
NFPA	National Fire Protection Association
ANSI	American National Standards Institute
BS	British Standard
UBC	Uniform Building Code
UL	Underwriters' Laboratories Inc.
FM	Factory Mutual
ASHRAE	American Society of Heating Refrigeration and Air conditioning Engineers

3.1.6 The Dubai World Central Residential City is divided in terms of Land use in to five main zones. (Figure 7)

- Zone "H" (Residential Use)
- Zone "M" (Mixed Use)
- Zone "C" (Commercial Use)
- Zone "O" (Office Use)
- Zone "S" (Amenities and Utilities)

i- Residential Apartments Zone (H). This zone is further sub-divided into five sub-zones each with different building regulations:

- Sub-Zone "Ha"
- Sub-Zone "Hb"
- Sub-Zone "Hc"
- Sub-Zone "Hd"
- Sub-Zone "He"

ii- Mixed Residential Commercial Zone (M). This zone is further sub-divided into two sub-zones each with different building regulations:

- Sub-Zone "Ma"
- Sub-Zone "Mb"

iii- Offices Zone (O).

iv- Commercial Zone (C).

v- Community facilities and utility services Zone (S) including all the community facilities and utility buildings / structures serving the residential area.

3.1.6 All the installations and Buildings to follow Green Building Norms all through design to operation as stipulated by Government of Dubai.

3.1.7 GSM towers as a communication facility have been planned for Residential City. Many of such towers are planned on the roof top of the designated buildings in the Master Plan in view to create an efficient design for the GSM network. Owners of such building/buildings shall allow the service provider to erect such towers on the roof top of their building as and when approached for without and additional cost or whatsoever.

3.2 Zone "H" – Residential Apartments Zone

a. General

This zone; as shown in Figure 6, occupies most of the DWC- Residential City area. It is divided into five sub-zones, Ha, Hb, Hc, Hd, He. In sub-zone He, located along the main spine road, commercial uses are permitted (retail) at ground floor level. In all other sub-zones Ha, Hb, Hc, and Hd, uses are restricted to residential only.

b. Landscaping

All areas within the plot boundaries not covered by building must be adequately landscaped with appropriate planting/hard landscaping to provide visual interest, shade and circulation within the plot. This requirement applies to areas assigned for open air car parking which must be properly paved and shaded. Date Palm and Ghaf trees to be the significant part of Landscaping design preferably.

c. Basement parking

When a basement parking level is required, it is highly recommended to raise the ground floor of the residential building up to a maximum of 1.20 meter above the mean ground level in order to ensure natural ventilation for the basement floor and to ensure privacy to the ground floor flats.

d. Roof Parapet

The height of the roof parapet in zone H, measured from the finished roof level to the top of the roof parapet can vary between 0.90 meters (min.) and 1.10 meters (max).

e. Requirements for on plot parking

On plot parking requirements must observe the minimum standards stated in Dubai Municipality building regulations and standards applicable to uses permitted in this zone which are:

- A minimum of one car parking space required for each apartment with a total area of 145 m^2 (1600 ft^2) or less.
- A minimum of two car parking spaces required for each apartment with a total area more than 145 m^2 (1600 ft^2).
- A minimum of one car parking space required for each studio apartment.

- One car parking place required for each 45 m^2 of Gross commercial space.

The Authority reserves its right to increase the above parking requirements as and when it deems necessary.

The plot surface of the parking areas shall be planted with trees, for shading purposes. A minimum of one tree shall be required for four car parking spaces.

No Parking shall be permitted within the front setbacks of the plot.

Figure 5: Residential City and other DWC Developments

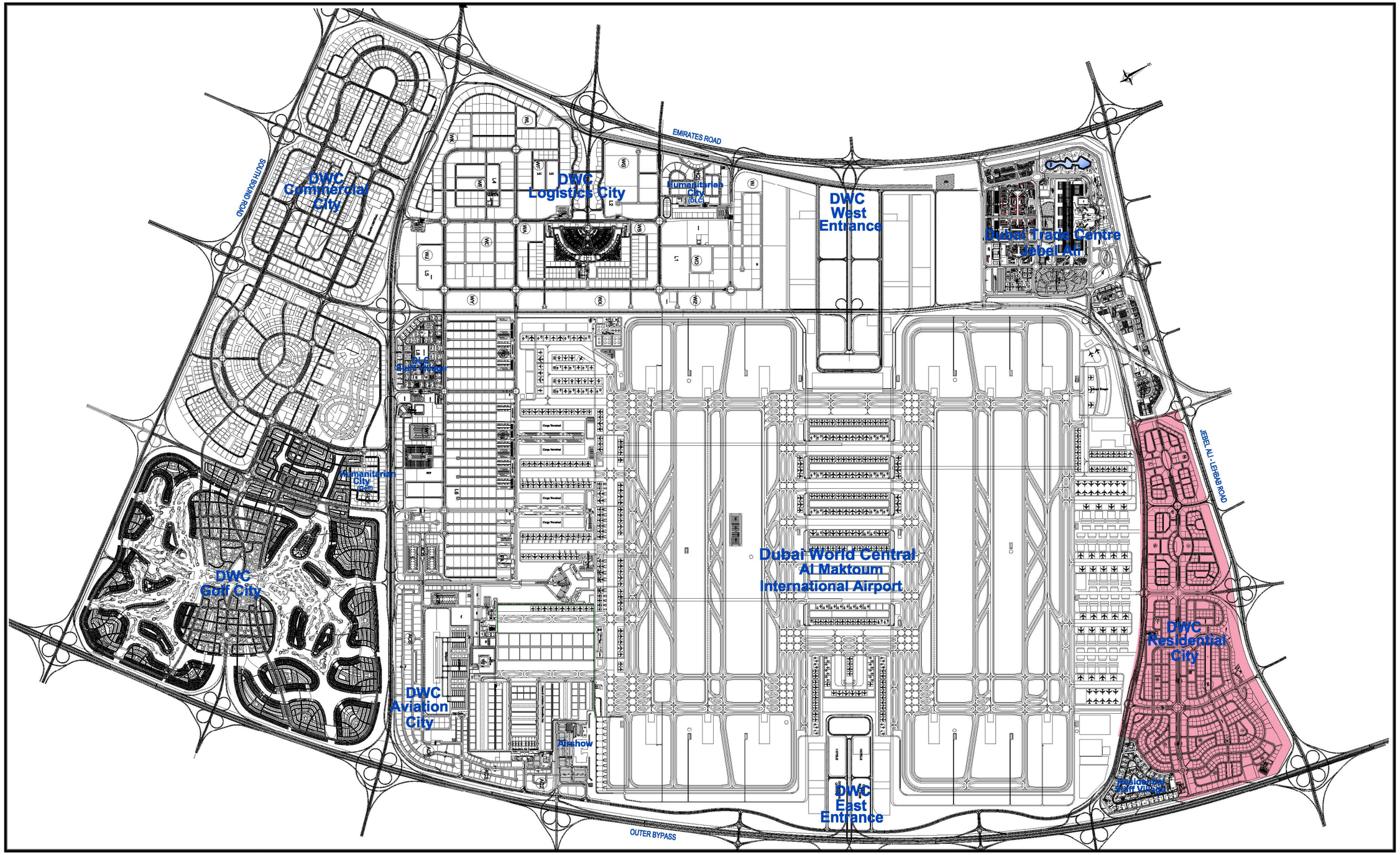


Figure 6: Residential City Land Use

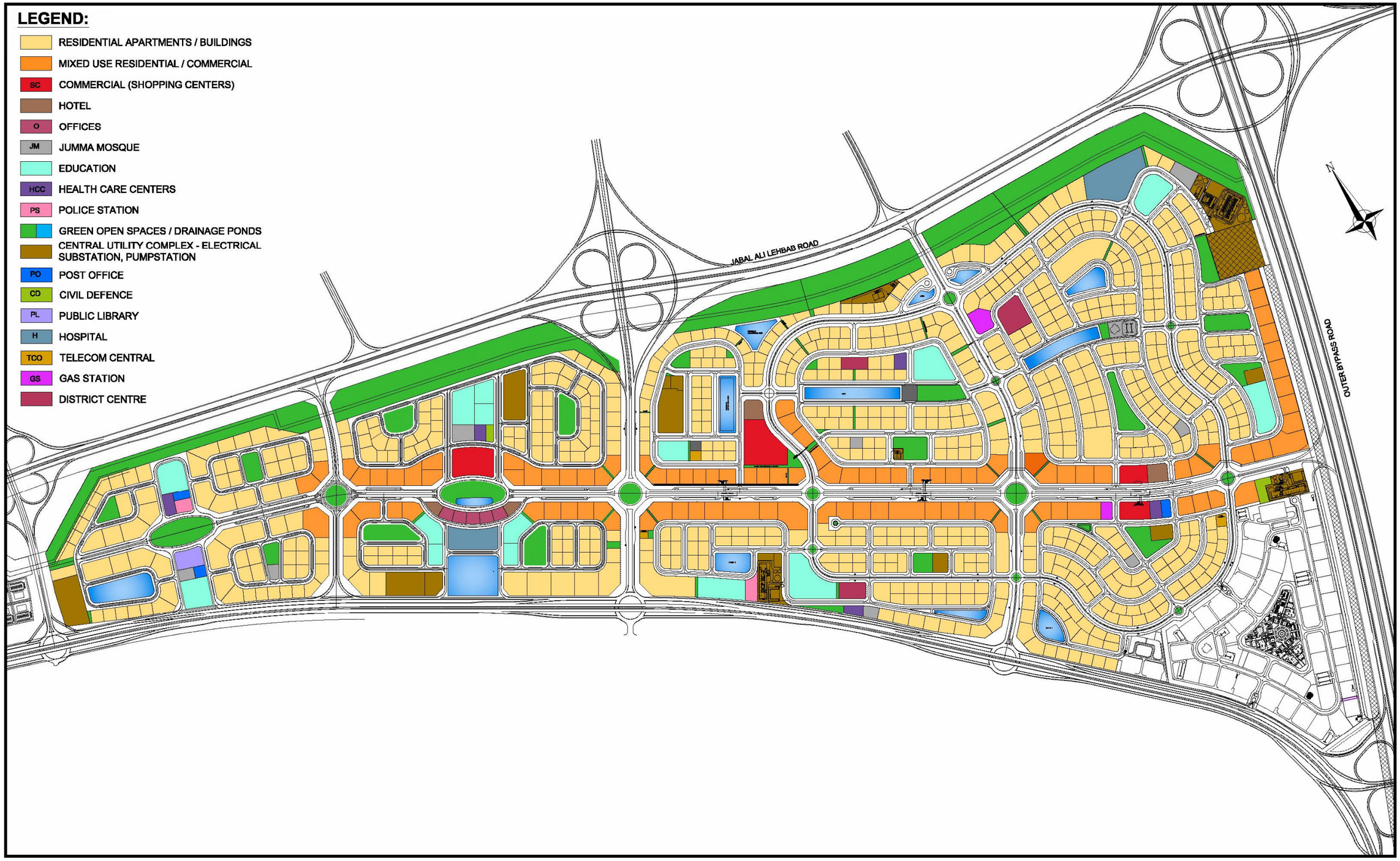
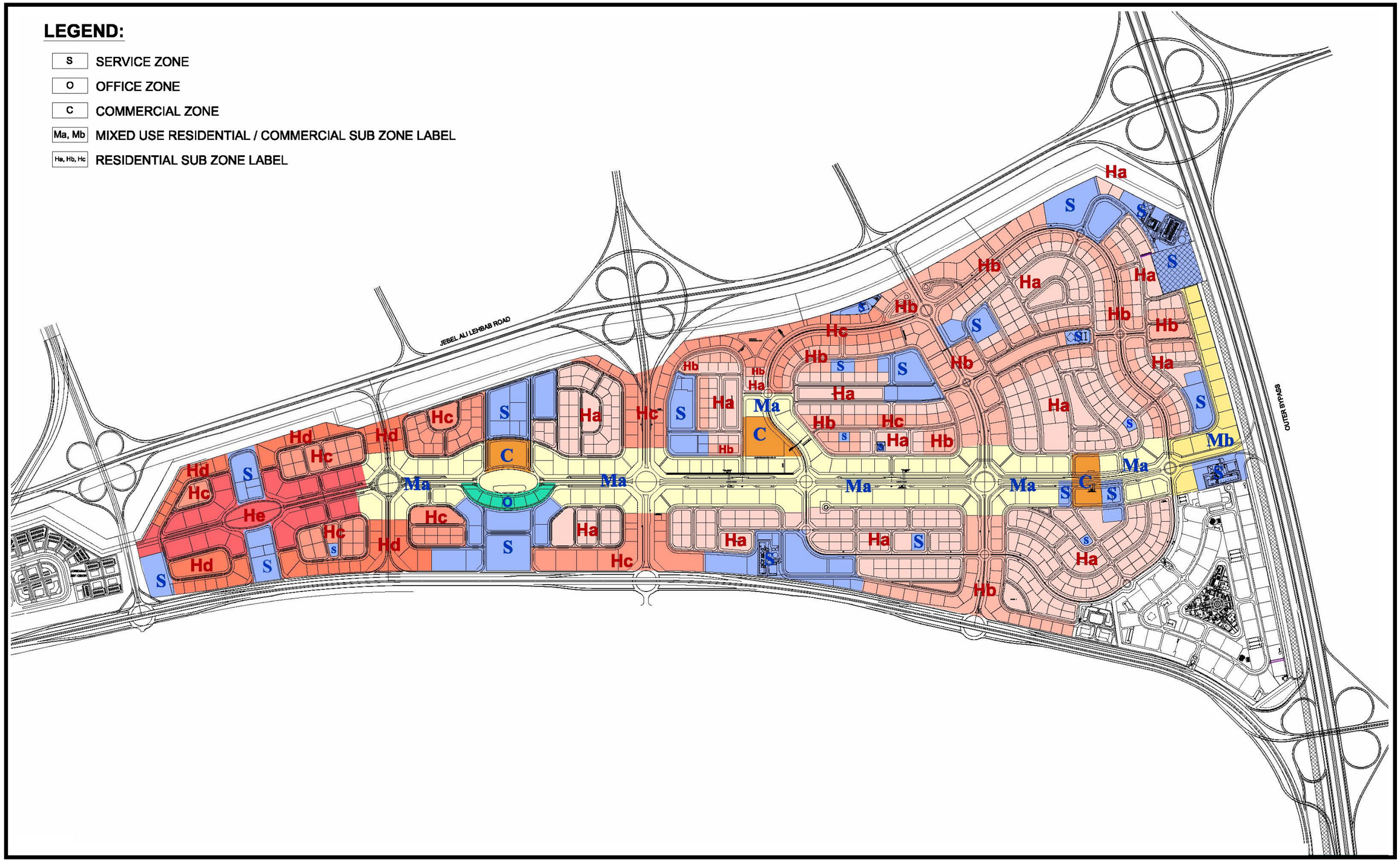


Figure 7: Residential City Zoning Plan



3.2.1 Sub-Zone "Ha"

3.2.1.1 Permitted Use: Residential apartments

3.2.1.2 Minimum Setbacks: (See Plate 1)

a) From public road: 6.00 meters

b) From adjoining plots: 4.50 meters

c) From rear boundaries: 9.00 meters

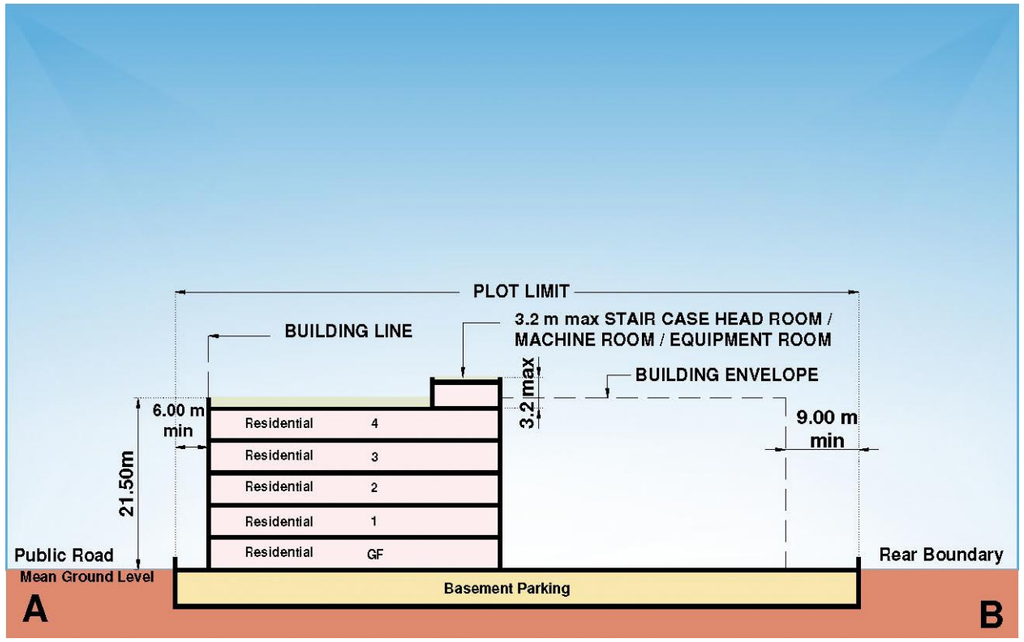
3.2.1.3 Floor Area Ratio (FAR):1.80

3.2.1.4 Maximum Number of Floors including the Ground Floor: 5

3.2.1.5 Maximum Height of the Finished Floor Level of the Ground Floor from the mean ground level of the front elevation: 1.20 meters

3.2.1.6 Maximum Building Height: 21.50 meters

Staircases and any other structures on the top floor\last floor should not exceed the height of 3.2 meters from the Finished Floor level to the top of Coping.



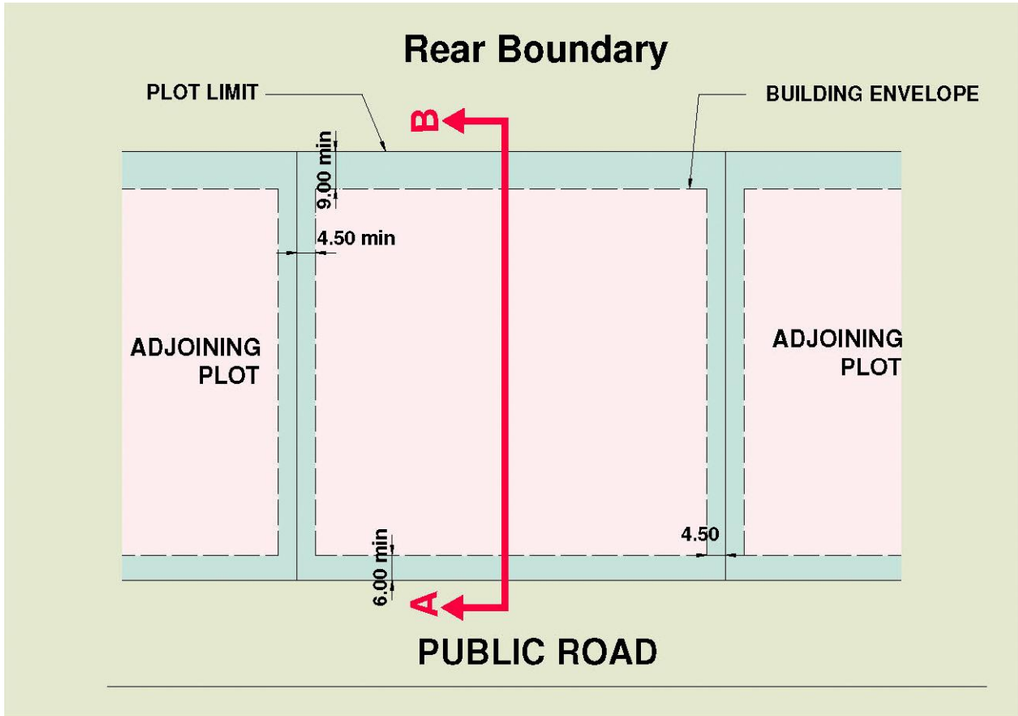


Plate 1 Sub-zone "Ha"

3.2.2 Sub-Zone "Hb"

3.2.2.1 Permitted Use: Residential Apartments

3.2.2.2 Minimum Setbacks: (See Plate 2)

a) From public roads: 6.00 meters

b) From adjoining plots: 4.50 meters

c) From rear boundaries: 9.00 meters

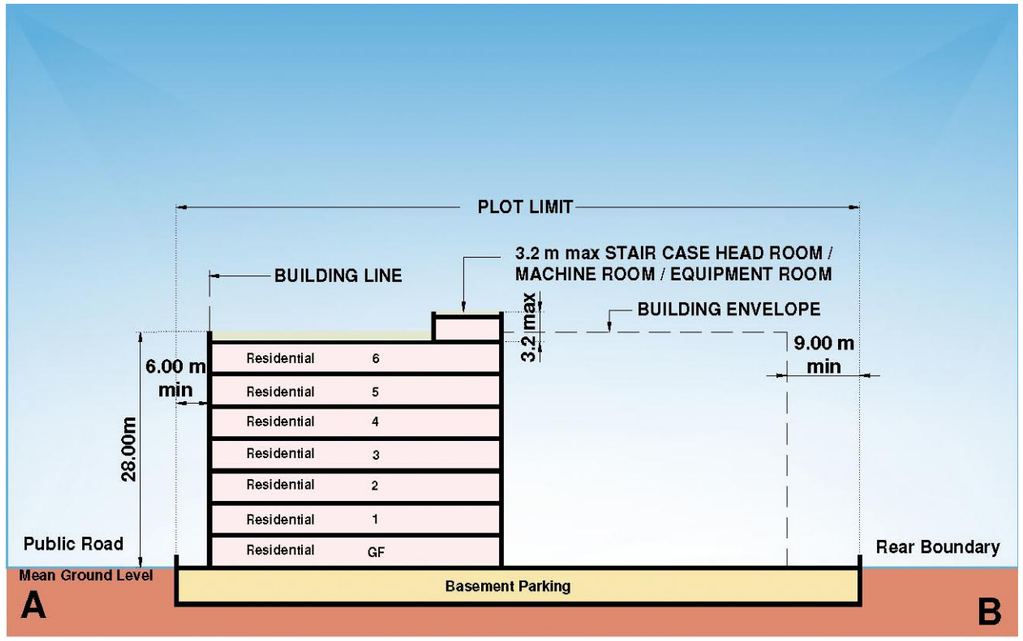
3.2.2.3 Floor Area Ratio (FAR): 2.45

3.2.2.4 Maximum Number of Floors including the Ground Floor: 7

3.2.2.5 Maximum Height of the Finished Floor Level of the Ground Floor from the mean ground level of the front elevation: 1.20 meters.

3.2.2.6 Maximum Building Height: 28.00 meters

Staircases and any other structures on the top floor\last floor should not exceed the height of 3.2 meters from the Finished Floor level to the top of Coping.



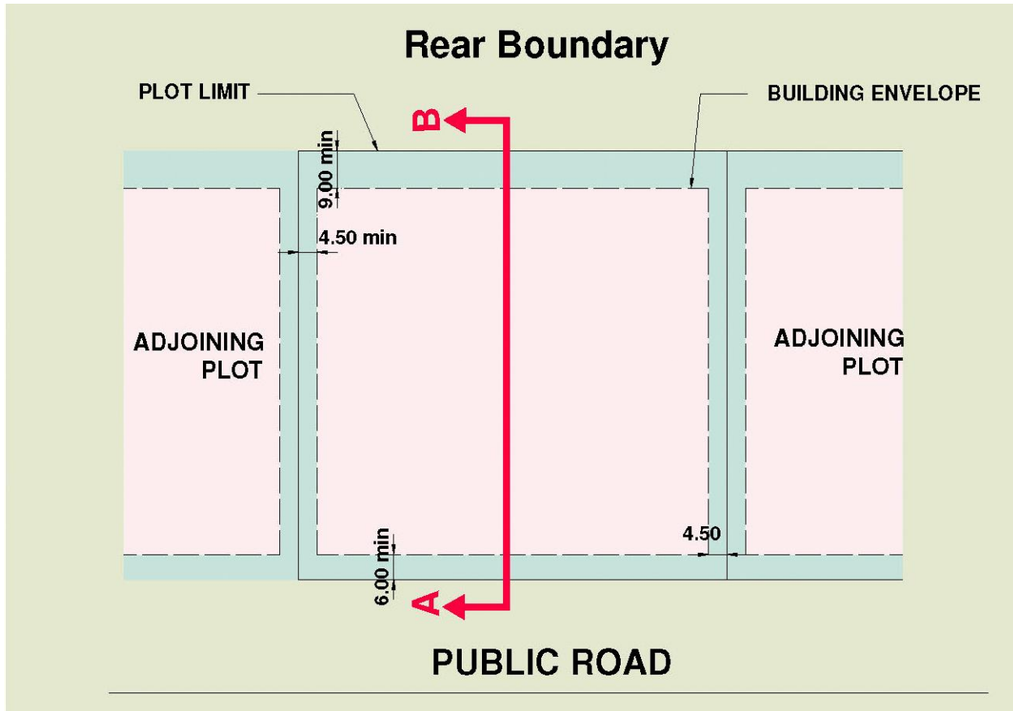


Plate 2 Sub-zone "Hb"

3.2.3 Sub-Zone "Hc"

3.2.3.1 Permitted Use: Residential Apartments

3.2.3.2 Minimum Setbacks: (See Plate 3)

a) From public roads: 6.00 meters

b) From adjoining plots: 4.50 meters

c) From rear boundaries: 9.00 meters

3.2.3.3 Floor Area Ratio (FAR): 2.80

3.2.3.4 Maximum Number of Floors including the Ground Floor: 8

3.2.3.5 Maximum Height of the Finished Floor Level of the Ground Floor from the mean ground level of the front elevation: 1.20 meters

3.2.3.6 Maximum Building Height: 31.00 meters

Staircases and any other structures on the top floor\last floor should not exceed the height of 3.2 meters from the Finished Floor level to the top of Coping.

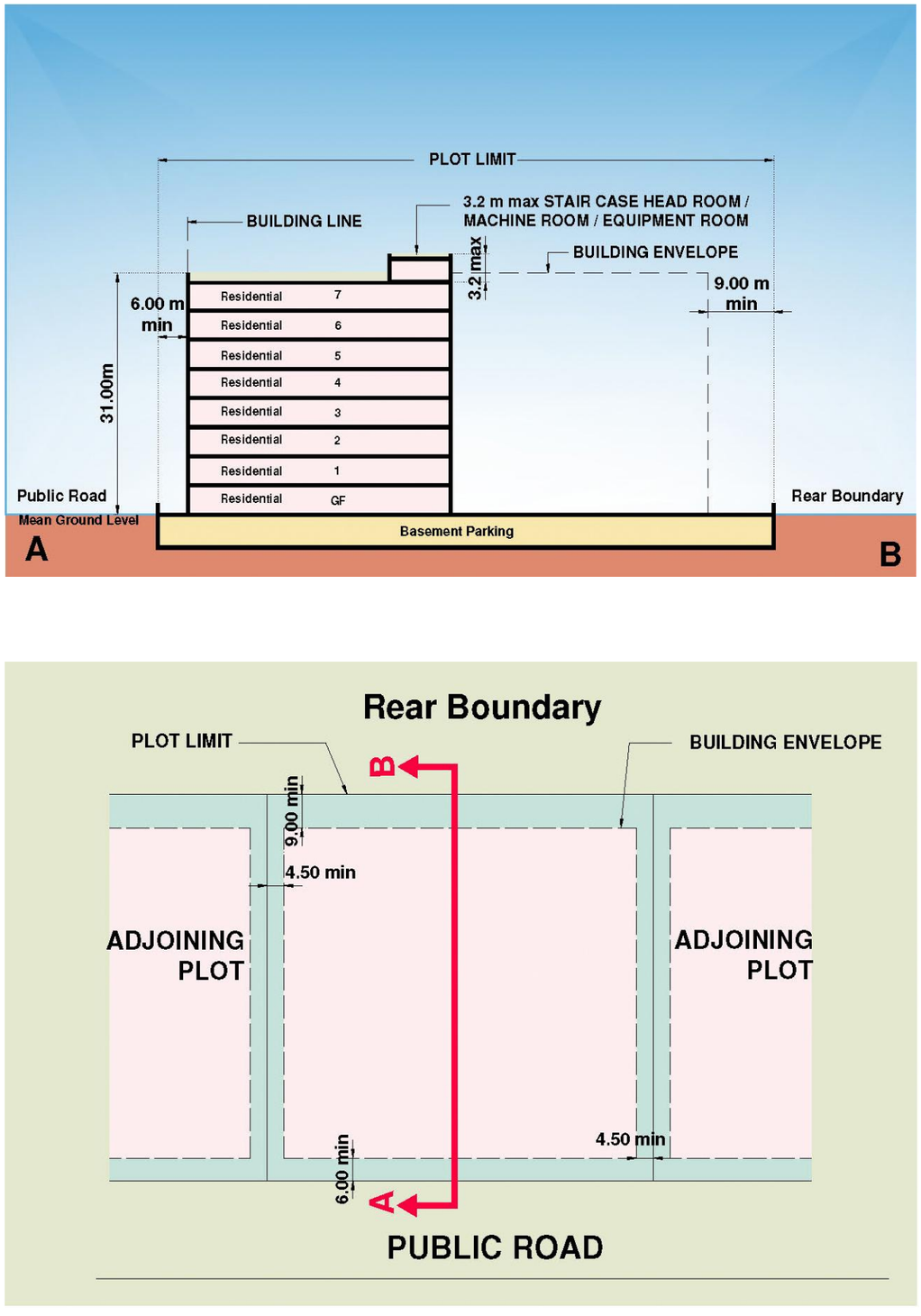


Plate 3 Sub-zone "Hc"

3.2.4 Sub-Zone "Hd"

3.2.4.1 Permitted Use: Residential Apartments

3.2.4.2 Minimum Setbacks: (See Plate 4)

a) From public roads: 6.00 meters

b) From adjoining plots: 4.50 meters

c) From rear boundaries: 9.00 meters

3.2.4.3 Floor Area Ratio (FAR): 3.15

3.2.4.4 Maximum Number of Floors including the Ground Floor: 9

3.2.4.5 Maximum Height of the Finished Floor Level of the Ground Floor from the mean ground level of the front elevation: 1.20 meters

3.2.4.6 Maximum Building Height: 35.00 meters

Staircases and any other structures on the top floor\last floor should not exceed the height of 3.2 meters from the Finished Floor level to the top of Coping.

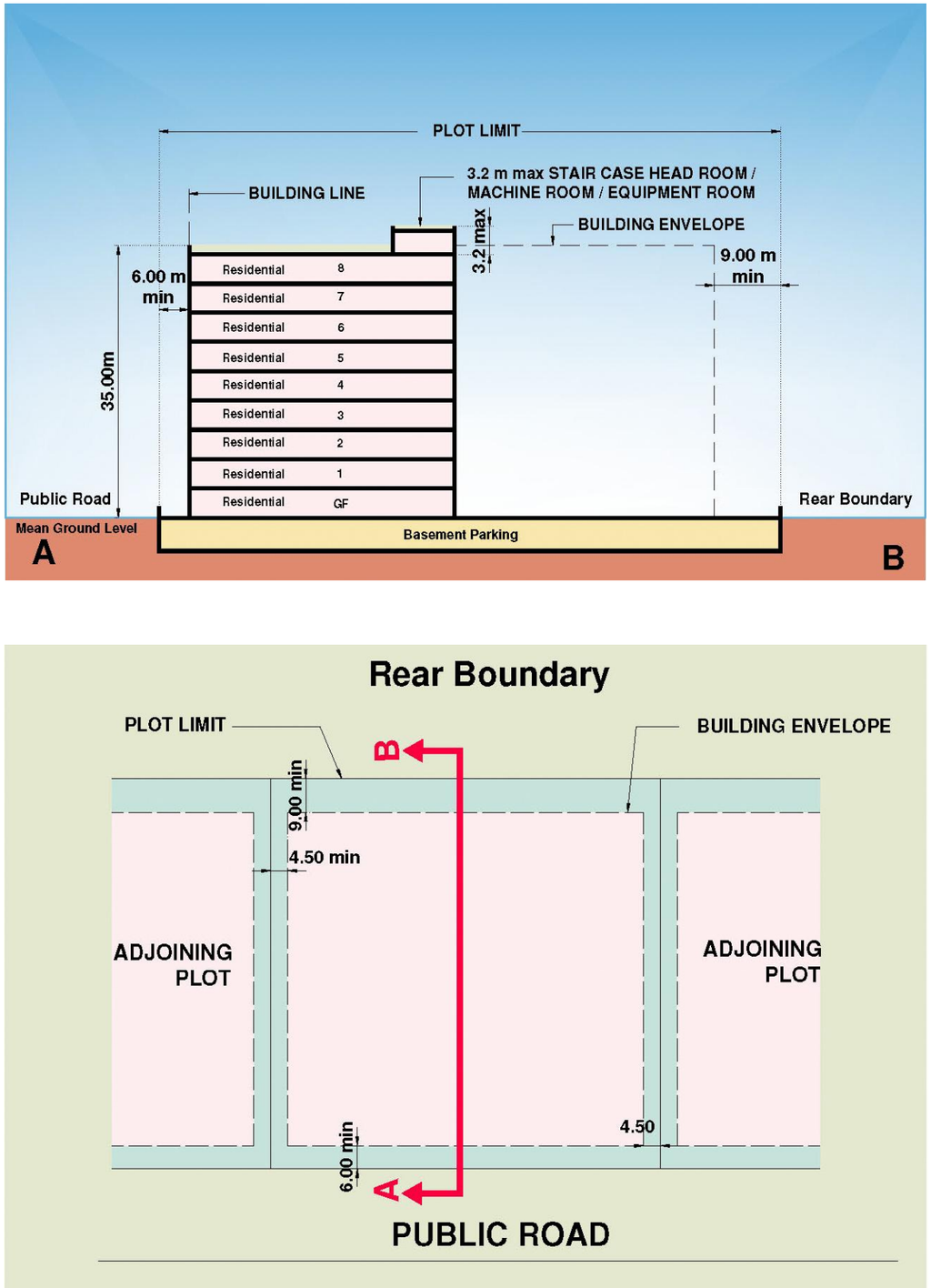


Plate 4 Sub-zone "Hd"

3.2.5 Sub-Zone "He"

3.2.5.1 Permitted Use: Residential Apartments.

3.2.5.2 Minimum Setbacks: (See Plate 5)

a) From public roads: 12.00 meters

b) From adjoining plots: 6.00 meters

c) From rear boundaries and service road: 3.00 meters

3.2.5.3 Floor Area Ratio (FAR): 3.5

3.2.5.4 Maximum Number of Floors including the Ground Floor: 10

3.2.5.5 Maximum Height of the Finish Floor Level of the Ground Floor=1.20 meter

3.2.5.6 Maximum Building Height: 39.00 meters

Staircases and any other structures on the top floor\last floor should not exceed the height of 3.2 meters from the Finished Floor level to the top of Coping.

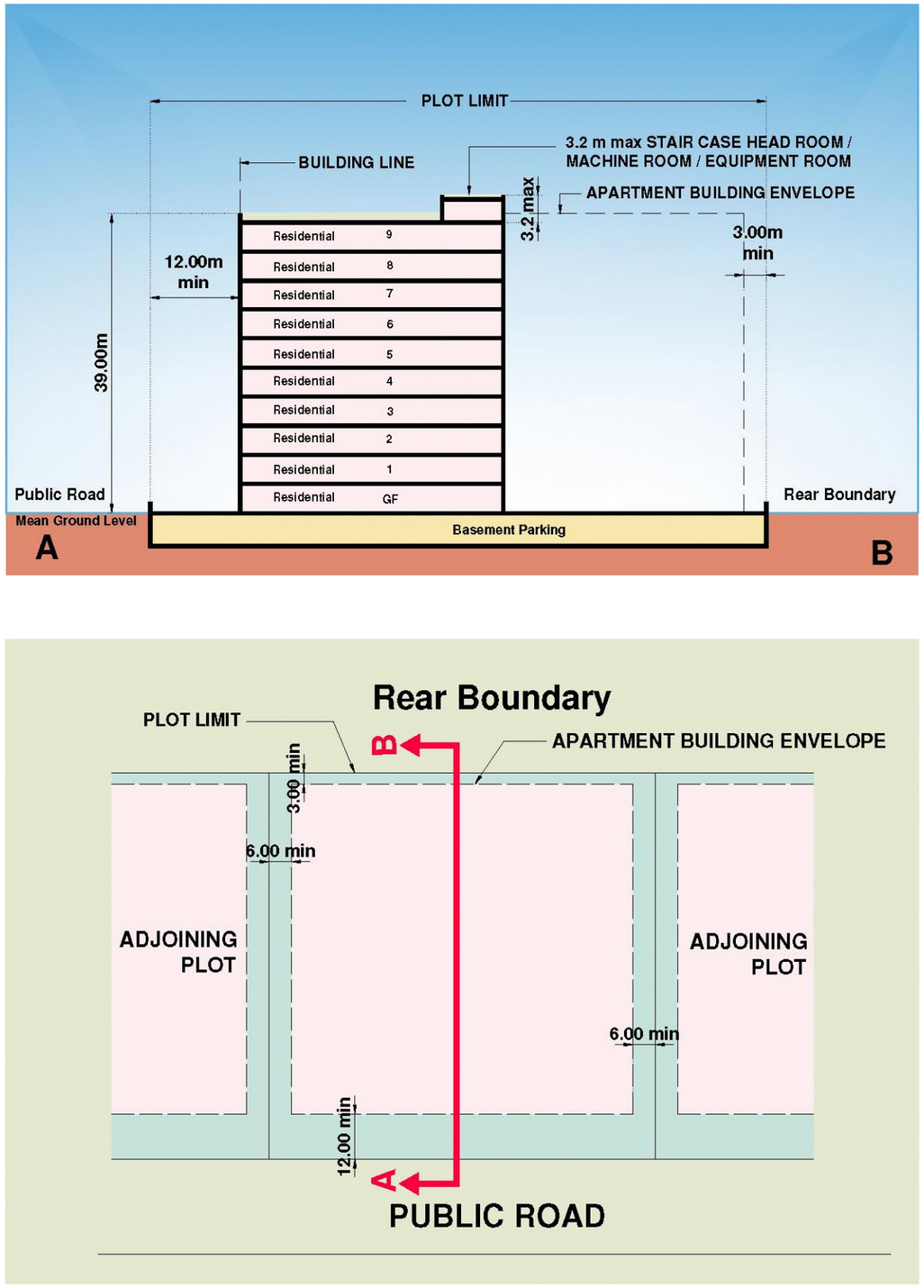


Plate 5 Sub-zone "He"

3.3 Zone "M" – Mixed use Residential / Commercial Zone

a. General:

This zone, as shown in figure 7, covers two stretches of the main spine road of Residential City. Plots are strictly reserved for the erection of buildings planned to be used as commercial at podium level and residential apartments on the upper floors. The plots located in this zone are not subject to any further subdivision; however, two adjacent plots may be joined together to form a larger plot subject to approval by the Authority.

b. Permitted Uses:

I. Podium: Retail and commercial services, restaurants, showrooms, banks and Parking. The maximum depth of the commercial strip in the podium along the main roads is limited to a maximum of 30.00 meters from the front setback line (See Plate 6 & 7), the remaining rear part of the podium is recommended to be designed as a parking structure.
II. Upper Floors: Residential Apartments, serviced apartments
III. Any other use will require a special approval by the Authority.
IV. Hotels are permitted as stand alone facilities.

c. Requirements for on plot parking:

On plot parking requirements must observe the minimum standards stated in Dubai Municipality building regulations and standards applicable to uses permitted in this zone which are:

- A minimum of one car parking space required for each apartment with a total area of 145 m^2 (1600 ft^2) or less.
- A minimum of two car parking spaces required for each apartment with a total area greater than 145 m^2 (1600ft^2).
- A minimum of one car parking space required for each studio apartment.
- One car parking place required for each 45 m^2 of Gross commercial/ showroom area.

The Authority reserves its right to increase the above parking requirements as and when it deems necessary.

3.3.1 Sub-Zone "Ma"

3.3.1.1 Maximum Floor Area Ratio (FAR): 3.75

3.3.1.2 Minimum Setbacks (See plate 6):

- From main roads: no setback required for the podium, 12.00 meters setback required for all other floors situated above podium from the plot boundary.
- From adjoining plots: 3.00 meters for the podium, 6.00 meters for all other floors situated above the podium.
- From rear boundaries and service roads: 3.00 meters for the podium, 9.00 meters all other floors situated above the podium.
- Minimum separating distance between 2 buildings on the same plot: 12.00 meters.

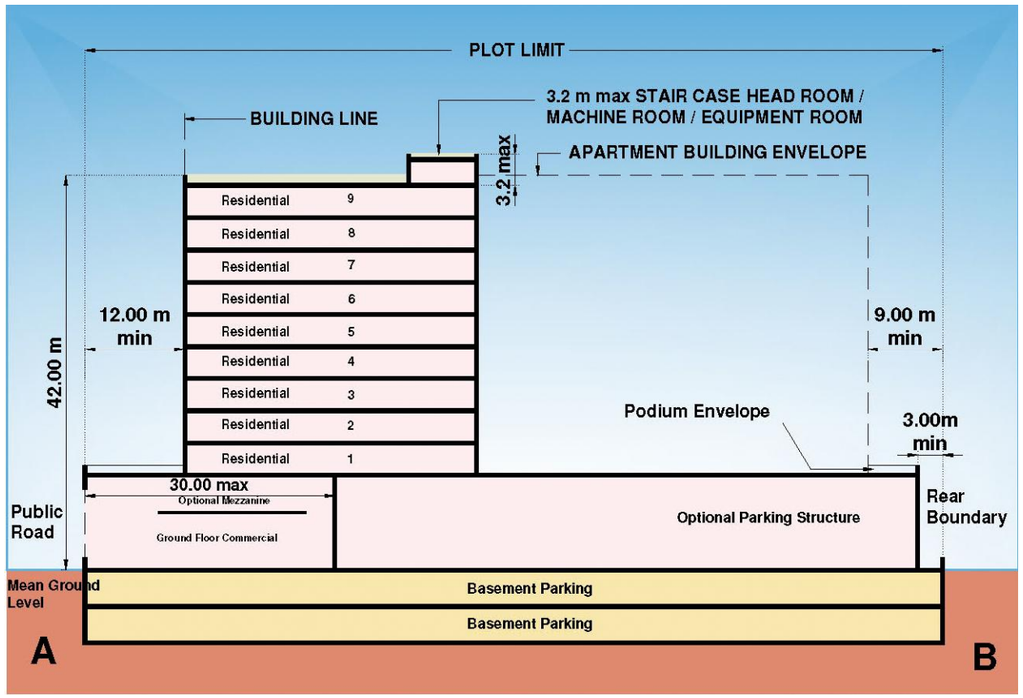
3.3.1.3 Podium

- Maximum height of the podium including parapet: 7.50 meters.
- Maximum clear height of the ground floor: 6.00 meters

It is allowed to have a mezzanine floor as part of the ground floor provided that its total area is less or equal to 50% of the gross leasable area of the ground floor.

3.3.1.4 Maximum building height: 42.00 meters.

3.3.1.5 Minimum height of the roof parapet: 1.10 meters.



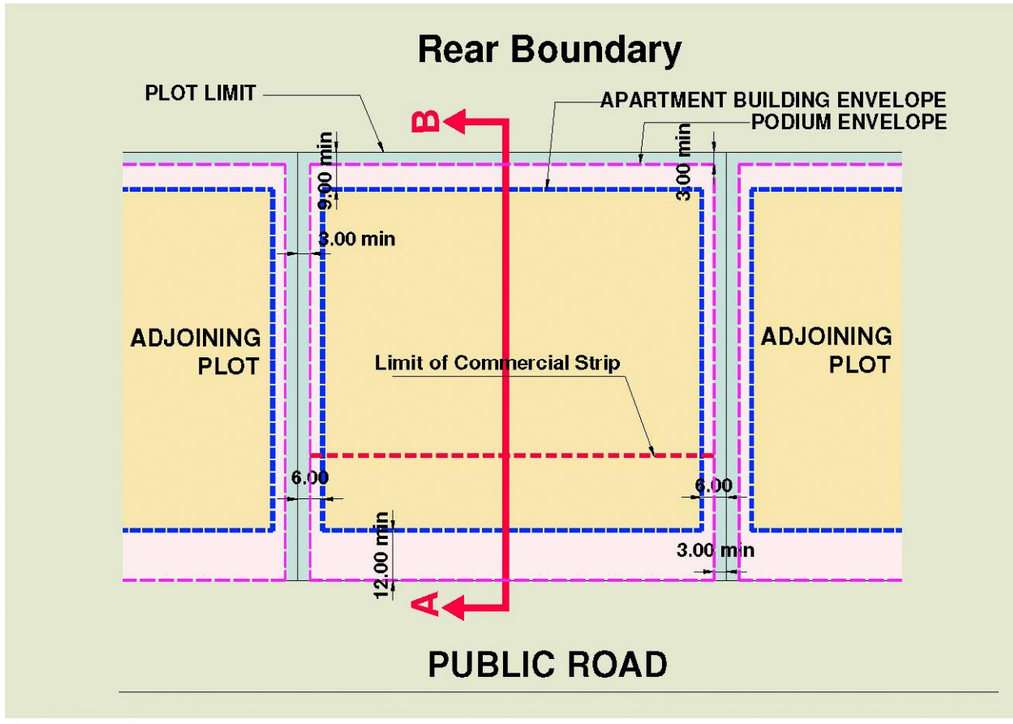


Plate 6 Sub-zone "Ma"

3.3.2 Sub-Zone "Mb"

3.3.2.1 Maximum Floor Area Ratio (FAR): 3.75

3.3.2.2 Minimum Setbacks (See plate 7):

- From main roads: no setback required for the podium, 12.00 meters setback required for all other floors situated above podium from the plot boundary.
- From adjoining plots: 3.00 meters for the podium, 6.00 meters for all other floors situated above the podium.
- From rear boundaries and service roads: 3.00 meters for the podium, 9.00 meters all other floors situated above the podium.
- Minimum separating distance between 2 buildings on the same plot: 12.00 meters.

3.3.2.3 Podium

- Maximum height of the podium including parapet: 7.50 meters.
- Maximum clear height of the ground floor: 6.00 meters

It is allowed to have a mezzanine floor as part of the ground floor provided that its total area is less or equal to 50% of the gross leasable area of the ground floor.

3.3.2.4 Maximum building height: 38.00 meters.

3.3.2.5 Minimum height of the roof parapet: 1.10 meters.

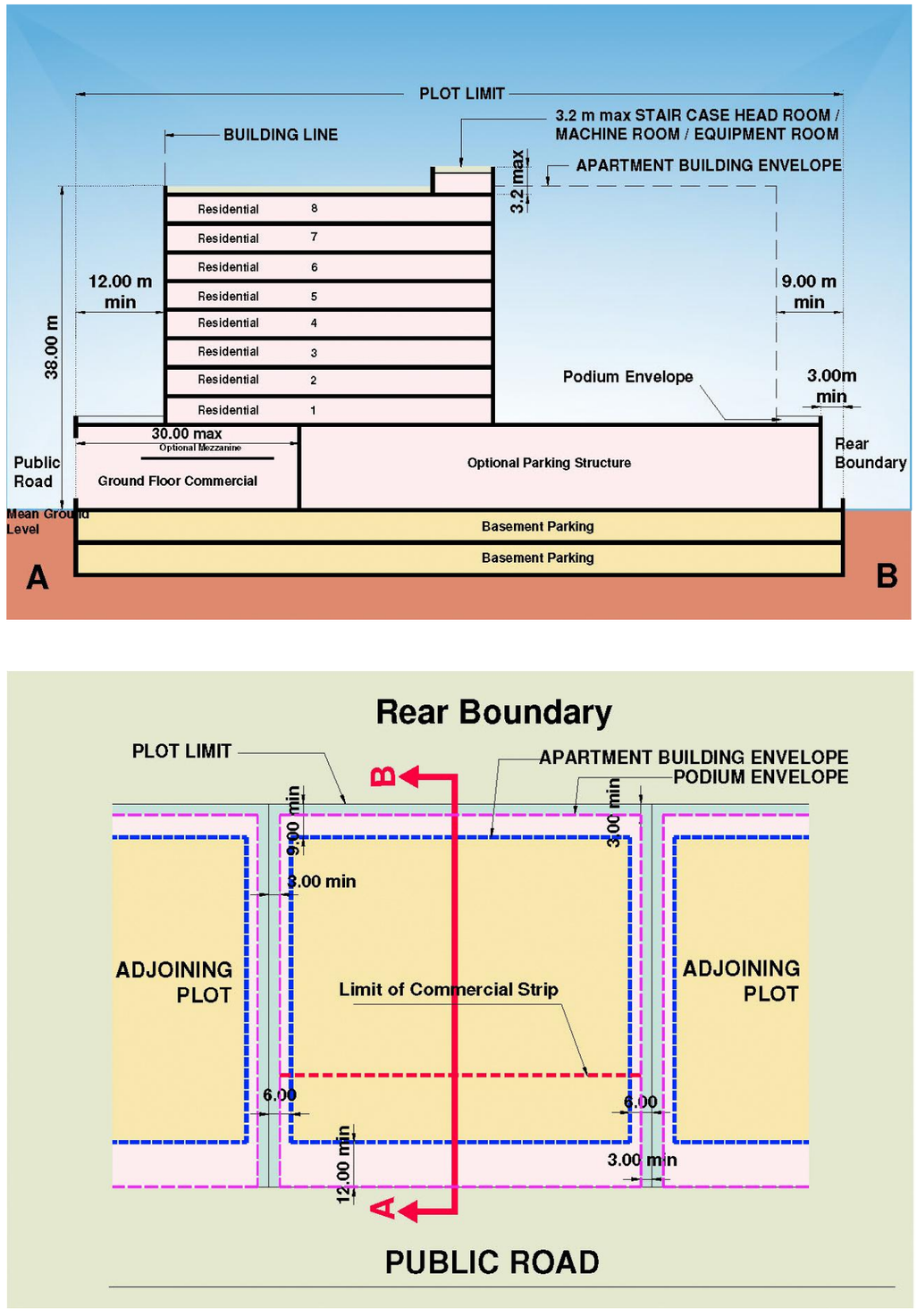


Plate 7 Sub-zone "Mb"

3.4 Zone "C" – Commercial Zone

3.4.1 General:

This zone, as shown in figure 7, includes three sites situated along the main spine of the Residential City.

3.4.2 Permitted Uses: Super markets, retail, restaurants, entertainment, banks, showrooms, cinemas and theatres.

3.4.3 Minimum Setbacks (See Plate 8):

- From main roads: 3.00 meters
- From adjoining plots: 6.00 meters.
- From rear boundaries and service roads: 3.00 meters

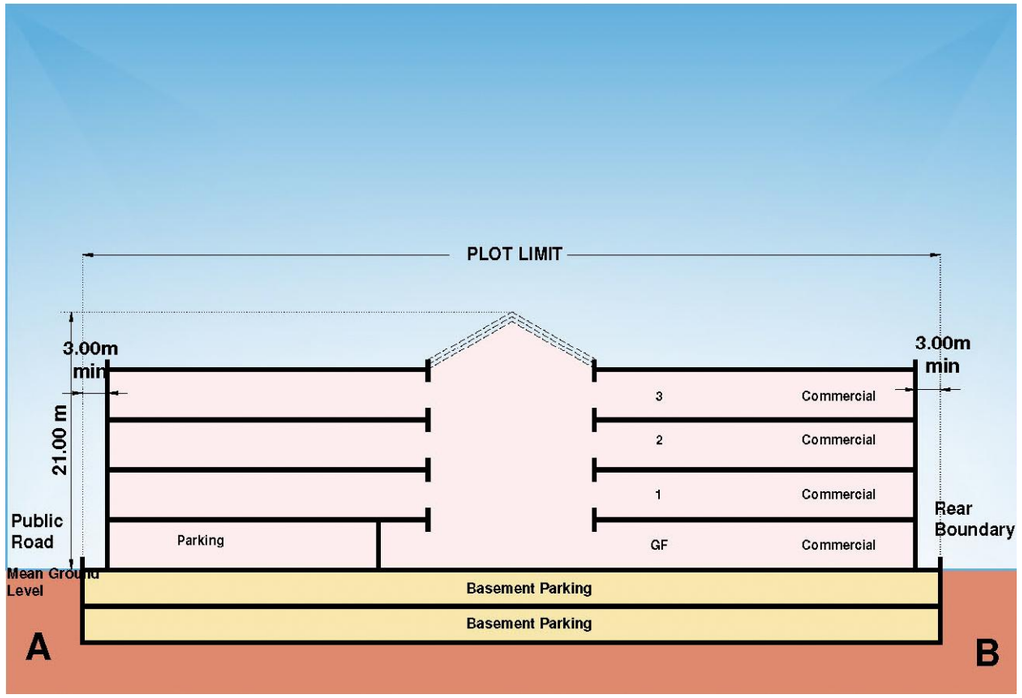
3.4.4 Maximum Floor Area Ratio (FAR): 2

3.4.5 Maximum number of floors: 4.

3.4.6 Maximum building height: 21.00 meters.

3.4.7 Minimum height of the roof parapet: 1.10 meters.

3.4.8 Requirements for on plot parking: One car parking place required for each 70 m^2 of Gross Commercial area. A minimum of 1/3 of the site area must be allocated for ground floor parking.



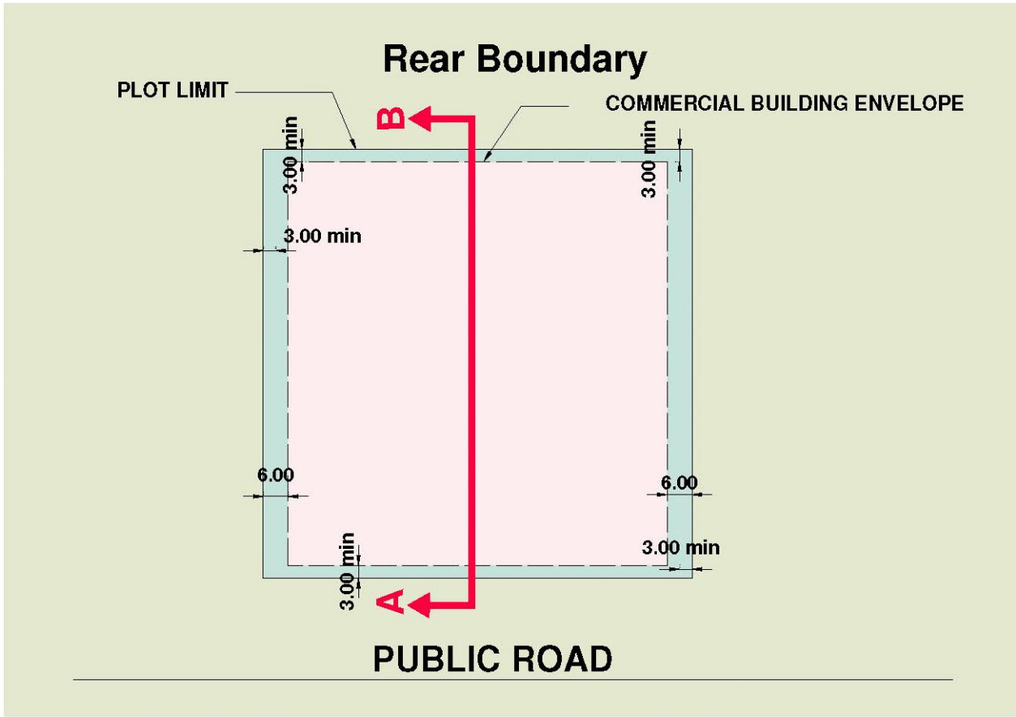


Plate 8 Zone "C"

3.5 Zone "O" – Offices Zone

3.5.1 General:

This zone, as shown in figure 7, is located west of an elliptical open space situated on the main spine of Residential City The plots located in this zone are not subject to any further subdivision; however, two adjacent plots may be assembled together to form a larger plot subject to approval by the Authority.

3.5.2 Permitted Uses:

- Offices, banks, showrooms, recreational, restaurants and parking.

3.5.3 Minimum Setbacks (see Plate 9):

- From main roads: 3.00 meters
- From adjoining plots: 4.50 meters.
- From rear boundaries and service roads: 3.00 meters

3.5.4 Maximum Floor Area Ratio (FAR): 3.5

3.5.5 Maximum number of floors: 10.

3.5.6 Maximum building heights: 42.00 meters.

3.5.7 Minimum height of the roof parapet: 1.10 meters.

.5.8 Requirements for on plot parking:

On plot parking requirements must observe the minimum standards stated in Dubai Municipality building regulations and standards applicable to uses permitted in this zone which are:

- Retail: One car parking place for each 45 m^2 of gross commercial area.
- Offices: One car parking place for each 45 m^2 of gross leasable office area.

The Authority reserves its right to increase the above parking requirements as and when it deems necessary.

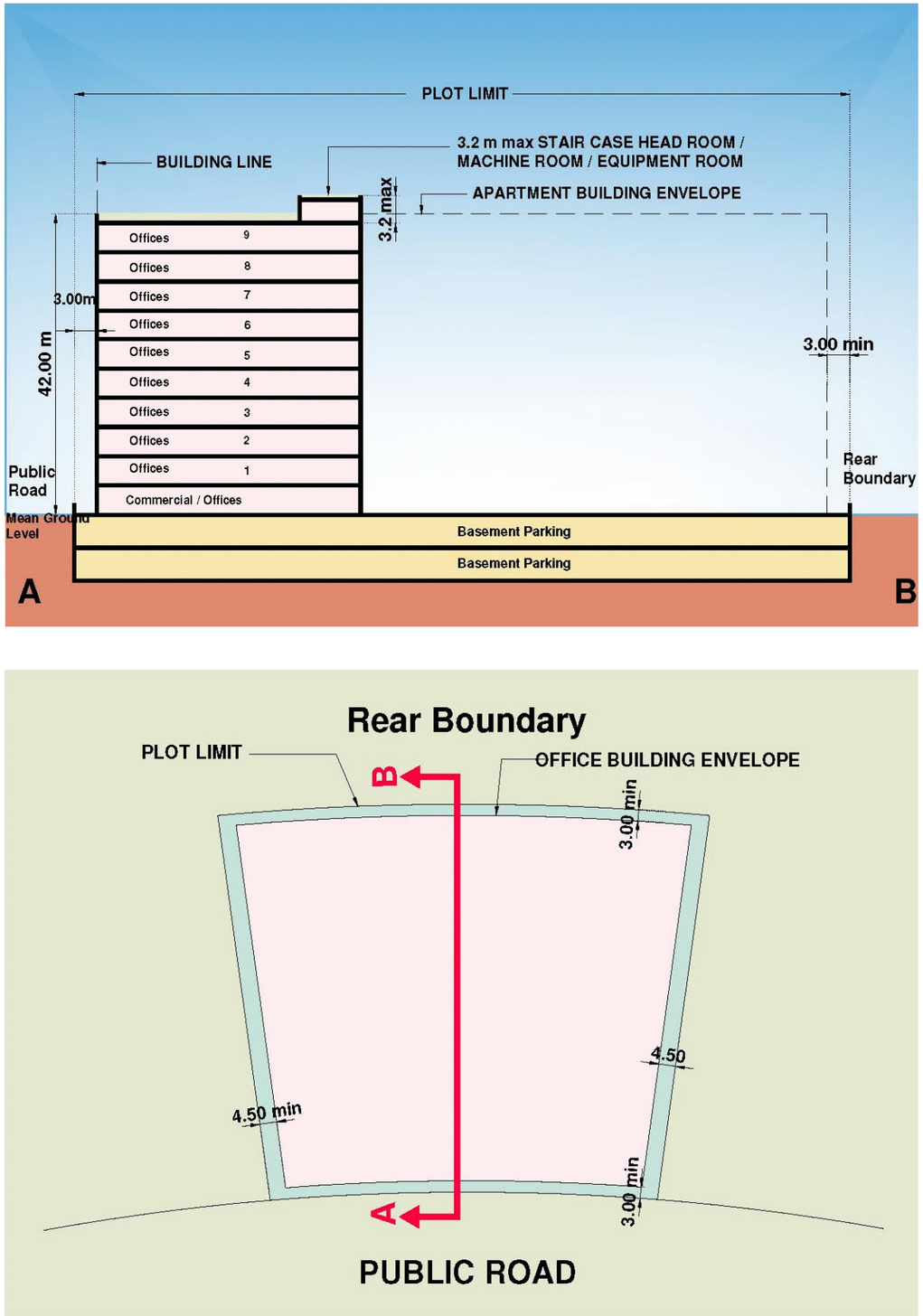


Plate 9 Zone "O"

3.6 Zone "S" – Services

3.6.1 General

The zone "S" is intended for the construction of buildings servicing the resident population such as community facilities, educational institutions, hospital and health care centers, post office, police station, civil defense, library, mosques, community halls and technical buildings such as central utility complexes, electrical substations, telecommunication centers, water tanks and pumping stations.

The codes and parameters regulating the construction of these structures and buildings must strictly follow the Building construction codes and DM building regulations and specifications, currently under application in Dubai.

3.6.2 Permitted Uses: The use of each plot is assigned on the land use plan (See Figure 6).

4. SITE AND SERVICES

4.1 Site access

4.1.1 Each serviced site must have access to all buildings and facilities situated on it. If required, internal roads may be provided and finished with interlocking blocks, with a minimum width of 4.50 m for the use of vehicles and designed to an adequate standard. Parking ramps should have a minimum clear width of 3.5 m.

4.1.2 The finished level of any paved road, parking or footpath should not be less than 150 mm above the finished level of the approach road to the site and shall have an adequate fall towards the approach road.

4.2 Utility Services

4.2.1 Utility requirements:

The Developer shall provide within the plot boundaries the following:

a. Water supply, sewerage and irrigation services to habitable parts of any building in compliance with the standards set out by the relevant Service Authorities.
b. Electrical power distribution installations in compliance with the Regulations set out by the Service Authority (DEWA).
c. Fire protection facilities shall be in accordance with the recommendations, requirements and specifications of the National Fire Protection Association, NFPA and approved by the Service Authority (Dubai Civil Defense).
d. Storm water drainage and disposal, in accordance with the recommendations and regulations of the relevant Service Authority and Dubai Municipality.
Provision of any utility and necessary reservation on any plot will require liaising between the customer and the responsible authorities.

Utility Services shall be designed and installed in accordance with the relevant Service Authority standards and regulations which includes, but not limited to the following:

- DEWA standards and specifications
- Dubai Municipality Regulations and Recommendations
- Dubai Civil Defense requirements and approval

The developer has the right with the agreement of the relevant Authorities to do some works outside the plot boundaries in order to connect to the infrastructure networks.

4.2.2 Water Supply

a. Water supply installations shall comply with the relevant Service Authority (DEWA) standards and with the Authority requirements, the British Standards and/or the Uniform Plumbing Code (UPC) USA.
b. Water storage tanks shall be provided for every serviced site to accommodate for both the fire protection and the daily domestic water demand requirement. The minimum capacity of any storage tank should not be less than one day supply for domestic water use and 90 minutes of coverage for fire protection use.
c. The Developer shall submit a request for a service connection to the Service Authority (DEWA) documents upon completion of construction.
d. All installations shall be subject to testing by the Service Authority (DEWA), in accordance with the relevant Regulations.
e. Developers shall pay a one-time water connection charge and all other charges in application to the Service Authority (DEWA) Regulations.

4.2.3 Wastewater

a. Wastewater installations shall comply with the relevant Service Authority and DM regulations, the Authority requirements and British Standards.
b. All chambers for the disposal of foul sewerage from any building shall be adequately vented and impervious to liquids internally or externally.
c. Sewers must be of durable material and construction and watertight under all conditions. The internal diameter of any soil drain shall not be less than 150 mm.
d. Service connection between the main inspection chamber of a serviced site and the public infrastructure shall be paid for by the Developer.
e. All installations shall be subject to testing and approval of the Authority.
f. Developers shall pay a one-time connection charge and all other charges thereof in accordance with Authority charges.

4.2.4 Irrigation

a. Irrigation for outdoor landscaped areas installations shall comply with the relevant Service Authority and DM regulations and the Authority requirements.
b. All installations shall be subject to testing and approval of the Service Authority and the Authority.
c. Irrigation of any outdoor landscaped areas shall be by the use of TSE water available from the relevant Service Authority.
d. The Developer shall submit a request for a service connection to the relevant Service Authority upon completion of construction, accompanied by a detailed drawing indicating the exact location of the storage reservoir(s) (daily water demand) and connection location with diameter.
e. Developers shall pay a one-time connection charge and all other charges thereof in accordance with Authority charges.

4.2.5 District Cooling

a. District cooling network supplied by the Authority is provided to each plot terminating at a valve chamber located within the plot.
b. The Developer shall be responsible for the provision of an Energy Transfer Station (ETS) to be located within his development. The Developer is also responsible for the connection to the district cooling network valves in order to provide Air Conditioning to his development.
c. All Installations shall comply with the relevant Service Authority Specifications, Standards and Regulations.
d. The Developer shall submit a request for a service connection to the Service Authority accompanied with detailed drawings indicating location of the building ETS along with related Piping and Instrumentation Diagrams (P&ID) and cooling load requirements.
e. The Developer shall provide at the main connection to the building ETS station a Btu/Energy meter in compliance with the Service Authority requirements.
f. The Developer shall, as a minimum requirement, make available for reading, monitoring and control via a DDC (BMS) Controls connection to the Service Authority site wide control network of the following:
   - Btu/Energy meter reading
   - Monitoring and control of ETS station heat exchanger (District Cooling side only)
g. The Developer shall pay a one time connection charge in addition to all others usage charges thereof in accordance with the Service Authority charges.

4.3 Storm Water Drainage

4.3.1 Storm water installations shall comply with the relevant Service Authority and DM regulations, the Authority requirements and the British Standards.

4.3.2 Roof drainage network shall be designed to a frequency return period of five years.

4.3.3 Roof finish shall have a gradient of at least 1:80 capable of directing storm water to suitable outlets or down pipes, which shall discharge freely at ground level.

4.3.4 Channels, gutters, outlets or down pipes shall be of durable material with suitable watertight joints, in accordance to Authority standards.

4.3.5 Down pipes shall be at least 80 mm diameter, securely attached to the building.

4.3.6 Public parking shall be provided with channels and gutters inlets designed to a minimum rainfall intensity of 64 mm per hour and a minimum time of concentration of 10 minutes.

4.4 Refuse Disposal

4.4.1 Domestic refuse from each residential building or tenant shall be sorted out neatly in tight bags and disposed of through dedicated rooms refuse chutes, to be located on each floor, to the ground level main refuse collection room containing the bulk refuse bins.

4.4.2 Domestic refuse from individual residential homes shall be neatly collected in tight bags and disposed off in bulk street refuse bins provided for such purpose by the Authority through out the Residential City site.

4.4.3 Domestic refuse shall be collected from building bins or street bins by the Authority appointed Service Company.

4.4.4 The Developer shall pay for collection charge thereof in accordance with the Authority charges.

5 BUILDING DESIGN STRUCTURAL REQUIREMENTS

5.1 The building shall be so constructed that the combined dead, imposed and wind loads are safely transmitted to the ground without deformation and deflection of any part of the building, and without such ground movement impairing the stability of any part of another building. Building stability shall not be impaired by subsoil movement due to swelling or shrinking.

5.2 Structures shall be designed in accordance with the current Uniform Building Code (UBC) and British Standards codes of practice, and shall comply with the durability requirements mentioned in this section. The following list includes some of the British Standards that are applicable to building design and construction:

BS 6399: Part 1: Code of practice for dead and imposed loads.
BS 6399: Part 3: Code of practice for imposed roof loads.
CP3: Chapter V: Part 2: Wind loads.
BS 5628: Code of practice for use of masonry.
BS 449: Specification for the use of structural steel in buildings.
BS 3692: Specification for ISO metric precision hexagon bolts, screws and nuts-Metric units.
BS 4232: Specification for surface finish of blast cleaned steel for painting.
BS 4604: Specification for the use of high strength friction grip bolts in structural steelwork-Metric series.
BS 5950: Structural use of steelwork in buildings.
BS 8004: Code of practice for foundations.
BS 8007: Code of practice for the structural use of concrete for retaining aqueous liquids.
BS 8110: Structural use of concrete.
Basic design wind speed should not be less than 45 m / s.

5.3 Seismic design shall be to Uniform Building Code zone 2A.

5.4 Minimum requirements for structural steelwork:

a. Minimum thickness of material for main structural members shall be 6 mm unless the member is a hot rolled section complying with BS4 and BS 4848, or similar approved standards.

b. Painting shall be epoxy based paint with a minimum life to first maintenance of 20 years.

5.5 Minimum requirements for concrete work:

a. Minimum cement content shall be 370 kg / m^3.
b. Maximum water / cement ratio shall be 0.45.
c. Minimum 28 days characteristic cube strength shall be 30 N / mm^3.
d. Maximum chloride content (as NaC1) in any mix shall not exceed 0.3 % by weight of cement for reinforced concrete 0.12 % by weight of cement for mass concrete and 0.06 % by weight for prestressed concrete.

5.6 The following are particular minimum requirements for concrete in contact with soil:

a. Minimum 28 days characteristic cube strength shall be 40 N / mm^3.
b. All reinforced concrete members shall be protected with quality damp-proofing and water-proofing systems.
c. Clear concrete cover to reinforcement shall be not less than 75 mm for footings and 50 mm for columns, beams, slabs and walls.
d. Anti-termite treatment shall be provided underneath slabs on grade and ground beams to prevent termite infestation. Proposed anti-termite treatment shall be approved by the Authority.

5.7 The design and construction of pipelines, storage tanks, boilers, cranes, lifting equipment and pressure vessels shall be checked and certified by an independent third party inspection agency approved by the Authority.

6. MATERIALS

6.1 General

6.1.1 Green Building products shall be used in all the building construction as laid down in the Green Building regulations by the authorities.

6.1.2 All materials used in any construction shall be of a type and quality that fulfils the purpose for which they are used. They must be safe and durable. Where and to the extent that materials, products and workmanship are not fully detailed or specified, they are to be of a standard appropriate to the works and suitable for the functions stated in or reasonably to be inferred from the project documents, in accordance with good building practice.

6.1.3 Products must be new and previously unused. For products specified to British or other approved standards, certificates of compliance shall be obtained from manufacturers. Where a choice of manufacturer or source of supply is allowed for any particular product, the whole quantity required to complete the work must be of the same type, manufacture and/or source.

6.1.4 Concerning basic workmanship; and where compliance with BS 8000 is specified, this is only to the extent that the recommendations therein define the quality of the finished work. Where BS 8000 gives recommendations on particular working methods or other matters which are properly within the province and responsibility of the Contractor, compliance therewith shall be deemed to be a matter of general industry good practice and not a specific requirement of the Authority.

6.2 Screeds and Toppings

Cement screed shall be to BS 8204 and BS 8000 part: 9.

Heavy duty epoxy topping shall be composed of epoxy aggregate matrix and top coats to produce a dense, seamless and impervious topping, colors to be selected by the Consultant.

Epoxy concrete floor sealer to be solvent based epoxy floor coating providing abrasion, chemical resistant, colored, dustproof and sealed surface.

6.3 Finishes

All finishes are to conform to relevant BS and BS code of practice.

6.3.1 Internal plastering is to be executed in accordance with BS 5492.

6.3.2 External rendering is to be executed in accordance with BS 5262.

6.3.3 Painting is to be in accordance with BS 6150 and BS 8000 pt: 12.

6.4 Rigid Floor and Wall Tiling and Slabs

6.4.1 Ceramic tiles and fittings shall conform to BS 6431. Fixing of ceramic tiling and fittings is as per BS 5385: part: 1.

6.4.2 Terrazzo tiles and fittings shall conform to BS 4131, hydraulically pressed and steam cured joints to be true to line, continuous and without steps, and parallel to the main axis of the space or specified features.

6.5 Cladding and Covering

6.5.1 Insulated composite cladding panels comprising outer skin of profiled sheet steel, hot-dip galvanized to BS 2989 -82 type G275. Sheets are to be coated with an anti corrosive epoxy primer and barrier coat on both sides and a protective colored coating. Profiled sheeting and ancillary materials are to be fixed neatly to manufacturer's recommendations to make the whole sound and weather tight.

6.5.2 External cladding shall be executed in accordance with BS 8298. Cladding is to resist all dead and live loads; wind loads are to be calculated in accordance with BS CP 3, chapter V, Part 2 based on prevailing site conditions.

6.6 Glazing

6.6.1 Glass generally shall conform to BS 952. Glazing must be wind and water tight under all conditions to BS 6375 with full allowance made for deflections and other movements. Preparation of surrounds, dimensions of edge cover and clearance, positions and materials of distance pieces, setting and location blocks are to conform to BS 6262 and to glass and sealant manufacturers' recommendations. General glazing is to conform to BS 6262. Security glazing is to be to BS 5357.

6.6.2 All buildings with heights of more than G+1 and include large areas of glass in their facades (i.e. curtain wall) shall be provided with the necessary external glass cleaning equipment and installations. The external glass cleaning system shall be approved by the Authority.

6.7 Thermal Insulation

Thermal insulation requirements for the building envelope shall be provided as per Dubai Municipality regulations and shall be subject to the Authority's approval.

6.8 Metal Work General

Grades of metals, section dimensions and properties shall be prescribed in accordance with appropriate British Standards. When not specified, grades and sections shall be appropriately for the purpose. Metalwork shall be carefully and accurately fabricated to ensure compliance with design and performance requirements using types, grades and sections of metal appropriate for the purpose. Finished work must be free from distortion and cracks.

6.9 Woodwork General

All woodwork shall generally comply with British Standards 1186 parts 1 and 2.

6.10 Doors and Windows

6.10.1 Aluminum alloy windows and screens shall comply with the general requirements of BS 4873. Weather tightness shall be to BS 6375: Part 1 constructed from extruded aluminum sections made from alloy 6063 fully heat treated. Bearing devices, hardware and reinforcing members are to be from material that is corrosion resistant and compatible with aluminum. Weather-stripping is to be made from neoprene or EPDM rubber. Aluminum sections are to have electrostatically applied polyester powder coating or fluoro-polymer finish. Operation and strength characteristics to be to BS 6375: Part 2.

6.10.2 Flush steel doors shall be to BS 6510. Doors are to be flush, watertight, with closed tops and edges and reinforced internally with stiffeners welded and spaced not more than 150 mm over centers. Fire resisting steel doors are to satisfy the requirements of BS 476: Parts 20 and 22.

6.10.3 Wood semi-solid core flush doors are to be to BS 4787 part 1. Wood fire-resisting flush doors are to satisfy the requirements of BS 476: Parts 20 and 22;

6.10.4 Roller Shutters: Comprising curtain of interlocking galvanized steel with electro statically applied polyester powder coating finish, supplied complete with barrel rollers, helical springs, vertical guides, operating gear for motorized operation, hoods, personnel doors, glazed panels and ventilation slots, as shown on the drawings, and with manufacturer's standard ironmongery, accessories and fixings.

6.10.5 All doors within a facility must be on a master key, a copy of which must be handed to the Authority.

6.11 Fire Resistance

The specified performance is to be the minimum period attained when tested for integrity in accordance with the relevant parts of the British Standards (BS 476), U.L. Standards and shall be listed for the intended function and use by an authorized third party approved by the Authority.

7. FIRE PROTECTION REGULATIONS

7.1 Provision of Fire Protection Facilities shall meet the recommendations, requirements and specifications of the National Fire Protection Association, NFPA and shall be approved by the Service Authority Dubai Civil Defense and the Authority based on fire risk assessment and (UAE) Government Safety Regulations.

7.2 Every building shall be provided with adequate means of egress, and other safeguards which shall be specified in kind, number, location and capacity, taking into consideration type of occupancy, number of persons exposed type of building materials and other relevant factors that may affect the safety of occupants.

7.3 A minimum of two means of escape shall be provided in every building, and shall be arranged in such a way that shall minimize the eventuality of both being rendered impassable during the same emergency conditions.

7.4 Every exit stair and other vertical opening between floors of a building shall be enclosed and protected as necessary to prevent the spread of fire, fumes and smoke through the vertical openings from floor to floor, giving enough time for the occupants to reach the means of escape.

7.5 Every building shall be provided with fire detection alarm system to warn the occupants in the event of fire. The alarm system shall be adequately connected to the district Fire control room monitoring system through a digital communicator and to the DWC City Integrated Intelligent Building Solution (I²BS) System through DWC WAN. The developer shall provide necessary gateway equipment and connectivity to the DWC WAN available with in the Building telecom room. The consultant shall refer to the DWC City I²BS specifications available with DWC-DuServe for technical details. The developer may choose to avail the services of 365/7/24 monitoring of the fire alarm system by the DWC City I²BS Central Control Centre and receive alarm/fault notifications by email/SMS.

7.6 Every building which utilizes any inflammable or hazardous GAS in places like restaurants/canteens, etc. shall be provided with gas detection system to shut off the gas supply and to warn the occupants in the event of gas leakage. The gas detection system shall be adequately connected to the DWC City Integrated Intelligent Building Solution (I²BS) System through DWC WAN. The developer shall provide necessary gateway equipment and connectivity to the DWC WAN available with in the Building telecom room. The consultant shall refer to the DWC City I²BS specifications available with DWC-DuServe for technical details. The developer may choose to avail the services of 365/7/24 monitoring of the detection system by the DWC City I²BS Central Control Centre and receive alarm/fault notifications by email/SMS.

7.7 Portable fire extinguishers of appropriate type and numbers must be provided and conveniently located in every building in accordance with NFPA requirements.

7.8 For storage occupancy-fire protection and means of egress shall be provided as per their hazard contents classifications in compliance with NFPA requirements.

7.9 Every building shall be properly and fully fire protected by an approved fire protection system complying with NFPA requirement taking into consideration the type of occupancy and usage. Main fire protection system components such as fire pumps, controller, sprinklers and accessories as applicable shall be U.L. listed for the intended use and Factory Mutual approved.

8. Security System

8.1 Every building in Commercial sector shall comply to the regulations of Department of Protective Systems of Dubai Police (www.dps.ae) for CCTV/Security requirements

8.2 Every building in the residential sector shall be provided with CCTV cameras to monitor the following areas to comply with DWC city security requirements.

1) Car park entry and exit
2) Car park lift lobby to identify the people entering
3) All external entrances to the building to identify the people entering the building.

8.3 Every building in the Commercial sector shall have CCTV recording features as specified by Department of Protective Systems.

8.4 Every building in the Residential City shall have CCTV recording for a minimum of 31 days at minimum of 7 frames per second and CIF resolution

8.5 Adequate lighting shall be provided at field of camera so that people/picture is identifiable at any time of the day.

8.6 Developers of commercial or residential buildings shall provide their own CCTV management system or provide only IP CCTV Cameras and choose to avail Network Video Management and recording services provided by DWC/DuServe. The required cameras' video feeds shall be made available in IP formats at the building telecom room to avail the services of monitoring and recording by the DWC/DuServe Security Control Room. The consultant shall refer to the DWC City I²BS specifications available with DWC-DUSERVE for technical details.

Any building which is equipped with Access Control System may also choose to avail the services of 365/7/24 monitoring of the Access Control System by the DWC City I²BS Central Control Centre and receive alarm/fault notifications by email/SMS. The consultant shall refer to the DWC City I²BS specifications available with DWC-DUSERVE for technical details. Being reviewed

9. MECHANICAL INSTALLATIONS

9.1 General

9.1.1 All mechanical systems including plumbing, cold and hot water, drainage, rainwater, fire protection, refrigeration, kitchen planning, refuse disposal, ventilating and air conditioning, controls, compressed air, fuel and LPG systems, and materials shall be in accordance with the Authority Standards and in full compliance with, but not limited to, the following standards specifications or any equivalent standard approved by the Authority.

ASHRAE	American Society for Heating Ventilation and Air Conditioning Engineer
NFPA	National Fire Protection Association
ANSI	American National Standards Institute
BS	British Standard
UBC	Uniform Building Code
UPC	Uniform Plumbing Code
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
ARI	Air Conditioning and Refrigeration Institute
AMCA	Air Moving and Conditioning Association
UL	Underwriters' Laboratories Inc.
FM	Factory Mutual
AGA	American Gas Association
API	American Petroleum Institute

LEED – Green Building related code of practice

9.1.2 All mechanical systems are to have an identification and color coding system in compliance with ANSI or any equivalent standard approved by the Authority.

9.2 Plumbing

9.2.1 Water supply, plumbing and sanitary drainage installations shall be in accordance with the requirements of the Authority Standards and the relevant Service Authority (Water) Regulations in compliance with the Uniform Plumbing Code (UPC) and/or the British Standards.

9.3 Ventilation and Air Conditioning

9.3.1 The design and installation of all air conditioning and ventilation systems shall be in accordance with latest guidelines of ASHRAE Standards, ANSI, the UBC and applicable NFPA Standards.

9.3.2 The design of walls and roof shall take into account Ventilation and Air conditioning requirements. The purpose is to limit the accumulation of moisture and pollutants which originate in the building and which would otherwise become a health hazard. An adequate supply of fresh air is necessary to ensure the health and comfort of the occupants of buildings and to limit condensation.

9.3.3 The objective is to provide means of:

a. Proper ventilation, either natural or mechanical, to ensure acceptable Indoor Air Quality (IAQ) and dilution of pollutants.
b. Proper air conditioning to ensure comfortable indoor temperature.
c. Proper extraction of moisture and control of contaminants (e.g., from kitchens, laundries, toilets, industrial spaces, etc).

9.3.4 Habitable rooms shall comply if there are provisions for:

a. One or more operable Ventilation Openings to the exterior with a total area of at least 1/20 of the floor area of room with some part of the opening at least 1.75 m above floor level
b. such opening(s) shall have a total ventilation area not less than 0.46 m^2 with opening secure and draughts avoided.
c. mechanical ventilation capable of providing 2 air changes/hour with a minimum of 7 L/s of fresh unpolluted outside air for each occupant during the time the space is occupied.

9.3.5 Ventilation of kitchens shall comply if there are provisions for:

a. mechanical kitchen hood extract system designed and installed in compliance with ASHRAE guidelines.
b. Background ventilation-either natural by means of operable opening(s) to the exterior of not less than 0.46 m^2 or mechanical ventilation operating

continuously to provide for the make-up air extracted by the hood and to give nominally a minimum of one air change per hour.

9.3.6 Toilet rooms may be ventilated by either natural ventilation with fully operable exterior windows with an area not less than 0.279 m^2 each and with part at least 1.75 m above floor or by mechanical extraction capable of providing 12 air changes/hour. Such mechanical extraction shall be communicated to the outside with point of discharge at least 3 m away from any fresh air opening.

9.3.7 Ventilating a habitable room through an adjoining space:

Two habitable rooms may be considered a single room for ventilating purposes if there is a permanent opening between which is equal to at least 1/20 of the combined floor area.

A habitable room may be ventilated through an adjoining space if:

a. the adjoining space is a conservatory or a similar space and;
b. there is an operable opening between the room and the space, with an area not less than 1/20 of the combined floor areas and;
c. there is a ventilation opening(s) in the room and the space together, or in the space alone, equal to at least 1/20 of the combined floor areas and with a part of the ventilation opening area at least 1.75 m above the floor level; and for background ventilation there are openings to the space and between the space and room each having not less than 0.46m^2 area.

9.3.8 Alternative approaches

The movement of air may be activated by such means as the operation of the door of the compartment, the operation of the lighting or by independent manual control. However, there should be an overrun of at least 15 minutes after the use of the compartment.

A recommended alternative approach to meeting the performance requirements is contained in BS 5720:1979 Code of Practice for mechanical ventilation and air conditioning in buildings and BS 5250:1989 Code of Practice: the control of condensation in buildings (Clauses 9.8 and 9.9).

9.3.9 The ventilation of industrial buildings shall be in accordance with ASHRAE HVAC Application Handbook – latest Edition and ASHRAE Standard 62-2001.

9.3.10 No air conditioning or ventilation equipment shall be visible from outside.

9.3.11 Developer shall comply with Dubai Government's regulations for Green Buildings and provide adequate energy management system through Building Management System and Lighting Control System.

9.3.12 Any building which utilizes HVAC Control System and Lighting Control System in stand alone mode or centralized mode (Building Management System) may choose to connect to the DWC City Integrated Intelligent Building Solution (I^2BS) System to avail the 365/7/24 monitoring services by the I^2BS Central Control Centre and receive alarm/fault notifications through email/SMS. The consultant shall refer to the DWC City I^2BS specifications available with DWC-DUSERVE for technical details.

9.4 ELV Systems

Any building which requires a centralized monitoring of the ELV systems installed in the building shall avail the services of 365/7/24 monitoring of the systems by the DWC-DuServe City I^2BS Central Control Centre and receive of alarm/fault notifications by email/SMS. The consultant shall refer to the DWC City I^2BS specifications available with DWC-DUSERVE for technical details. Any intelligent system which provides a communication port (RS232, RS485, Ethernet, Lon, etc...) and a communication protocol (standards such as LonWorks, BacNet, ModBus, TCP/IP, or any well defined API) shall be connected to I2BS system.

9.5 District Cooling Services

9.5.1 Objective: To Provide world class, energy efficient, economical and environmental friendly DCS to the DWC customers.

9.5.2 Overview of Various types of Customers: Mainly Master Developers and Building Owners. Master Developers (MD) are two types: 1) Exclusivity and 2) Reseller Building Owner (BO) are two types: 1) BO with Master Development and 2) Individual Customer (Building Tenant)

9.5.3 Basic MD exclusivity idea: DWC is the Master Developer as a whole in exclusivity right to provide DCS to site development along with title to land DCS Plant and associated equipments.

Further DWC DuServe at its own expense design, constructs, commission, operates and maintains the DCS Plant and Equipment required supplying DCS to the entire site up to its maximum cooling capacity for the term of the agreement with DWC DuServe.

9.5.4 MD Reseller: The MD reseller contracts with DWC DuServe to provide DCS to entire site and agrees to purchase in advance all the required cooling load capacity. Further DWC DuServe at its own expense design, constructs, commission, operates and maintains the DCS Plant and Equipment required supplying DCS to the entire site up to its maximum cooling capacity for the term of the agreement with DWC DuServe.

9.5.5 MD / BO obligations:

1) Assistance and information to be provided by the BO, Approvals, License and permits, Easements and Right of the ways, ETS Room (provided at no expense with adequate space for ETS installation) & ETS connection.

2) Accuracy and up to date information, immediate update of any changes, final building plan, size and location of ETS Room as (size as advised by DWC DuServe)

3) Changes to load and delivery date critical and to be provided as soon as reasonably practical.

4) Information in locating underground services going to Building

5) ETS requirements and details of ETS installations to be followed as per DWC-DuServe standards.

9.5.6 DCS Conditions: The purpose and objective is to remove ambiguity and establish rules of interpretation in case of dis-agreement. Warranty to temperature at point of delivery not to exceed maximum supply temperature and maintain temperature between chilled water supply and building return water.

9.5.7 District Cooling Service: Standard term and conditions applicable to all customers – How DWC-DuServe DCS operates.

9.5.8 Description of Service: Important provisions, BO incorporated into agreement, Legal Standards, Maintain Delta Temperature.

9.5.9 Availability of DCS: a) DCS up to site demand ETS load only b) If increase in demand, which should be addressed in writing mentioning specific dates for which additional cost payable by BO for the change in demand load. (Applicable additional cost and approval of demand change will be under DWC-DuServe discretion. c) There will be incremental phasing in building or development demand load d) Reserves the right to use Temporary District Cooling Plants and equipments if relevant.

9.5.10 What if DWC- DuServe is ready to deliver DCS but customer is not ready?1) Commencement of demand charges

2) Exclusively will not permit any third party DCS provider within the site during the term or any other alternative form of air-conditioning.3) MD to assist in all respect to provide personnel and building load details information and data assistance and coordination with their representative or consultant .

9.5.11 DWC-DuServe Obligation: 1) To construct, operate and maintain DCS plant and equipment at own cost 2) To exercise “reasonable skills” care and due diligence in providing DCS

9.5.12 DCS Charges: MD and BO to abide the DCS charges set by DWC-DuServe regulatory body such as demand, connection, consumption, metering equipment charges and surcharge with applicable refundable deposit.

9.5.13 Limitations of liabilities and indemnities: DWC-DuServe to manage risk, pertaining to liability clause (proven damage to building solely caused by fraud and negligence), indemnity clause, failure to deliver DCS, insurances, term of agreement and contracts, renewal of agreements (2yrs) and expiration(retain or sell).

9.5.14 Suspension and Termination: To be implemented for Force Majeure, such as events outside either party’s reasonable control ie: floods, natural disaster, terrorism etc.

9.5.15 Reason for Termination: Events like insolvency close of businesses, winding up, court order and lender enforcement of asset security.

9.5.16 Default Termination: Material breach by customer and failure to remedy within 60 days notice.

9.5.17 Effects of Termination: DWC-DuServe right, stop providing DCS to site, cease all work and retain ownership ofplant and equipment, sell land etc.

9.5.18 What if MD / BO terminate contracts earlier? 1) Such as, during design, procurement etc, for which 2 years demand charge for the contracted load demand with any other cost to be incurred on MD / BO. 2) After design, construction, etc.

9.5.19 Confidentiality: Both parties need to protect confidential information which is exchanged between them in course of performing obligations under the agreement, i.e.: designs, technical data, trademark, financial data, legal documents etc.

9.5.20 Improper Payment by MD or BO, will lead DWC-DuServe right to stop providing DCS under conditions of contract agreement, with a notice period.

9.5.21 Miscellaneous Provisions: Dispute Resolution – choosing an efficient and neutral forum to resolve disputes within DWC-DuServe authority or by Dubai Chamber of Commerce and Industry.

9.5.22 DWC-DuServe Obligation 1) To construct, commission, own, operate and maintain DC Plant, CHW piping network and primary side ETS installation up to agreed building load demand.2) DCS as per agreement between DWC-DuServe and the customer (MD / BO) 3) Additional redundancy, standard care and all reasonable efforts for continuous supply of District Cooling Services.

9.5.23 DCS Contract: The contract shall be up to 25 yrs, extendable there off on both DC provider regulation that could be revised for other reasons such increased in utility, operation and maintenance cost or any other charges etc. The contract can be extendable for another 25 yrs time period mutually agreeing on DC regulations.

9.5.24 The Purchaser / DCS subscriber acknowledges and understands that the Seller / DWC- DuServe may identify and approve of a particular district cooling plant, company or operator to provide cooling services exclusively to the Master Community and the Purchaser agrees to acquire chilled water for the purposes of air-conditioning for the Building(s) only from such DWC-DuServe approved district cooling plant, company or operator serving the Master Community and shall in a timely manner enter into an exclusive supply agreement with the said district cooling plant, company or operator. The Purchaser shall be responsible to pay for chilled water consumption and connection charges and other applicable tariffs from date of chilled water connection readiness, (irrespective of customer consumption) calculated at the district cooling plant service provider applicable tariff.

9.6 Mess and Kitchen Construction

9.6.1 A mess and kitchen if required shall be constructed of fire resisting materials.

9.6.2 Floors and walls shall be impervious to moisture and capable of being cleaned by washing down.

9.6.3 Walls to be tiled to a height of min 2m above floor level with ceramic tiles.

9.6.4 Drains to incorporate grease and food particle traps and interceptors.

9.6.5 Working surfaces for preparation of food are to be of stainless steel or other approved impervious material to facilitate cleaning and maintenance of hygienic conditions.

9.6.6 Mechanical extraction with exhaust hoods and fans to all areas with cooking taking place i.e. stoves, gas ranges and ovens tan doors etc.

9.6.7 Kitchens shall be fitted with the recommended fire protection system in accordance with the latest NFPA 96 requirements. Kitchen hoods shall be provided with an approved and certified automatic fire protection system fitted to the hood.

9.6.8 Any gas pipes to cooking equipment etc., inside the building shall be with double containment and shall be in accordance with the latest NFPA requirements and shall be laid in an approved manner with U.L. listed and approved materials and accessories i.e. copper tubing or steel piping with tapered threads or welded permanent joints, minimum length of flexible hoses to connect to equipment, gas shut off valves, gas leak detection, etc.

9.6.9 Automatic gas leak detection and shut-off systems shall be provided to automatically shut-off the main gas supply to all burning equipments in the event a gas leak or a fire is detected and shall be in compliance with NFPA 96 requirement.

9.6.10 Layout and construction details of any temporary canteen, required during the period of construction, shall be approved by the Authority.

9.7 Energy Conservation

9.7.1 Energy efficient designs taking into consideration energy conversation and use of higher efficiency equipment is highly recommended by the Authority.

9.7.2 Special consideration and incentives may be applicable subject to prior arrangement with the Authority and /or the relevant Service Authority.

10. ELECTRICAL INSTALLATION

10.1 General

10.1.1 All Electrical Installations shall follow and comply with the Service Authority (Electrical) Rules and Regulations for electrical installations, IEE Wiring Regulations, and International Electro technical Commission (IEC) Codes (latest Editions).

10.1.2 The Developer shall provide to the Service Authority (Electrical), the connected load and maximum demand load (in kVA) required for his construction and operation. A copy of the Service Authority (Electrical) N.O.C. shall be forwarded to the Authority for their information. The Developer shall also submit to the Authority the following:

a. Electrical Distribution Single Line Diagram.
b. Schematic Diagram showing load intake and metering arrangements.
c. Load Schedules.
d. Electrical rooms and incoming cable routing layouts.
e. General arrangement and dimensional layout of electrical switch room with KWH metering facilities.
f. Cable routes.
g. Wiring layouts.

10.1.3 The Developer shall also provide a detailed list of equipment to be supplied with electric power, indicating type of equipment/load, voltage, No. of phases, capacity in kW or kVA and applicable overall diversity factor.

10.1.4 The Developer shall take the necessary steps to protect and keep safe any service corridor passing nearby the plot. In case of damage, the Developer shall report immediately to the Authority in concern.

10.1.5 Developers shall make provisions for mains power out lets in the ETS room and in the telecom room in each building to enable connectivity of ETS room equipment to DWC District Cooling Central plants. The consultants shall contact the Service Authority (DWC-DuServe) for actual power requirements.

10.2 Application to the Service Authorities (DEWA)

10.2.1 Upon signing a lease for the allocated plot, the Developer shall apply to the Service Authority (DEWA-Electrical) for his power connection and for the installation of his own meter.

10.2.2 The Consultant must apply, prior to commencing any construction works for the following:

a. No Objection Certificate (N.O.C) from the Service Authorities (DM, DEWA).

10.2.3 The Contractor shall submit to the Service Authority (DEWA-Electrical) “Inspection Certificates” in accordance with the Service Authority (DEWA-Electrical) prescribed forms. All installations and equipment installed therein shall be subject to the Service Authority (DEWA-Electrical) inspection, testing and final approval before connecting the electric supply. All relevant documents shall be submitted to the Authority after the Service Authority (DEWA-Electrical) final approval.

10.3 Power Supply Connection

10.3.1 The point of supply to the allocated plot shall be decided by the Service Authority (DEWA-Electrical), and shall be made available at one location within the plot/project, unless otherwise approved by the Service Authority (DEWA-Electrical).

10.3.2 Power supply from the Service Authority (DEWA-Electrical) network shall be subject to terms, fees and tariffs issued by the Service Authority (DEWA-Electrical).

10.3.3 Power supply shall be provided at 230/400V, 50Hz, 3-phase 4-wire with separate neutral and protective conductor, where the total connected load does not exceed 400 kW.

10.3.4 In general, if the total connected load exceeds 400 kW, provision shall be made within the plot/building for the Service Authority (DEWA-Electrical) substation based on the Service Authority (DEWA-Electrical) approved details for the proposed substation. In some circumstances a substation may be required if the total load is less than 400kW.

10.3.5 The Developer main distribution board and associated metering shall be installed in locations to which access is available at all times. Prior approval shall be obtained from the Service Authority (DEWA-Electrical).

10.3.6 Space clearance around the electrical equipment shall be provided for safe operation, inspection, testing and maintenance, according to the Service Authority (DEWA-Electrical) Regulations.

10.3.7 Electrical rooms and substations shall be properly ventilated/air conditioned, as applicable. In case, electronic equipment shall be installed within the electrical rooms or substations, these shall be air conditioned to a max temperature of 26 deg. C.

10.3.8 The Developer shall be responsible for terminating the incoming supply cable at the Service Authority (DEWA-Electrical) metering cabinet, in accordance to the Service Authority (DEWA-Electrical) Regulations.

10.3.9 All tariff metering shall be provided by the Service Authority (DEWA-Electrical) and restricted to one for each consumer, unless otherwise approved by the Service Authority (DEWA-Electrical).

10.3.10 If continuity of power is essential for the safe operation of the equipment, it shall be the responsibility of the Developer to provide stand-by power supply in the event of mains power supply failure. The stand-by generators shall not be synchronized with the Service Authority (DEWA-Electrical) network at any time. Proper electrical and mechanical interlocks between breakers shall be provided. Generator installation shall be permitted prior to the Service Authority (DEWA-Electrical) approval.

10.3.11 Generator noise level shall not exceed 75 dBA at 1m outside the generator enclosure. Generator characteristics and specifications shall comply with ISO Standards and comply with local Authorities for environmental restrictions.

10.3.12 Service Authority (DEWA-Electrical) Substation requirements shall be according to the Service Authority (DEWA-Electrical) - General Conditions for providing 11kV Supply to Consumer's Plots and subject to Service Authority (DEWA-Electrical) approval.

10.3.13 All electrical installations shall be provided with separate earthing. The consumer's earthing system shall be connected to the Service Authority (DEWA-Electrical)'s earthing system subject to the Service Authority (DEWA-Electrical) approval.

10.4 Installation Requirements

10.4.1 All the Electrical installations shall follow and comply with the Service Authority (DEWA-Electrical) Rules and Regulations for electrical installations, IEE Wiring Regulations, and International Electrotechnical Commission (IEC) Codes.

10.4.2 Temporary power supply for plot construction shall be the responsibility of the Developer and subjected to the Authority approval.

10.4.3 The Developer shall maintain a power factor not less than 0.9 for all installation. The Developer shall consider the use of energy efficient lamps, equipment, appliances and motors.

10.4.4 The Developer shall install an approved fire detection and alarms system in all his constructions. Fire Alarm system shall be installed in the premises in compliance to NFPA Code or relevant British Standards and according to the local Authorities jurisdiction.

10.4.5 The Developer shall install 10cm UPVC ducts (number of ducts shall depend on the facility requirements) to connect the plot with the outside service corridor for the telecommunication, control and fire alarm detection wiring.

10.5 Completion Certificate

10.5.1 The Developer shall ensure the following for the Service Authorities inspection:

- The main electrical incoming supply arrangement is completed.
- The electrical installation inside the plot is completed.
- Fire detection and alarm system installation is completed.

10.5.2 On completion of satisfactory inspection by the Service Authorities and the Authority, a Building Completion Certificate shall be issued. This certificate is a pre-requisite for the connection of electrical installations to the Service Authority (Electrical) power supply grid.

11. TELEPHONE AND TELCOM INSTALLATION

11.1 Main Guideline for Structured Cabling System (SCS)

11.1.1 All the Structure Cabling Installations shall follow the Service Authority (DWC) Standards. Refer to Appendix ( )

11.1.2 The detailed design along with the materials to be used shall be submitted to the service authority (DWC) for approval.

11.1.3 The consultant must apply prior to commencing any construction works for the No Objection Certificate (N.O.C) from the service authority (DWC). See Appendix ( ).

11.1.4 The connection to the outside service corridor should be as per the service authority (DWC) requirements and subject to its approval.

11.1.5 Adequate size telecom room should be allocated as per the service authority (DWC) requirements, with 24 hours access to the service authority (DWC).

11.1.6 Warranty period shall start after issuing of the completion/ Acceptance certificate. See Appendix ( ).

11.1.7 Developers shall make provisions for cable connectivity between the Energy Transfer Station (ETS) Rooms and Telecom room in each building to enable connectivity of ETS room equipment to DWC District Cooling Central plants.

12. LIGHTING INSTALLATION

12.1 All lighting installations shall comply with the requirements of CIBSE (Chartered Institution of Building Services Engineers). The Developer shall consider the use of energy efficient lamps and fixtures.

12.2 Safety and emergency light fittings shall be installed in electrical switch rooms, operational area, entrances and escape routes, as per NFPA requirements or relevant British Standards and local codes.

12.3 The outdoor lighting luminance levels shall be in accordance with CIE (International Commission on Lighting). The lighting levels below are an indication of the minimum required lighting levels for different areas:

- Roads Primary/Secondary 2.0cd/m^2/1.0cd/m^2
- Outdoor areas 25 Lux
- Stores/stairs 150 Lux
- Lobbies 200 Lux
- Offices 500 Lux
- Industrial areas (requiring accuracy) 300 Lux
- Industrial areas (requiring extreme accuracy) 500 Lux

12.4 The outdoor lighting shall be designed to minimize the light pollution in the area. Outdoor lighting design shall be submitted to the Authority for approval. Specific requirements for the outdoor lighting shall be followed, as per the Authority requirements.

Use of energy efficient lighting is encouraged by authority.