Riyadh Integrated
Special Logistics Zone
المنطقة الخاصة اللوجستية المتكاملة

Special Integrated Logistics Zone

Detailed Masterplan: Tenants' Design Guidelines – 24/02/2025

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01.
Introduction

Introduction

Purpose of the Guide

This **Master Planning Guideline** document serves as a comprehensive framework for shaping the built environment within the **Riyadh Special Integrated Logistics Zone (SILZ)**. It lays out the fundamental principles that underpin the design of all developments in this zone.

The Development Design Guidelines has been prepared to **inform potential tenants in KKIA-SILZ of the design intent and regulatory constraints** on a particular parcel or parcels for the development.

Embracing a **multidisciplinary design approach**, this guideline harmoniously integrates all pertinent components of the master plan. This approach fosters a holistic and thorough design process, emphasizing critical elements such as land use, building design, open spaces, transportation infrastructure, and utility services proposals.

The main purpose of the Guide is to assist potential tenants and to ensure that development proposals conform to this vision and plan. Investors are required to use the Development Design Guidelines as a foundation on which to build their facilities within the allocated plots. It is intended for the **Guide to be read in conjunction with the master plan** and to be used by relevant agencies involved in the review, evaluation and approval process.

We encourage developers and consultants to strive for excellence by meeting or surpassing the minimum requirements outlined in this guideline. In doing so, we can ensure that developments within SILZ contribute to the zone's overarching vision of efficiency, sustainability, and functionality.

Introduction
Navigating SILZ Guidelines

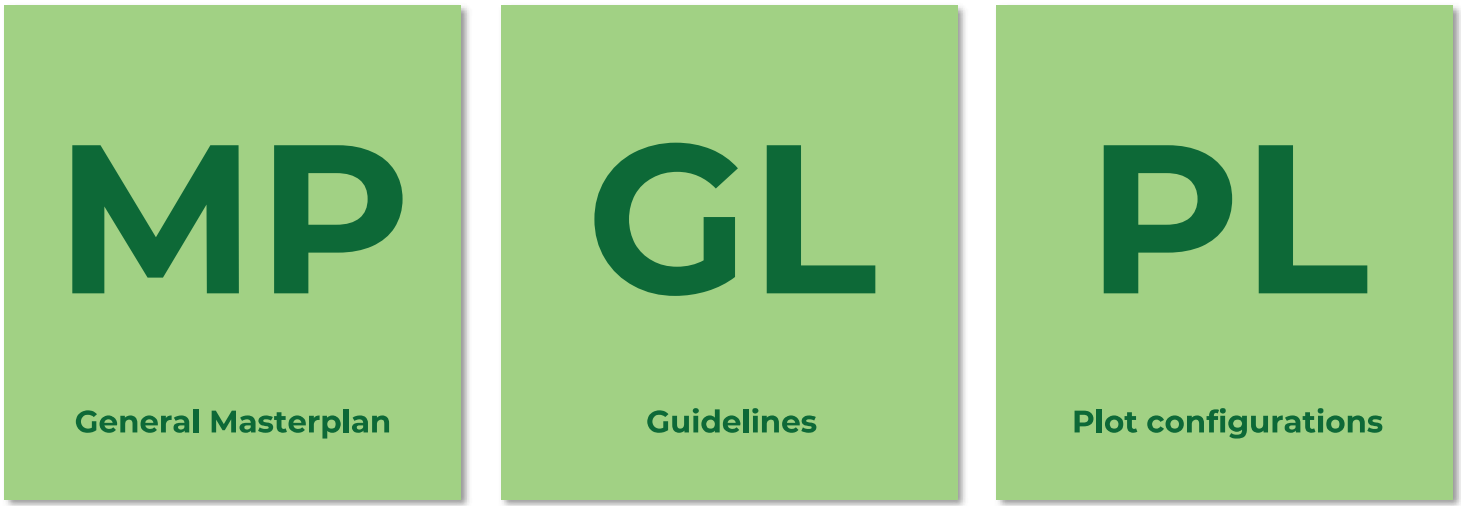
The purpose of this guideline is to guide the development of the master plan and facilitate developers in the design and approval processes.

The guideline consists of three parts:

I. **General Master Plan:** this section provides general overview of Masterplan and Land use classification based on local regulation.

II. **Guidelines:** this section summarizes the design requirements that need to be complied with when developing the master plan

III. **Plots configurations**: this section provides to Tenants some possible plots configurations of each plot typology.



Introduction
Navigating SILZ Guidelines

The proposed guidelines are classified in two main categories:

- Requirements
- Recommendations

Requirements are related to specific regulations (e.g. Fire regulation) or to specific fixed elements of the overall SILZ Masterplan (e.g. plot access).

Recommendations are proposed to enhance the overall functionality, safety, and efficiency of the leased space.

Requirements

Mandatory guidelines

- ✓ **Regulations**
- ✓ **Masterplan fixed elements**

Recommendations

Discretionary guidelines

Introduction

Reference Codes and Guidelines

Source: AASHTO-Geometric Design Highway & Streets-7th edition 2018

This section gives references that apply throughout the Development Guidelines Report.

The Development Design Guidelines concerns the Planning, Architectural style, design and treatment of open spaces and facilities and **does not replace official regulatory codes of the Authorities**, which in their most current editions will always precede this document.

Additional references to regulations and codes are included within each chapter.

Subject	Source	Year	Document Name
General	Saudi Building Code (SBC)	2018	Saudi Building Code – General SBC 201-CR
General	Saudi Industrial Property Authority (MODON)	2019	Building Standards and Requirements in Industrial Cities
General	Ministry of Municipal and Rural Affairs (MOMRA)	2019	Requirements for warehouses, stores and workshops (اشتراطات المستودعات والمخازن والورش)
Parking	Ministry of Municipal and Rural Affairs (MOMRA)	2023	MOMRA Parking Lots Design Guide
Architecture	Riyadh Development Authority (RDA)	2019	Salmaniah Architecture Guidelines
Electrical	Saudi Building Code (SBC)	2018	Saudi Electrical Code SBC 401-CR
FLS	Saudi Building Code (SBC)	2018	Saudi Fire Code SBC 801-CR
FLS	NFPA (National Fire Protection Association)	2022	NFPA 10 – Standard for Portable Fire Extinguishers
FLS	NFPA (National Fire Protection Association)	2022	NFPA 13 – Standard for the installation of Sprinkler Systems
FLS	NFPA (National Fire Protection Association)	2019	NFPA 14 – Standard for the installation of standpipe and Hose systems
FLS	NFPA (National Fire Protection Association)	2022	NFPA 20 – Standard for the installation of stationary pumps for Fire protection
FLS	NFPA (National Fire Protection Association)	2022	NFPA 72 – National Fire Alarm and Signaling Code
FLS	NFPA (National Fire Protection Association)	2021	NFPA 92 – Standard for Smoke Control Systems

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Subject	Source	Year	Document Name
Irrigation Network	Saudi Building Code (SBC)	2018	Saudi Sanitary Code SBC 701-CR
Mechanical	Saudi Building Code (SBC)	2018	Saudi Mechanical Code SBC 501-CR
Road	AASHTO	2018	AASHTO-Geometric Design Highway & Streets-7th edition 2018
Road	Roads General Authority	2023	Saudi Highway Code
Universal access	Universal Accessibility Built Environment Guidelines for the Kingdom of Saudi Arabia	2010	Prince Salman Center for Disability Research
Universal access	Americans with Disabilities Act (ADA)	2010	ADA Standards for Accessible Design
Domestic Water	National Water Commission		NWC: Domestic Water Design Guidelines
Domestic Water	Ministry of Water and Electricity		Standard Technical Specifications for Water Networks
Domestic Water	Saudi Civil Defense		Saudi Civil Defense Standard for Firefighting
Power Supply	Saudi Electricity Company (SEC)		SEC Distribution Planning Standard DPS-01

Introduction

SILZ Reference documentation

The SILZ Development Guidelines Report is **intended to be read in conjunction with the following Master Plan documentation** that will be made available to the tenants by SILZ.

(1) The FLS report was part of the CMP report and was not submitted as a separate document.

(2) The geotechnical report was not submitted under the new scope, it was submitted as part of the 2021 DMP.

DOCUMENT NAME	DOCUMENT CONTENT
SILZ-DESI-CP10-D1B-DDS-SFSP-ARGN-1002-R03-Masterplan	Detailed Master Plan (overall plan, general layout and land use distribution, access system, road layout, parking, internal mobility, wayfinding and security strategy)
SILZ-DESI-CP10-D1A-REP-TFSP-0001-R03-Phase 1 Blocks and Plots	Plot parcellation plan showing the BUA, FAR , setbacks , coordinates, key plan for each plot.
SILZ-DESI-CP10-D1A-REP-SFSP-0001-R01-CMP Report	Masterplan FLS Report (1)
20-1078-2 Final Phase-II Report (ILBZ, KKIA-Riyadh;SKP)	Masterplan Geotechnical report (2)
SILZ-DESI-CP10-D4B-DDS-SFSP-CVRD-5003-R02-Cut and fill plan	Masterplan cut and fill plan / enabling works as-built drawings
SILZ-DESI-CP10-D2B-DDS-SFSP-0001-R02-Landscape Detailed Design	Adjacent roads layouts (roads layouts, profiles, asphalt levels, street curbs, hardscape, softscape, and site furniture).
SILZ-DESI-CP10-D4B-DDS-SFSP-0001-R02-Roads Detailed Design	Adjacent roads layouts (roads layouts, profiles, asphalt levels, street curbs, hardscape, softscape, and site furniture).
SILZ-DESI-CP10-D5B-DDS-SFSP-0001-R02-Detailed Infrastructure Utilities	Dry and wet utilities infrastructure layouts for tie-in points with levels and general details for: • Mechanical (Stormwater, Sewage, Domestic / fire water, Irrigation water) • Electrical: (Telecom, Low current, MV)
SILZ-DESI-CP10-D1A-DDS-SFSP-0003-R00-Sustainability Guidelines	Sustainability guidelines for Tenants buildings

Introduction
Definitions

This section gives common definitions that apply throughout the Guidelines Report.

Basement: A story that is not a story above grade plane. Story above grade plane refers to any story having its finished floor surface entirely above grade plane, or in which the finished surface of the floor next above is:
1. More than 1.8 m above grade plane; or 2. More than 3.6 m above the finished ground level at any point. (Saudi Building Code definition).
Warehouse operations are not allowed in the basement of SILZ tenants plots, while technical buildings / utilities and car parking is allowed but not included in the F.A.R. calculation. Tenant are allowed to have underground parking in the basement in line with local codes and regulation.

Building area: The area included within surrounding exterior walls (or exterior walls and fire walls) exclusive of vent shafts and courts. Areas of the building not provided with surrounding walls shall be included in the building area if such areas are included within the horizontal projection of the roof or floor above. (Saudi Building Code definition).

Built-up Area: Total constructed area in a building or structure measured from the surrounding exterior walls (or exterior walls and fire walls) of the building, inclusive of balconies, terraces and other projections, as well as any other covered spaces such as covered parking structures, circulation corridors, loading/unloading bays, service floors, above-ground technical areas and any other permanent structures on plot. As confirmed by Riyadh Amana, basements are not included in the Built-up Area.
BUA Calculation: Above-ground technical areas shall be included in the BUA, while Underground technical areas shall be excluded.

Diagonal parking: are parking spaces arranged at an angle to the curb or the edge of the parking area. Vehicles are parked at an angle, typically 45 or 60 degrees, to the direction of traffic flow.

Floor Area Ratio: The Foor Area Ratio of a building or other structure on any lot is determined by dividing the Built-up Area of such building by the area of the lot on which it is located. When more than one building or structure is located on lot then the floor area ratio is determined by dividing the total Built-up Area of all buildings or structure by the lot area.
Floor Area Ratio = Built-up Area/ Plot Area. The maximum Floor Area Ratio (F.A.R) is 75%.

Gross Floor Area: The floor area within the inside perimeter of the exterior walls of the building under consideration, exclusive of vent shafts and courts, without deduction for corridors, stairways, closets, the thickness of interior walls, columns or other features. The floor area of a building, or portion thereof, not provided with surrounding exterior walls shall be the usable area under the horizontal projection of the roof or floor above. The gross floor area shall not include shafts with no openings or interior courts. (Saudi Building Code definition). Parking structures and underground technical areas are excluded from Gross Floor Area calculation.

Hardscape: Hardscape refers to the non-living, hard, and man-made features in outdoor environments. This includes elements such as pathways, driveways, patios, fences, and other structures made of concrete, stone, wood, metal, or other durable material.

Loading and unloading areas: areas designated for loading and unloading works according to the needs of the warehouse, and they may be separate from each other or combined in one area for unloading raw materials and loading finished products.

Introduction
Definitions

Loading and unloading docks: raised platforms off the ground adjacent to the handling areas, from trucks to warehouses, to facilitate loading and unloading operations.

Loading and unloading bays: alternatives to loading and unloading docks and areas, in which trucks are lined up between consecutive loading and unloading docks perpendicular to the warehouse.

Longitudinal parking: Longitudinal or parallel parking refers to a parking configuration in which vehicles are parked parallel to the side of a roadway or parking area.

Masterplan: refer to the Special Integrated Logistics Zone Masterplan

Mezzanine floor: It is an intermediate floor between the floor and the ceiling of any void, and its area does not exceed one-third of the area of the floor in which it is located.

Parking structure: is a multi-stories facility designed to accommodate a larger number of vehicles in a vertical arrangement. These structures consist of multiple floors with ramps or lifts that allow movements between levels.

Setbacks: refer to the minimum required distance between the building or structure and the property line or other designated boundary. Setbacks are intended to serve various purposes, including ensuring safety, providing adequate spacing between structures, allowing for proper ventilation and light, and maintaining the aesthetic character and open space of an area.

Underground utility buildings/Tanks are permitted with a minimum 1m setback from the plot limit for all technical underground structural works. The tenant must ensure the stability of adjacent structures, including fences, buildings, and the SILZ walkway, by adhering to OSHA Excavations regulations or implementing shoring where required to prevent settlement and avoid damage to nearby structures.

Site Coverage (or Building ratio): The percentage of the result of dividing the area of the maximum permitted building on the ground floor in square meters by the total area of the site in square meters after planning. (MOMRA definition). The minimum site coverage is 40% and the maximum site coverage is 60%.
Site Coverage = (Built-up Area (on ground floor) / Total Plot Area) × 100

Softscape: Softscape encompasses the living, horticultural elements in outdoor design. This includes plants, trees, flowers, grass, soil, and other organic components.

Surface parking: refers to an open-air parking area situated on the ground level. It is characterized by parking spaces delineated by painted lines on the ground, without the presence of structures or levels.

Vertical parking: Perpendicular or vertical parking is a parking arrangement in which vehicles are parked at 90° to the curb or the edge of the parking area. Cars are positioned side by side, with their front or rear ends facing the traffic flow.

Introduction

Acronyms and abbreviations

This section lists common acronyms and abbreviations used throughout the Development Guidelines Report.

ADA	Americans with Disabilities Act
BUA	Built Up Area
CMP	Concept Master Plan
DMP	Detailed Master Plan
EV	Electric Vehicle
FACP	Fire Alarm Control Panel
FAR	Floor Area Ratio
FLS	Fire and Life Safety
GACA	General Authority of Civil Aviation
GDGC	General Directorate of Civil Defense
GFA	Gross Floor Area
HV	High Voltage
KKIA	King Khalid International Airport
KSA	Kingdom of Saudi Arabia
LV	Low Voltage
MEP	Mechanical, electrical and plumbing
MODON	Saudi Authority for Industrial Cities and Technology Zones
MOMRA	Ministry of Municipal and Rural Affairs
MV	Medium Voltage
NA	Net area
NFPA	National Fire Protection Association
PV	Photovoltaic
PRM	People with Reduced Mobility
RCRC	Royal Commission for Riyadh City
RDA	Riyadh Development Authority
ROW	Right of Way
SBC	Saudi Building Code
SEC	Saudi Electricity Company
SC	Site Coverage
SCADA	Supervisory Control and Data Acquisition
SILZ	Special Integrated Logistics Zone

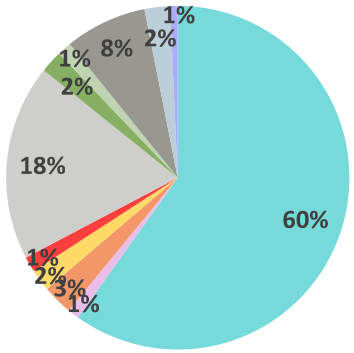
02.

General Masterplan &

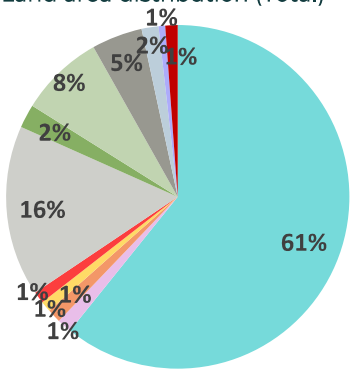
Tenants plots typologies

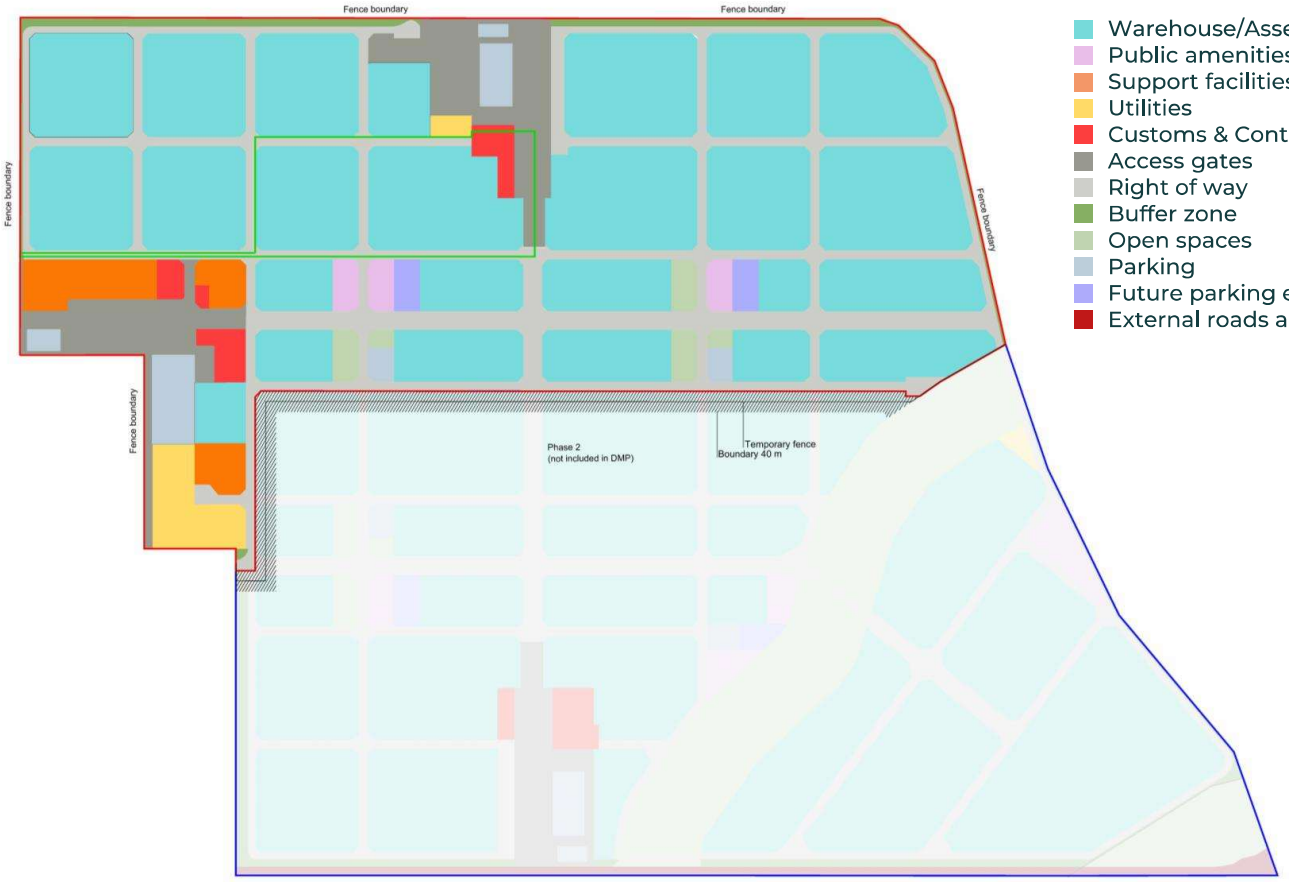
Masterplan
Land use

Land area distribution (Phase 1)



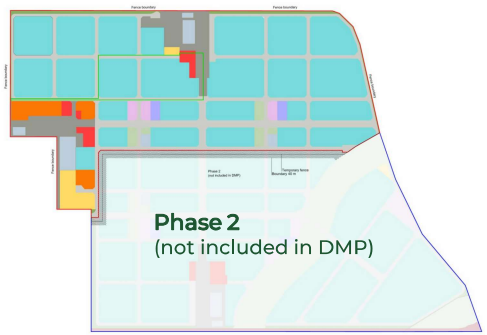
Land area distribution (Total)





Masterplan
Area schedule

The comprehensive schedule detailing the Land Area and Built-Up Area (BUA) for Phase 1 is available in the table provided.



Land use	Land area (sqm) Phase 1		BUA (sqm) Phase 1	
	(%)	(sqm)	(%)	(sqm)
Warehouses, light industry & assembly	**59,86%**	**816.200**	**76,55%**	**612.150**
Warehouses		\	51%	312.197
Assembly Facilities		\	31%	189.767
Support Offices		\	18%	110.187
Public Amenities	**1,07%**	**14.637**	**2,37%**	**18.988**
Retail, F&B (cafè and restaurant), Offices (Shell and Core)		9.758		15.970
Mosque		4.879		3.018
Supporting Facilities	**2,86%**	**38.929**	**2,05%**	**16.380**
Maintenance center		9.098		2.700
Fire station and paramedical unit		4.861		1.480
Shuttle depot (maintenance and washing facilities and info office)		3.118		1.200
Waste islands		21.852		11.000
Utilities	**2,05%**	**27.957**	**1,89%**	**15.152**
Water tank and irrigation tank		8.414		3.452
Sewage lift station		3.280		500
Substation		16.263		11.200
Customs & Control	**1,47%**	**20.075**	**1,23%**	**9.797**
Customs facilities		18.723		5.732
ILBZ Control and Visitors center		1.352		4.065
Right of way	**18,42%**	**251.175**	**0,00%**	**0**
Buffer zone	**2,11%**	**28.763**	**0,00%**	**0**
Open space	**1,32%**	**17.977**	**0,00%**	**0**
Access gates	**7,74%**	**105.471**	**0,00%**	**0**
Parking	**2,37%**	**32.264**	**3,80%**	**30.400**
Future parking expansion	**0,73%**	**10.000**	**12,11%**	**96.800**
External roads	**0,00%**	**0**	**0,00%**	**0**
SILZ		**1.363.448**		**799.667**

Masterplan
Block typologies

SILZ leasable land area is subdivided into blocks. Blocks range from a minimum of 10,000 sqm to a maximum of 57,000 sqm in Phase 1. Blocks are identified by their size, plot configuration layout, and location along the road network.

All blocks are able to accommodate plots of 5,000 sqm, 10,000 sqm.

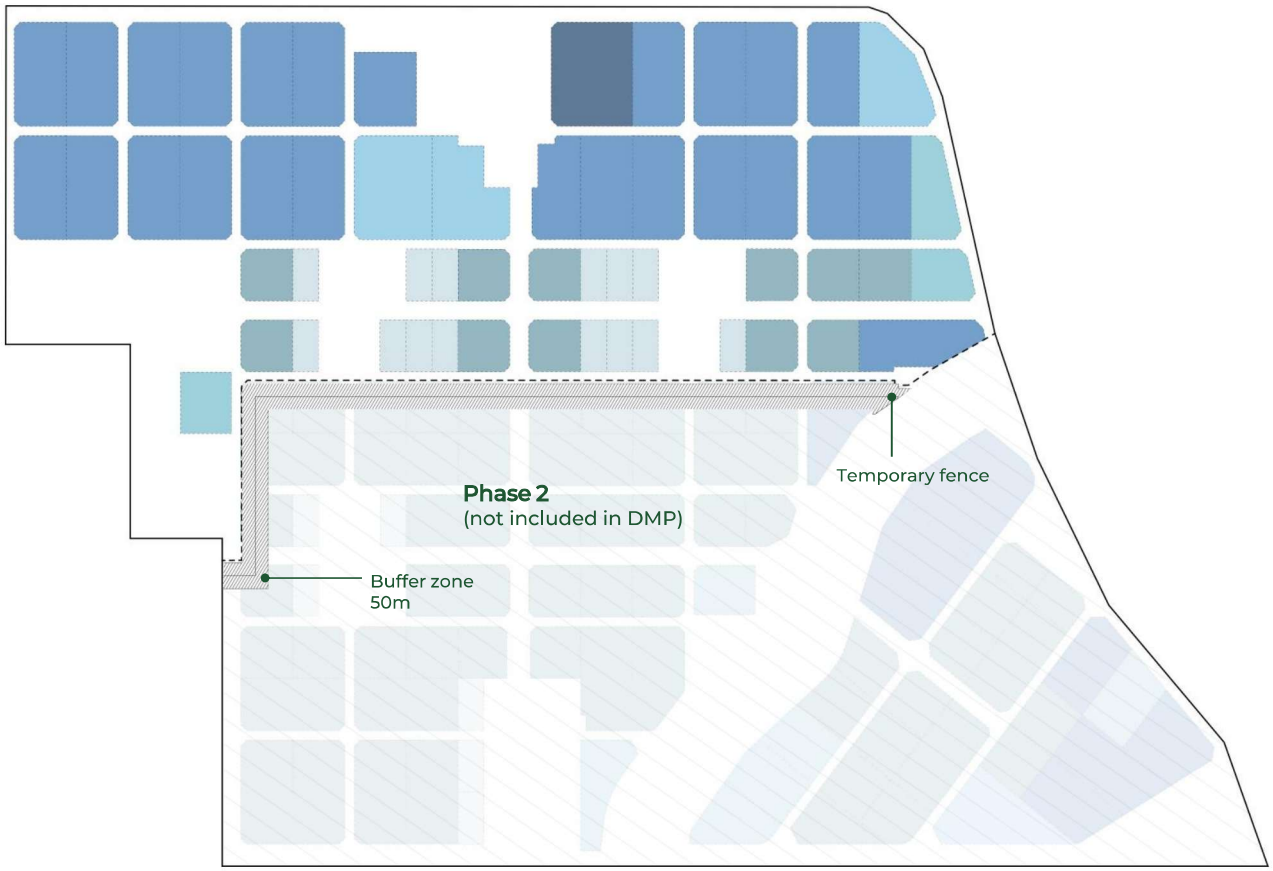
- 0-10Ksqm
- 11-20Ksqm
- 21-30Ksqm
- 31-40Ksqm
- ≥ 40Ksqm

Masterplan
Plot tenant mix

All blocks are able to accommodate plots of 5,000 sqm, 10,000 sqm and 20,000 sqm.

Recommended plots allocation is provided in the image on the right. It is recommended to locate the 5,000 sqm plots closer to the main roads to provide a smooth transition towards the bigger plots.

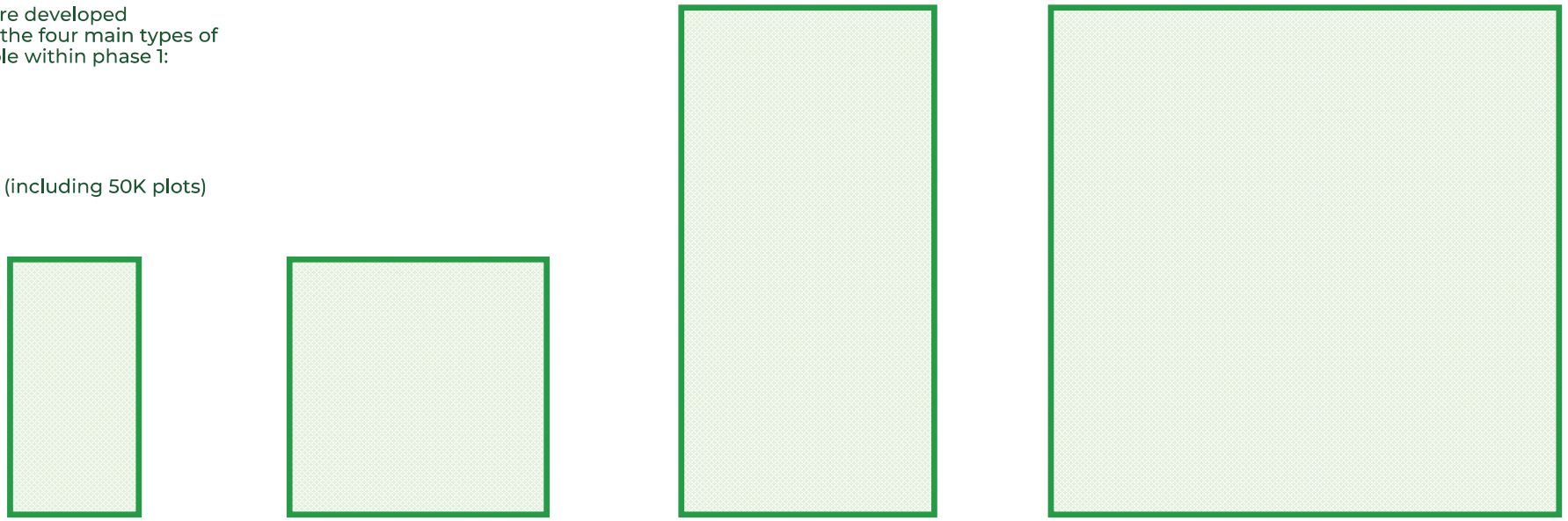
- 0-5Ksqm
- 6-10Ksqm
- 11-15Ksqm
- 16-20Ksqm
- 21-30Ksqm
- 31-40Ksqm



Masterplan
Plots typologies

Guidelines are developed considering the four main types of plots available within phase 1:

- 5K plots
- 10K plots
- 20K plots
- 40K plots (including 50K plots)



5k plot

10k plot

20k plot

40k plot

03.
Guidelines

03.1

Requirements Checklist

Guidelines
Checklist

This section presents the comprehensive checklist for Tenants Guidelines, categorized into two sections:

- **Mandatory Requirements**: These are non-negotiable elements that tenants must strictly adhere to for compliance with the established guidelines. Failure to meet these requirements may result in regulatory violations.
- **Recommended Requirements**: While not obligatory, adherence to these recommendations is highly encouraged to enhance the overall functionality, safety, and efficiency of the leased space.

Requirements

Mandatory guidelines

✓ **Regulations**

✓ **Masterplan fixed elements**

Recommendations

Discretionary guidelines

Guidelines

Checklist: Plot configuration

Guidelines Checklist		MANDATORY	RECCOMENDED
Plot configuration			
Site Coverage	Minimum Site Coverage 40%	✓	
Site Coverage	Maximum Site Coverage 60%	✓	
Floor Area Ratio	Floor Area Ratio 0.75	✓	
Land use	Maximum B.U.A. for administrative office 30%	✓	
Built-Up Area	Above-ground technical areas are included in the B.U.A.	✓	
Built-Up Area	Underground technical areas are not included in the B.U.A.	✓	
Built-Up Area	Parking areas (above-ground or underground) are not included in the B.U.A.	✓	
Basement	Warehouse operations are not allowed in the basement floors	✓	
Basement	Utilities/Technical buildings and parking areas are allowed in the basement floors.	✓	
Setbacks	Minimum 6 meters setbacks on all sides	✓	
Setbacks	2.5 meters setbacks allowed on chamfered corners	✓	
Setbacks	The min. setback of building should be increased from 6m to 13.5m on the side where utilities, guards' rooms, and parking areas are constructed. Additionally, 100cm green buffer area with trees must be included.	✓	
Setbacks	Underground utility buildings /tanks are permitted with a minimum 1m setback from the plot limit		
Setbacks	Align with allowed facilities and uses in the setback areas	✓	

Guidelines
Checklist: Building

Guidelines Checklist		MANDATORY	RECCOMENDED
Building			
Heigth	Maximum building height 20 meters	✓	
Heigth	Minimum building height 7.5 meters (from ground floor to lowest point of the ceiling)	✓	
Heigth	Max height for utilities buildings and guardhouse within the setback is 4.5 meters from adjacent walkway	✓	
Heigth	Minimum distance of 50 cm from highest pallet level and lowest point of hanging fixed equipment	✓	
Heigth	Plot excavation is recommended within plot buildable area.	✓	
Mezzanine floor	Mezzanine floor does not exceed one-third of the area of the floor	✓	
Mezzanine floor	Mezzanine floor is used for same use typology as of the original use of the warehouse	✓	
Architecture	Adopt Salmaniah urban and architectural guidelines	✓	
Architecture	The design is simple, elegant and modern in architectural articulations	✓	
Architecture	Ornamentation to be avoided	✓	
Architecture	Enhance environmental performance of facilities through passive strategies	✓	
Facade	All Facilities are recommended to have architecturally addressed facades		✓
Facade	Architectural details should be homogeneous		✓
Facade	Keep the local tradition of creating plain, calm and elegant facades.		✓

Guidelines
Checklist: Building

Guidelines Checklist		MANDATORY	RECCOMENDED
Building			
Facade	The main entrances should be visible and clearly marked		✓
Facade	Office component to be placed at the front of the facility		✓
Facade	Extensive glass curtain wall construction should be avoided		✓
Facade	Southern, eastern and western facades should be designed to provide adequate shading		✓
Roof	Skylights opening ratio not exceeding 6% of overall roof area		✓
Roof	Higher thermal mass materials are recommended for the roof structure		✓
Roof	Flat to low-slope roofs are to be adopted (maximum slope of 15% is recommended)		✓
Roof	PV panels to be installed on roofs covering no less than 60% of the overall roof area		✓
Materials and Texture	Good solid and durable materials are preferred		✓
Materials and Texture	The color palette indicates the use of light earthy tones		✓

Guidelines

Checklist: Open Spaces

Guidelines Checklist		MANDATORY	RECCOMENDED
Open Spaces			
Loading/Unloading areas	Provide minimum required number of loading and unloading areas	✓	
Loading/Unloading areas	Recommended to adhere to the proposed spacing and distances for the vertical loading docks		✓
Loading/Unloading areas	Recommended to adhere to the proposed spacing and distances for the inclined loading docks		✓
Parking	On-street parking is strictly prohibited for all tenants. Each tenant must ensure that all parking requirements are accommodated within their designated plot boundaries.	✓	
Parking	Locate parking area near access points		✓
Parking	Locate parking area near the office frontage		✓
Parking	Separate parking area from the loading and unloading area		✓
Parking	Provide the minimum number of parking spaces	✓	
Parking	Additional parking spaces above the maximum limit should be reviewed with SILZ	✓	
Parking	Design stalls and aisles of parking areas in line with MOMRA regulations	✓	
EV charging	Provide at least 5% car park supply equipped with e-charging points (with a minimum of 2)	✓	
EV charging	Locate e-charging points close to parking and buildings entrances		✓
EV charging	Provide adequate space for vehicles charging		✓
EV charging	Make highly visible parking stalls for electric vehicles		✓

Guidelines

Checklist: Open Spaces

Guidelines Checklist		MANDATORY	RECCOMENDED
Open Spaces			
Parking Canopy	At least 50% of the car parking shall be covered with light-colored shading structures		✓
Parking Canopy	Canopy design should harmonize with the existing warehouse structure		✓
Parking Canopy	Photovoltaic solar panels can be placed on the car parking rooftop		✓
Van Parking	Provide the minimum number of Van parking spaces	✓	
Van Parking	Design Van parking stalls in line with recommended dimensions		
Vehicular circulation	Establish designated routes for trucks to access loading docks		✓
Vehicular circulation	Ensure vehicular connections between plot access points		✓
Vehicular circulation	Final level of inner roads shall not exceed level of the road asphalt by more than 35 cm		✓
Vehicular circulation	Ensure that vehicle access corridors have an unobstructed width of at least 6m	✓	
Pedestrian circulation	Establish clear pedestrian pathways between plot and building key points (access, entrances, parking, etc.)		✓
Pedestrian circulation	Clearly delineate pedestrian pathways from vehicular traffic to enhance safety		✓
Pedestrian circulation	Clearly identifying and signalizing safety zones for pedestrians		✓
Pedestrian circulation	Define and prominently display maximum speed limits within the plot		✓
Pedestrian circulation	Speed limit of 10 Km/h is recommended within plots		✓

Guidelines

Checklist: Open Spaces

Guidelines Checklist		MANDATORY	RECCOMENDED
Open Spaces			
Landscape	The area to be treated as greenery should be between 3% and 3.5% of the total plot area	✓	
Landscape	The greenery area should have low irrigation requirements	✓	
Landscape	This 3-3.5% should be designed with: - From 30% to 50% of the greenery has to be composed by green area. - The remaining portion (50% or more) of the greenery has to be composed by the coverage of the tree crowns (calculated as 16sqm/tree).		✓
Landscape	Locate landscape areas within the setback area		✓
Landscape	Locate landscape around the facilities to face main street frontages		✓
Landscape	The plants selection to comply with the species selected from the document: "Manual of AR Riyadh Plants" - High Commission for the development of AR Riyadh, 2014 -King Fahd National Library Cataloging-in-Publication Data (page 52)	✓	

Guidelines

Checklist: Plot Boundary

Guidelines Checklist		MANDATORY	RECCOMENDED
Plot Boundary			
Vehicular access	Tenants are required to strictly adhere to the plot access location and design as set out in the DMP.	✓	
Vehicular access	Access to plots is not allowed along primary network	✓	
Vehicular access	Plot access points to be located along local roads north-south	✓	
Vehicular access	5K and 10K plots can be designed with 1 access point, 20K and 40K plots with 2 access points	✓	
Vehicular access	60K plots can be designed with 2 access points, 80K plots with 4 access points and 200K with 6 access points	✓	
Vehicular access	Plot access must have a width of 27.9 m along the plot boundary	✓	
Vehicular access	Plot access must have a width of 45.4 m along the road curb	✓	
Vehicular access	Plot access must be designed with a turning radius of 15.3 meters	✓	
Vehicular access	Central island in the plot access with a width of 4.5 meters		✓
Pedestrian access	Provide at least one pedestrian access for each plot	✓	
Pedestrian access	For plots facing streets on more than 1 side, it is recommended to provide 2 pedestrian access to plot		✓
Pedestrian access	Recommended to located pedestrian access points on the office front side and near shuttle stops		✓
Fence	Height of fence and plot gates is 2.5 meters	✓	
Fence	Fence design must be modern and transparent (an opacity of maximum 50%)	✓	

Guidelines

Checklist: Universal Access

Guidelines Checklist		MANDATORY	RECCOMENDED
Universal access			
Accessible routes	The clear width of accessible routes should be a min. of 1.2m or 1.8m (if space is required for 2 wheelchairs)	✓	
Accessible routes	Passing spaces to be provided every 30 meters if clear width is less than 1.8m	✓	
Accessible routes	Running slope should not exceed 4% and Cross slope should not exceed 2%	✓	
Ramps	Ramp running slope should be between 1:16-1:25, and max. cross slope 1:50	✓	
Ramps	The maximum horizontal length of a ramp should not exceed 9 meters	✓	
Ramps	Landing areas (2.1 x 2.1m) should be provided at top and bottom of all ramps	✓	
Ramps	Intermediate landing area should be 1.8x1.8m on straight and L-shaped ramp	✓	
Ramps	Intermediate landing area should be 1.8x2.4m on U-shaped ramp	✓	
Lifts	The clear width between lift doors should be a minimum of 900 mm	✓	
Lifts	Minimum lift cab interior dimension should be 1.725m x 1.525m	✓	
Parking	Minimum number of PRM parking spaces to be provided. The number of PRM parking spaces depends on the total number of parking spaces. See page 97 to determine the required number.	✓	
Parking	PRM parking spaces to be designed according to provided dimensions	✓	
Compliance	Ensuring compliance with universal access requirements is the responsibility of the tenant AOR liability	✓	

Guidelines

Checklist: Wayfinding

Guidelines Checklist		MANDATORY	RECCOMENDED
Wayfinding			
Number and Brand	All numbers and codes to be visible from street/road view	✓	
Number and Brand	Numbering on entrance door should be present	✓	
Number and Brand	Technical numbering of warehouses to be included within the façade application.	✓	
Number and Brand	The tenants should take into consideration the upper area for their logos/brand name	✓	
Number and Brand	No free standing totem and roof top signs are allowed for identification	✓	
Number and Brand	Plot number to be clearly visible to the streets	✓	
Number and Brand	The brand of the warehouse/tenant to be clearly identified and not to conflict with the number	✓	
Number and Brand	All warehouse signage to require power provisions for it to provide backlighting to the signs	✓	
Built up channel letters	Built-up light box of 150 mm depth with an internal steel frame structure.	✓	
Built up channel letters	Front and back diffused acrylic with high quality 3M	✓	

03.2

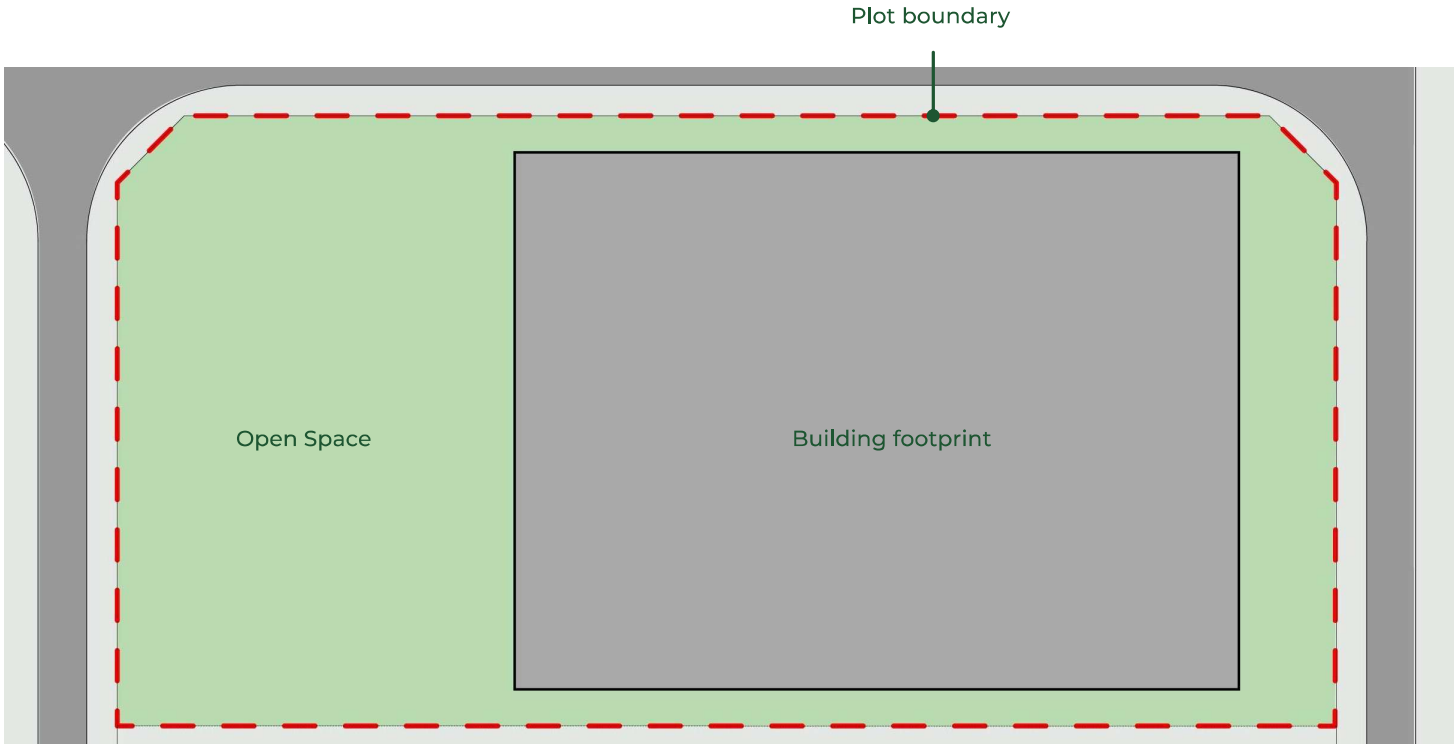
Plot configuration

Plot Configuration
Introduction

This section covers the percentages regarding plot land coverage.

1. **Building area:** The area included within surrounding exterior walls (or exterior walls and fire walls) exclusive of vent shafts and courts. Areas of the building not provided with surrounding walls shall be included in the building area if such areas are included within the horizontal projection of the roof or floor above. (Saudi Building Code definition).

2. **Open space**: it is defined as the area without any building structure. Open space includes traffic spaces (internal roads, parking lots space, loading and unloading area), landscape area (softscape and hardscape) and setbacks. The open space area can vary between 40% and 60% out of the land area.



Plot Configuration

Site Coverage and Floor Area Ratio

- Minimum Site coverage 40% ✓
- Maximum Site coverage 60% ✓
- Floor Area Ratio 0.75 ✓

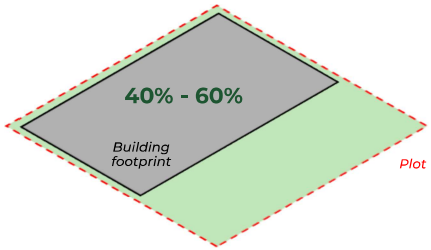
Tenants are advised that the permissible **building footprint** falls within the range of 40% to 60%.

These guidelines are established to maintain a balanced approach to development, ensuring that tenants optimize land use while meeting the minimum standards.

For Warehouse tenants plots, it is stipulated that the **Floor Area Ratio** should not exceed 0.75. All warehouse operations, including manufacturing, assembly, offices, and repair shops, contribute to the F.A.R.. This applies universally, encompassing structures of any material (cementitious or metallic) and all floors, including basements, ground floors, and mezzanines. However, it's important to note that all car parks, whether at grade level or multistorey, are exempt from F.A.R. calculations.

Site Coverage (or Building ratio)

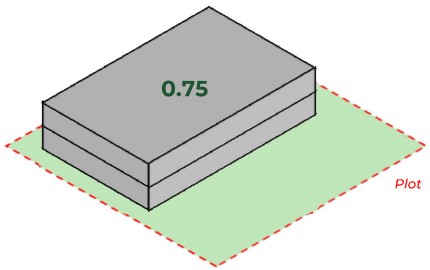
The minimum allowable coverage is 40%, and the maximum is 60%.



Site Coverage = (Built-up Area (on ground floor) / Total Plot Area) × 100

Floor Area Ratio F.A.R.

The Floor Area Ratio should not exceed 0.75



Floor Area Ratio = Built-up Area / Plot Area

Plot Configuration

Land use mix

Maximum B.U.A. for administrative office 30% ✓

Tenants are hereby informed that the leasable plots are designated for specific land uses to ensure optimal functionality and compliance with zoning regulations. The permitted land uses within these plots include:

- **Warehouses**
- **Light Industry & Assembly**
- **Support Offices**

Warehouses	Light Industry & Assembly	Support Offices
The primary purpose of the leasable plots allows for the construction and operation of warehouses, facilitating the storage and distribution of goods.	Tenants are permitted to engage in light industrial activities and assembly processes within their designated plots, adhering to safety and environmental standards.	The establishment of support offices is allowed, providing a space for administrative and managerial functions related to the operational activities within the plot.
Masterplan B.U.A. distribution: 51%	Masterplan B.U.A. distribution: 31%	Masterplan B.U.A. distribution: 18%
		Maximum B.U.A. It is permitted to establish administrative offices not exceeding 30% of the site area, taking into account the application of all safety requirements in accordance with the requirements of the Saudi Building Code.

Plot Configuration
Built-Up Area

This table outlines the permitted functions for different floors in the building, specifying their inclusion in the Built-Up Area (B.U.A.).

Warehouse operations, including manufacturing, assembly, offices, and repair shops, are not allowed in the underground floor. They are allowed and included in the Built-Up Area (B.U.A.) on the ground floor and mezzanine or upper floors.

Utilities and technical buildings, such as pump-up rooms and substations, are allowed in the underground floor but are not included in the B.U.A. They are also allowed and included in the B.U.A. on the ground floor but are not permitted on mezzanine or upper floors.

Covered parking structures are allowed in underground floor and on the ground floor, but they are not included in the B.U.A. On mezzanine or upper floors, covered parking is allowed only if it is a multistory car park, and it is not included in the B.U.A.

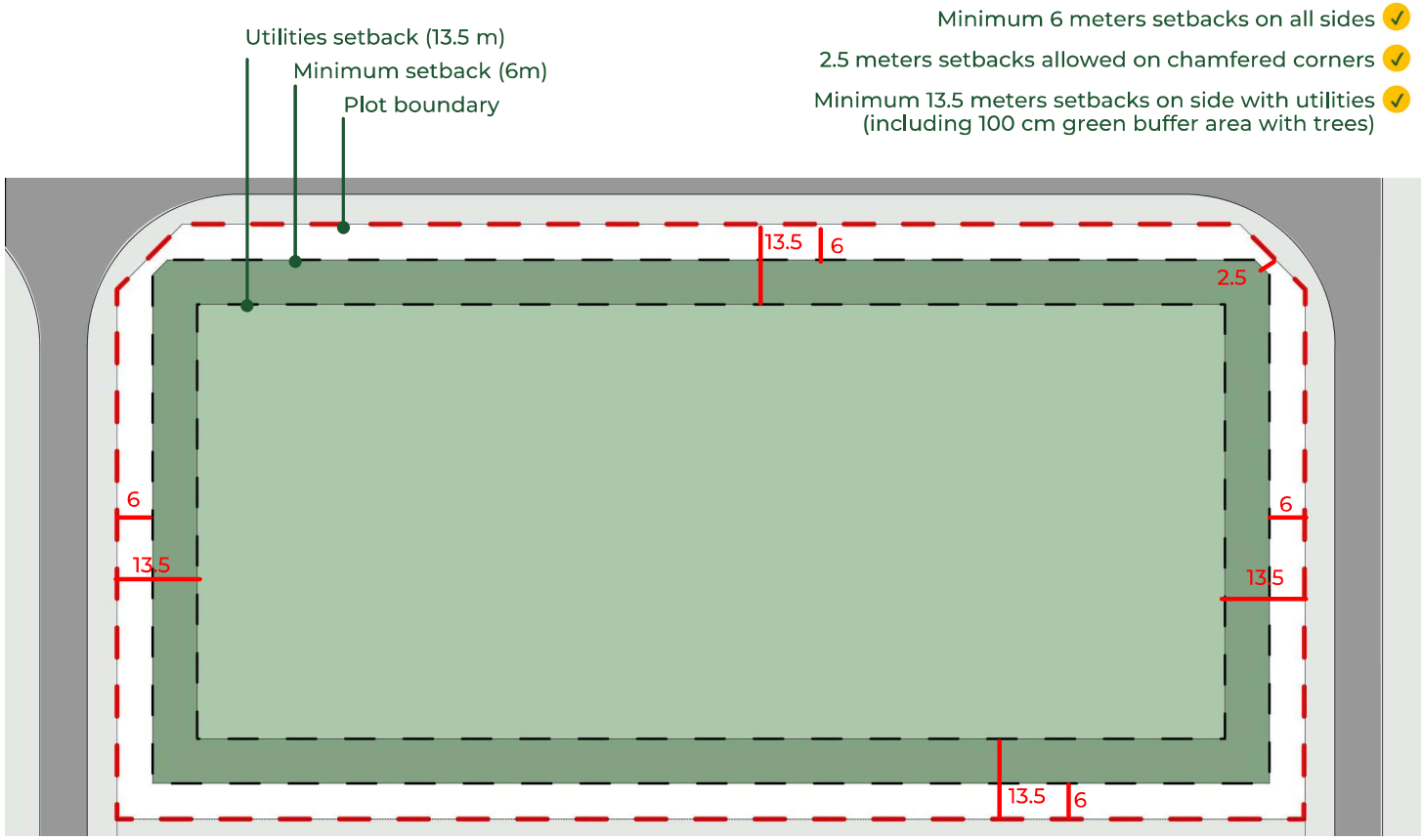
Above-ground technical areas are included in the B.U.A. ✓
Underground technical areas are not included in the B.U.A. ✓
Parking areas (above-ground or underground) are not included in the B.U.A. ✓
Warehouse operations are not allowed in the basement floors ✓
Utilities/Technical buildings and parking areas are allowed in the basement floors ✓

FLOORS	FUNCTIONS		
	Warehouse operations, including manufacturing, assembly, offices and repair shops	**Utilities/Technical buildings (pump-up room, substation, etc)**	**Covered parking structures**
Basement / Underground floor	Not allowed	Allowed but not included in the B.U.A.	Allowed but not included in the B.U.A.
Ground floor	Allowed and included in the B.U.A.	Allowed and included in the B.U.A.	Allowed but not included in the B.U.A.
Mezzanine floor / upper floors	Allowed and included in the B.U.A.	Not allowed	Allowed (if multistory car park) but not included in the B.U.A.

Plot Configuration
Setbacks

The **plots setbacks outline the allowable buildable limits within individual plots**, indicating the minimum required distance between the building or structure and the property line or other designated boundary. Setbacks are intended to serve various purposes, including ensuring safety, providing adequate spacing between structures, allowing for proper ventilation and light, and maintaining the aesthetic character and open space.

1. Generally all plots have a general **minimum setback of 6 meters from all sides.**
2. Plots with **chamfered corners** are allowed to have a minimum setback of **2.5 meters** on the corner.
3. The minimum setback of the building should be increased from 6m to **13.5m on the side where utilities** such as electrical rooms, switch gears, emergency Gensets, guards' rooms, and parking areas are constructed within the setback area. Additionally, a **100cm green buffer area with trees** must be included to cover the utilities building.



Plot Configuration
Setbacks

Align with allowed facilities and uses in the setback areas ✓

Underground utility buildings /tanks are permitted with a minimum 1m setback from the plot limit ✓

In the interest of maintaining a harmonious and compliant environment, it is crucial to adhere to the designated setback areas on the property.

No facility should be placed in the front setback area in plots that have exposure to primary roads, except the guard's room when needed.

Setbacks around buildings should be clear for the circulation of fire-fighting vehicles.

Underground utility buildings /tanks are permitted with a minimum 1m setback from the plot limit for all technical underground structural works. The tenant must ensure the stability of adjacent structures, including fences, buildings, and the SILZ walkway, by adhering to OSHA Excavations regulations or implementing shoring where required to prevent settlement and avoid damage to nearby structures.

Allowed Uses in Setback Areas
✓ Landscaping and Green Spaces
✓ Pedestrian Walkways
✓ Utility Installations (as electrical rooms, switch gears, emergency Gensets)
✓ Vehicular circulation
✓ Car and Van Parking areas (at-grade)
✓ Entrance gates
✓ Guards' room

03.3
Building

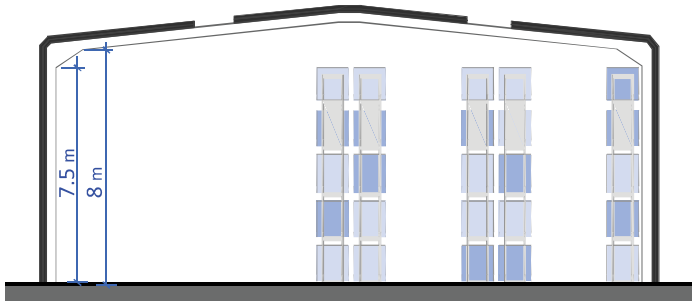
Building
Height Limit

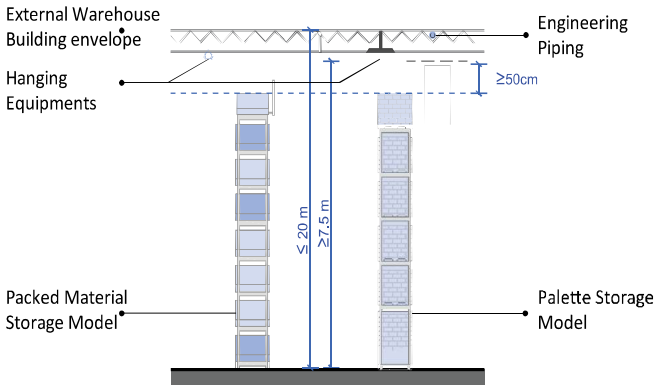
Minimum building height 7.5 meters (from ground floor to lowest point of the ceiling) ✓

Minimum distance of 50 cm from the highest pallet level and the lowest point of hanging fixed equipment from the floor ✓

The maximum allowed height of the utilities buildings and guard house constructed within the setback is 4.5 meters from the external adjacent walkway ✓

1. The **maximum allowed exterior elevation (height)** of facilities / buildings is governed by proximity to KSIA runways. Consequently, same shall be duly coordinated with Authorities having jurisdiction since that may vary according to plot location within MP.
2. The **height of facilities is recommended not to be less than 7.5m** from the ground floor to the lowest point of the ceiling and / or any point of hanging fixed equipment from the ceiling.
3. The required distance for the movement of order picking equipment is no less than 50 cm from the highest pallet level and the lowest point of hanging fixed equipment from the floor.
4. The **maximum allowed height of the utilities buildings and guard house constructed within the setback is 4.5 meters** from the external adjacent walkway



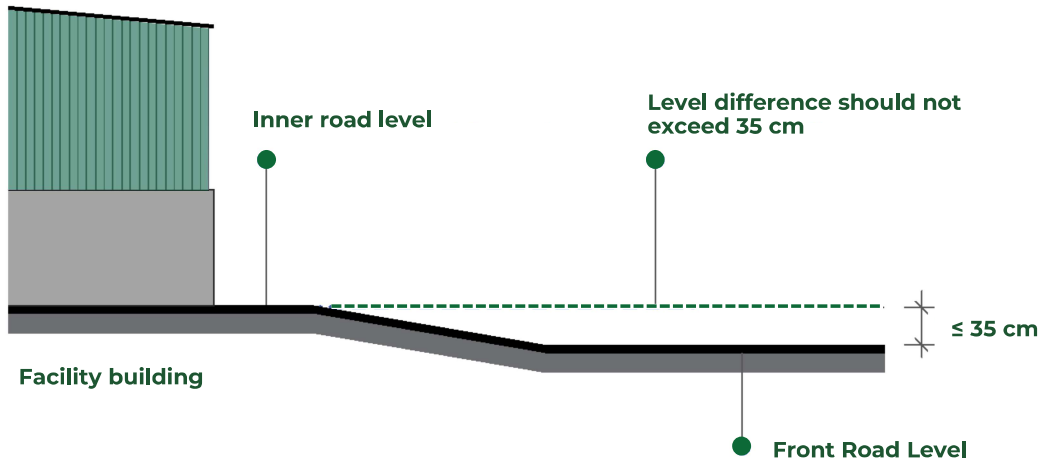


Building

Inner Roads Level / Pavements & Excavations

Plot excavation is recommended within plot buildable area ✓

- To facilitate **entry to and exit from the Warehouse** the final level of the inner roads shall not exceed the level of the road asphalt by more than 35 cm.
- **Plot excavation is recommended** within plot buildable area. Accordingly, ensuing built up areas within, would not be included in BUA calculation if occupied by Technical rooms , storage, liquid storage tanks & the likes.
- **Waterproofing systems & flood prevention measures** shall be undertaken by the designers to prevent leaks & flooding in submerged areas. Furthermore, in that direction, Electric rooms of all sorts as well as other types of sensitive rooms should be kept away from external walls interface or double walled for proper protection & safety.



Building
Mezzanine Floor

Mezzanine floor does not exceed one-third of the area of the floor ✓

Mezzanine floor is used for same use typology as of the original use of the warehouse ✓

A mezzanine floor - *defined to be an intermediate floor between the floor and the ceiling of any void* – are acceptable as long as corresponding area does not exceed one-third of the area of the floor in which it is located. Therefore, accepted within the building overall height as long as mezzanine floor to area ratio and corresponding height comply with SBC and authorities under jurisdiction.

In that regard, MOMRA's guidelines permits to create an internal mezzanine on an area not exceeding 30% of the warehouse area, and is used for same use typology as of the original use of the warehouse. **"It is permitted to create an internal mezzanine on an area not exceeding 30% of the building area in industrial workshops and specialized maintenance centers."**

Salmaniah Architecture Principle

General Principles

Adopt Salmaniah urban and architectural guidelines ✓

HM King Salman changed the prevailing urban and architectural trends of the time in order to implement his own development model. Which stems from the belief that Riyadh should retain its deeply rooted awareness of its glorious heritage, as well as its future aspirations and values. Within its social and cultural milieu, and, he played a decisive role guiding urban planning in Riyadh, unique within neighboring cities.

His ideas and concepts for urban development ultimately shaped the term **Salmaniah Architecture**.

In order to further promote and realize his vision, specific **Urban and Architectural guidelines** are to be followed. These can be summarized in the following points:

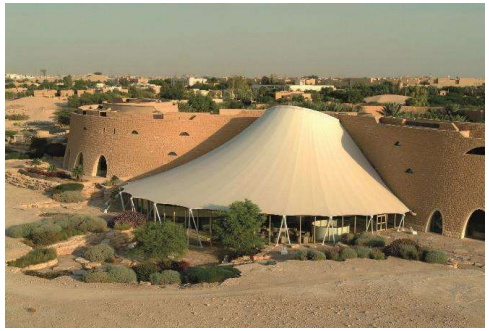
- Respond to harsh climatic conditions (i.e. shading strategy and use of non-reflective surfaces).
- High quality interface between the building and the street.
- A plain, simple and elegant style.
- Alternation of solid masses and openings.
- A sober exterior hiding abundance within.
- An architectural vocabulary that celebrates the traditional regional architecture (i.e. slit-type windows, typical façade elements, flat roofs, courtyards).
- Use of local/ Najd building techniques and materials, or their contemporary adaptation (i.e. limestone, mud colored plaster, beige metal/ high-pressure laminate HPL cladding).
- Combination of Traditional Architectural elements with contemporary parameters and new technologies.
- A clear sensitivity to regional traditions, culture and climate.
- A deep respect for history and historical precedents.
- A comprehensive philosophy of planning, contextual integration and a holistic approach toward the built environment in the design.
- Human scale as key Planning and Architectural principle.
- Strong communal and familial values as driver in shaping public and private spaces.
- An elegant and always newly founded balance between free imagination and the proscriptions of tradition.
- Authenticity in combining Traditional Architectural elements within contemporary parameters and in cleverly integrating new technologies.
- Provision of generous open space and landscape elements within the design, with an emphasis on regional landscape and local plants.
- A composition distinguished by its vitality, flexibility and restriction to limited elements and items.
- The following Architectural trends, within the lens of contextual urban design, cannot be considered Salmaniah Architecture:
- Mere replicas of traditional historic and vernacular buildings.
- Transplant of modernism Western or Eastern styles, unrelated to the local social, economic, and environmental context.
- A neoclassic eclectic and colorful style unrelated to the local social, economic, and environmental context.
- Neo-traditional architectural elements or decorations not reflecting the genuine local identity of Riyadh and the central Najd Region; such as elements known from Al Hijaz, Hofuf and Quatif , Asir and Najran regions, or from other Arabian Countries.
- Full-wall glazing, highly reflective, mirrored, heavily tinted and opaque glazing. Glass facades should be generally minimized and/or used with environmental thoughtfulness.

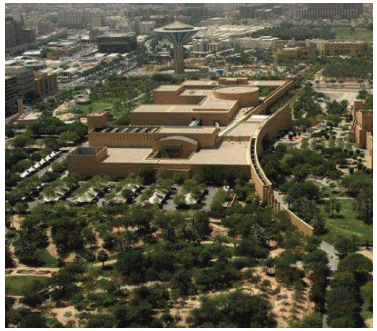
The above are excerpts from "Salmaniah Architecture Guidelines", prepared by AS+P for Riyadh Development Authority

Salmaniah Architecture Principle
Contemporary Interpretations







Building Design
General Guidelines

The design is simple, elegant and modern in architectural articulations ✓

Ornamentation to be avoided ✓

Enhance environmental performance of facilities through passive strategies ✓

Architectural design criteria for the facilities aim at achieving two goals: the first being to ensure a functional homogeneous space and the second one is to make sure that the building is aesthetically appealing, taking into account the following factors:

a. Remaining truthful to the **Salmaniah architectural principles** as envisioned to be applied to the overall new SILZ master plan.

b. The **design is simple, elegant and modern** in architectural articulations, including a various set of adequate architectural materials and local techniques.

c. Ornamentation to be avoided. modern interpretation of traditional patterns are encouraged to be used when necessary.

d. Attention should be given to enhancing the environmental performance of the facilities through passive strategies. Glass curtain wall construction should be avoided. Thermal mass, smaller window opening and efficient external shading systems are recommended. Modular construction is encouraged, enhancing efficiency, versatility and waste reduction.

e. For buildings Acoustic regulations refer to local environmental agencies' guidelines, including those set by MOMRA "Environmental Guideline". Furthermore, additional regulations shall be noted pertaining to Chiller and generator rooms :

1. To comply with maximum warehouse and storage area 45 dB night, 50 dB evening, 55 dB day.
2. To provide acoustical louvers to meet the above required acoustic noise level.

Moines Municipal Service Building – Iowa US

Magna Park, Milton Keynes - UK

Bestseller Logistics Centre North – Haderslev Denmark

Moro winter distribution center – Japan

Building Design

Building Design and General Guidelines


Artist's impression of SILZ warehouses as per Design Guidelines


Artist's impression of SILZ warehouses as per Design Guidelines


Artist's impression of SILZ warehouses as per Design Guidelines


Artist's impression of SILZ warehouses as per Design Guidelines

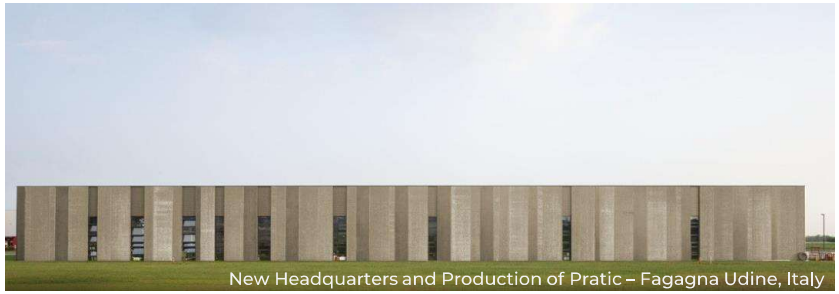
Façade Design Guidelines

All Facilities are **recommended to have architecturally addressed facades**, with no blank or featureless sides in anticipation of future expansion. Architectural details should be **homogeneous**, with no radical change in details, materials or architectural features between the different facades. All sides of the building should harmonize as one design, and not change architectural language or quality. It is recommended to keep the local tradition of creating plain, calm and elegant facades.

All Facilities are recommended to have architecturally addressed facades ✓

Architectural details should be homogeneous ✓

Keep the local tradition of creating plain, calm and elegant facades. ✓



New Headquarters and Production of Pratic – Fagagna Udine, Italy

Centro Logístico Mango – Barcelona, Spain

Industrial Exhibition Center – Lianyungang, China

Schachinger Logistics – Hörsching , North Austria

Façade Design Guidelines

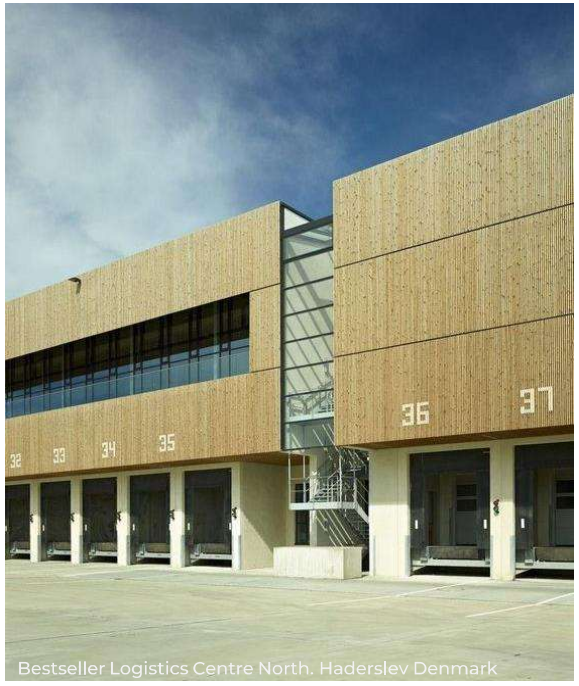
The main entrances should be visible and clearly marked ✓

Office component to be placed at the front of the facility ✓

Extensive glass curtain wall construction should be avoided ✓

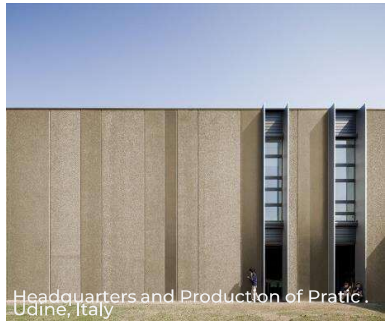
Southern, eastern and western facades should be designed to provide adequate shading ✓

- Attention should be given to the design of facades especially in facilities that are located on more than one road, and have more than one access point.
- The main entrances should be visible and clearly marked, facing streets, to accommodate better way finding and ease of access.
- Office component to be placed at the front of the facility, facing main roads.
- Extensive glass curtain wall construction should be avoided. Thermal mass, smaller window opening and efficient external shading systems are highly recommended, while keeping the fenestration ratio below 25% of the wall's surface.
- Southern, eastern and western facades should be designed to provide adequate shading and reduce the acquired direct heat gain by exposure to solar radiation.
- The envelope should be well insulated and glass types used should be of high energy saving performance standard, to avoid heat exchange. Predominant glass-covered buildings, with reflective surfaces should be avoided.
- Light colored materials and finishes that are compatible with hot environments should be used in external finishing works of the facilities facades.
- Wall patterns and color mixes should be kept to a minimum.



Bestseller Logistics Centre North. Hadersley Denmark


Escola Secundária Sebastião da Gama. Portugal


Headquarters and Production of Pratic . Udine, Italy

Roofs Design Guidelines

- Skylights having high thermal performance to allow north light, with a minimum opening ratio of 6% of overall roof area, may be adopted.
- Roof structure must be properly insulated. Higher thermal mass materials are recommended and should be finished with light color, low absorption exterior paint.
- To maintain aesthetic homogeneity as well as ease of maintenance, flat to low-slope roofs are to be adopted. Maximum slope of 15% is recommended.
- PV panels to be installed on roofs covering no less than 60% of the overall roof area.
- Installations and technical fixtures on the roof should be Acoustically insulated, not be visible by passersby and have to be integrated thoroughly into a homogeneous roofscape design.

Refer to SILZ Sustainability Guidelines for further recommendations and guidance.

Skylights opening ratio of 6% minimum of overall roof area ✓

Higher thermal mass materials are recommended for the roof structure ✓

Flat to low-slope roofs are to be adopted (maximum slope of 15% is recommended) ✓

PV panels to be installed on roofs covering no less than 60% of the overall roof area ✓

Lake Nona AMAZON Fulfillment Center - Florida,

Waste Room Guidelines

1. Waste segregation facilities must be provided and to have a waste room that can accommodate the required containers and balers for the different waste streams, mainly:
    - Roll-on / Roll-off (RORO) containers (or skip loaders): large-volume cardboard and wood.
    - Regular bins: residual, low-volume plastics, organic, mixed paper, metal, and glass; Balers: medium-volume cardboard, high-volume plastics.
    - Special bins: Special waste (hazardous, e-waste, batteries etc.)
2. The tenant waste room, as a minimum requirement, need to be:
    - Air conditioned
    - with drainage gutter at the entrance
    - with the required power and water provisions
    - enough space to accommodate the segregation requirement.
    - with proper access for the trucks taking height and maneuvering restrictions into consideration
3. The Tenant to provide a list of the waste types they generate and the number of containers, aligning with the SILZ categories where applicable. SILZ waste types include: cardboard, wood, plastics, mixed paper, metal waste, food and organic waste, residual waste, hazardous waste, and e-waste.

Refer to SILZ Sustainability Guidelines for further recommendations and guidance.

Waste segregation facilities must be provided ✓

Tenants to provide a list of generated waste types and number of containers ✓

Building Design
Materials and Textures

Good solid and durable materials are preferred ✓

The color palette indicates the use of light earthy tones ✓

Materials

The choice of materials should be considered in combination with the climatic factors of Riyadh.

In general, good solid and durable materials are preferred for their overall effect on the perceived quality of the development and for their ability to last and age well with low maintenance. Preference should be to locally sourced materials.

Degradation of materials should be thought of when choosing as well as energy consumption and emissions.

Textures

A consistent strategy for surfaces and materials should be planned for the whole of the plot to ensure a balanced development of high quality.

Colors

The color palette indicates the use of light earthy tones, corresponding well with the history of Riyadh.

Paving materials selection within plots, is designated to be a tenants' choice. However, the use of light-colored materials for paving is recommended because of its heat dissipation characteristics and its ensuing positive contribution towards overall sustainability assessment.

Careful consideration should be taken, when using bright materials and shiny and reflective surfaces, not to create unwanted glare and blinding effects.

03.4

Open space

Guidelines

Open spaces

Open space is defined as the area without any building structure.

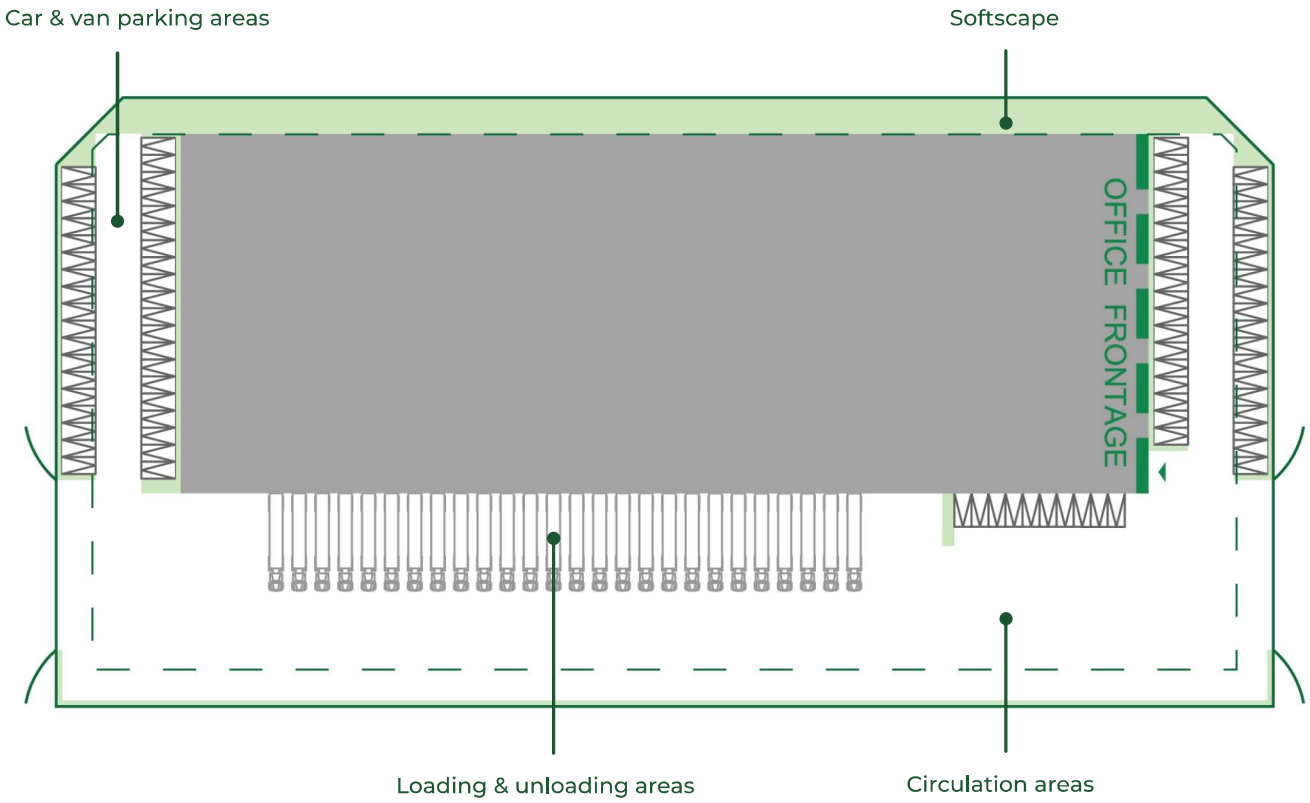
The open space of the plot consists of spaces for:

Vehicular use

- Loading & unloading areas
- Car & van parking areas
- Circulation areas for both light and heavy vehicles
- Internal walkways

Landscape use

- Softscape (parts intended for planting)
- Hardscape



Loading & unloading areas
Guidelines

1. A portion of the land surface shall be allocated to the loading and unloading activities according to the facility needs. The loading and unloading zones may be separated or combined in one area.
2. The loading and unloading areas shall be determined on the plot plan, taking into account the unhindered cars and trucks movements without interferences in the circulation paths and with sufficient maneuvering space for large trucks (when applicable).
3. Loading bays shall be conveniently spaced according to their types.

Loading & unloading areas
Requirements

Provide minimum required number of loading and unloading areas ✓

Obligation to provide areas designated for trucks unloading and loading, at the rate of **1 truck parking space per 300 square meters of the warehouse**, as required by MOMRA.

The estimate by plot area in the table, is calculated considering the land use B.U.A. breakdown of tenants plots by brief:

- **Warehouse: 51%**
- Assembly facilities: 31%
- Office: 18%

Loading & unloading areas should be strategically located to minimize congestion and allow for efficient traffic flow.

Plot area	Plot B.U.A.	Warehouse B.U.A.	Loading & Unloading areas requirements
5,000 sqm	3,750 sqm	1,912 sqm	6 areas
10,000 sqm	7,500 sqm	3,825 sqm	13 areas
15,000 sqm	11,250 sqm	5,738 sqm	19 areas
20,000 sqm	15,000 sqm	7,650 sqm	26 areas
30,000 sqm	22,500 sqm	11,475 sqm	38 areas
40,000 sqm	30,000 sqm	15,300 sqm	51 areas
50,000 sqm	37,500 sqm	19,125 sqm	64 areas
60,000 sqm	45,000 sqm	22,950 sqm	77 areas

Loading & unloading areas

Vehicles standards

Turning diameters should be designed to accommodate the largest vehicles expected to use the loading and unloading areas.

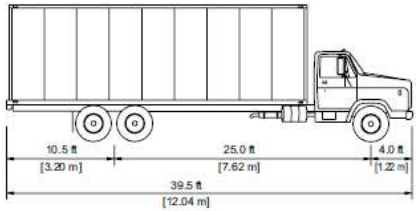
All plots designated for tenant use must be designed to **accommodate trucks within the allowable range of lengths specified by SILZ**. The permissible truck lengths range from a minimum of 12 meters to a maximum of a Double Semi-Trailer truck, with a length not exceeding 22.04 meters.

The docks must be designed specifically for **22-meter trucks** (as outlined in the guidelines on the following pages). If the tenant intends to use **double semi-trailers**, they must demonstrate the functionality of their proposal to SILZ through detailed studies during the design phase.

Source: AASHTO-Geometric Design Highway & Streets-7th edition 2018

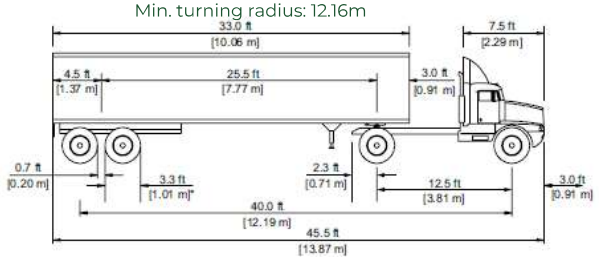
SU-40 [SU-12]– 12 meters truck

Min. turning radius: 15.60m



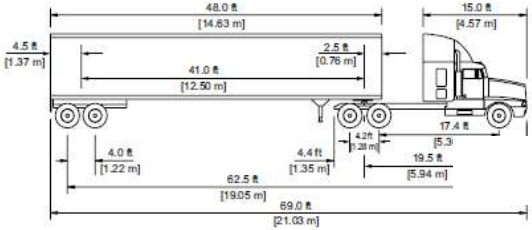
WB 40 – 14 meters truck

Min. turning radius: 12.16m



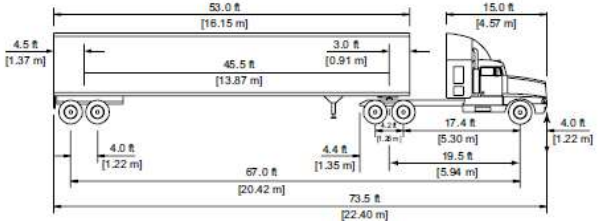
WB 62 – 21 meters truck

Min. turning radius: 13.66m



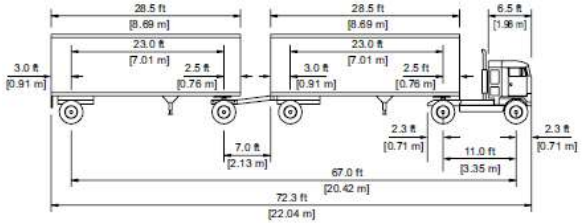
WB 67 – 22 meters truck

Min. turning radius: 13.66m



Double semi-trailer truck (22 meters)

Min. turning radius: 13.67m



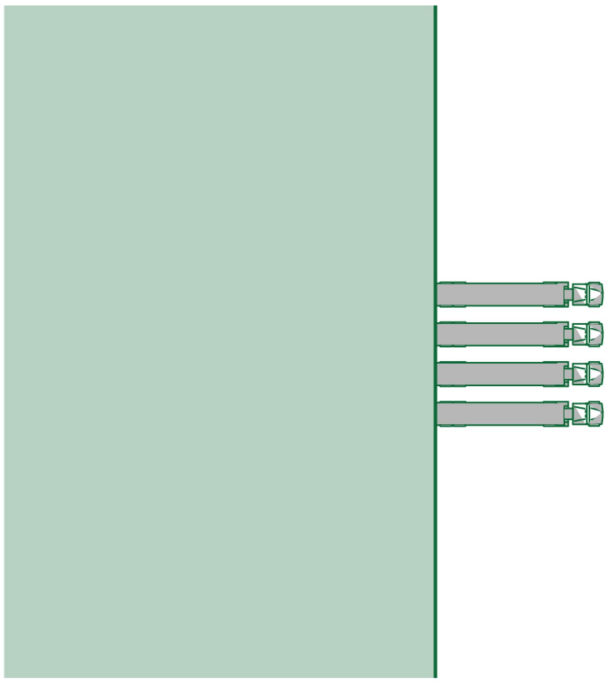
Loading & unloading areas
Design and dimensions

Loading docks play a pivotal role at the commencement and culmination of any storage operation. Ensuring flexibility in their placement is essential to accommodate the evolving needs of the warehouse while factoring in various environmental considerations.

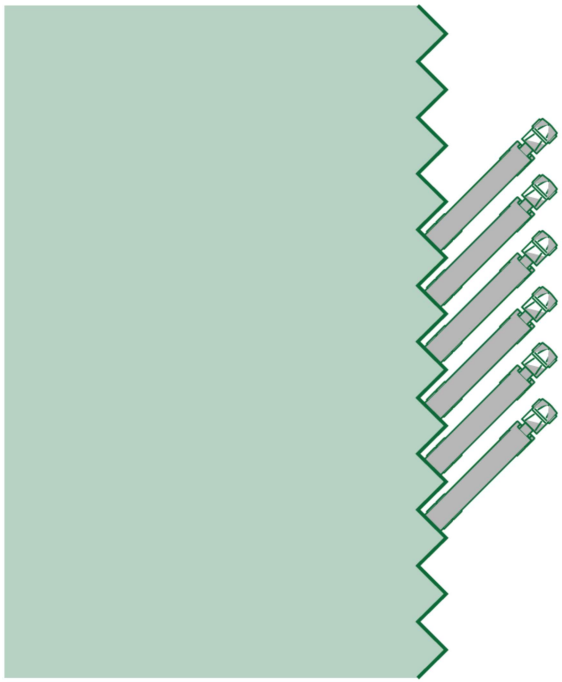
The **design of loading and unloading docks** vary depending on the "angle of the truck parking, the type of moved goods, the loading technique, and the material handling tools and equipment.

In this design guidelines book, two main typologies are developed:

- **Vertical docks**
- **Inclined docks**



Vertical docks



Inclined docks

Loading & unloading areas

Vertical docks

Recommended to adhere to the proposed spacing and distances for the loading docks ✓

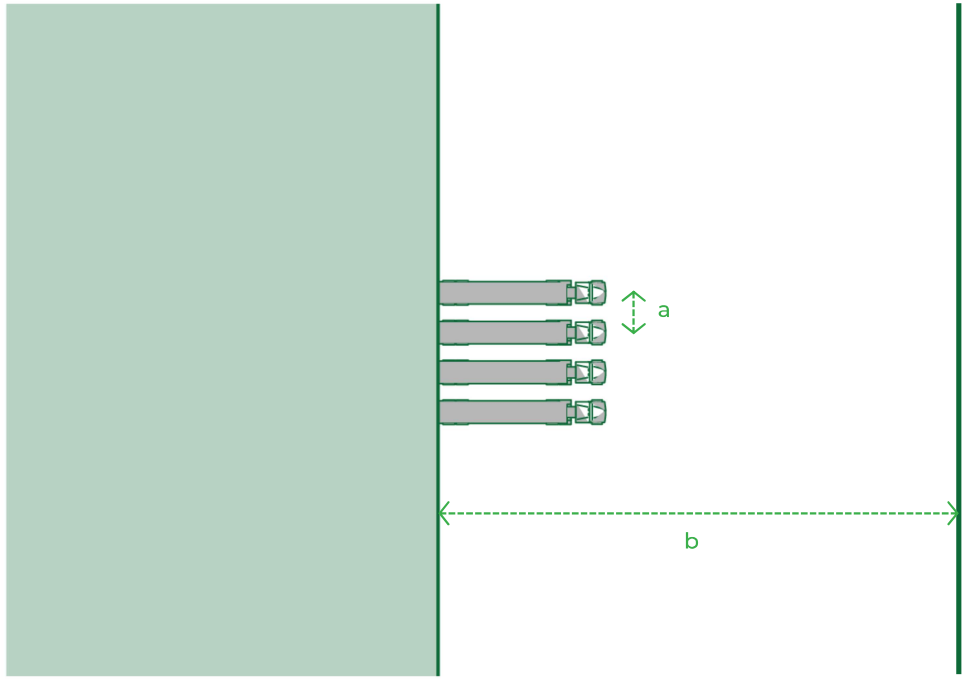
Back-loading docks

a) **Spacing:** Minimum bay spacing shall not be less than 3.8 m

b) **Manouvering area:** The required distance for the truck circulation and maneuvering movement should be defined based on i) trucks dimension; ii) spacing between loading docks. As provided in the table, maneuvering spaces could be reduced increasing the spacing between loading docks.

Truck	Spacing (a)	Manouvering area (b)
14 meters Truck	3.8 meters	33 meters
14 meters Truck	6.5 meters	28 meters
22 meters Truck	3.8 meters	40 meters
22 meters Truck	6.5 meters	30 meters

Note: If the tenant intends to use double semi-trailers, they must demonstrate the functionality of their proposal to SILZ through detailed studies during the design phase.



Loading & unloading areas
Vertical docks

Recommended to adhere to the proposed spacing and distances for the loading docks ✓

Lateral-loading docks

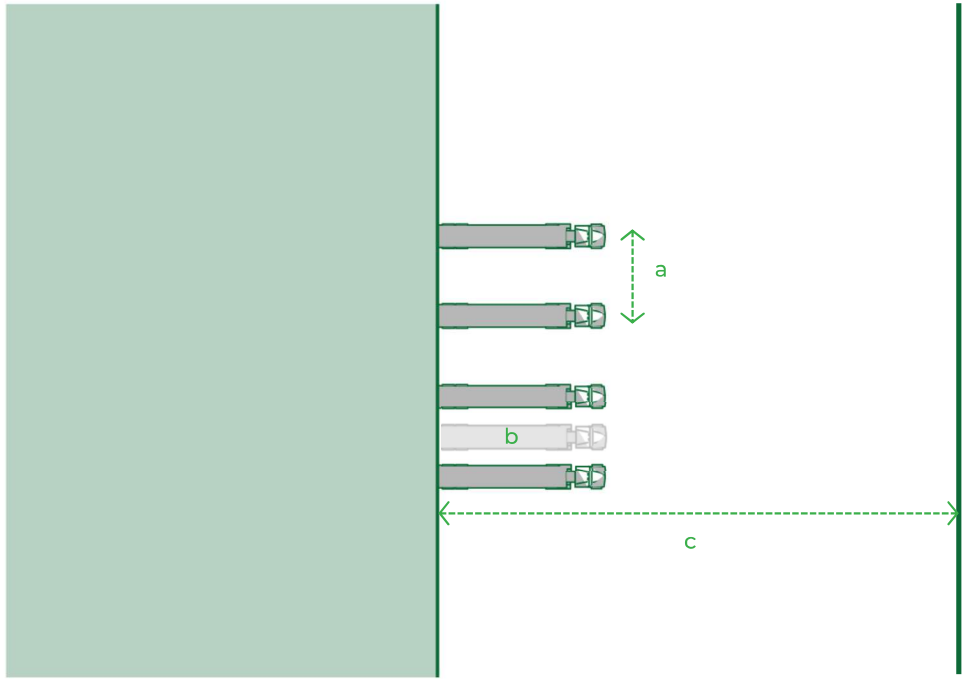
a) **Spacing**: The width of the vertical lateral loading dock is no less than 7 m in order to provide lateral space to load goods from the sides.

b) **Overnight truck parking:** The space between loading docks can be used as overnight truck if the minimum maneuvering area in the table below is provided.

c) **Manouvering area:**

Truck	Overnight parking	Manouvering area (b)
14 meters Truck	Yes	33 meters
14 meters Truck	No	28 meters
22 meters Truck	Yes	40 meters
22 meters Truck	No	30 meters

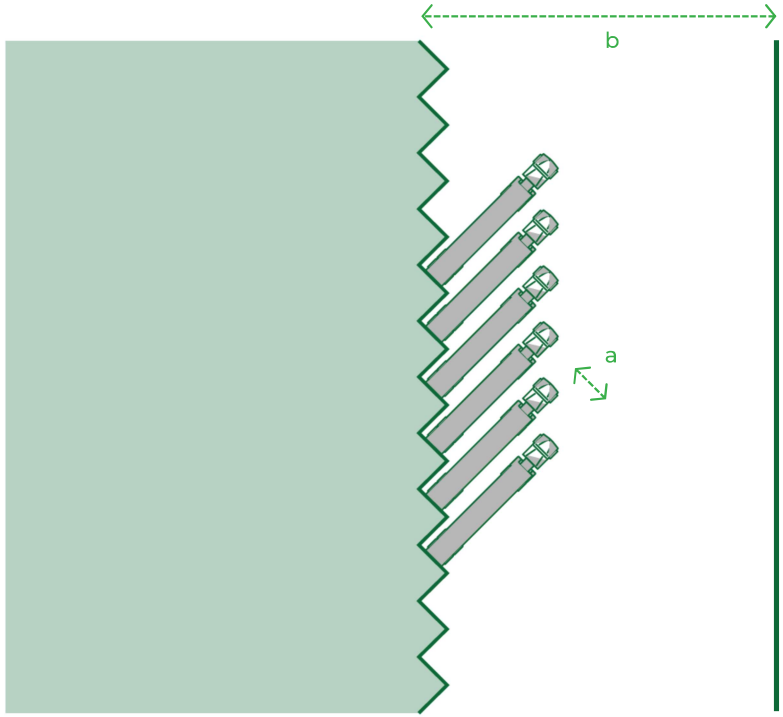
Note: If the tenant intends to use double semi-trailers, they must demonstrate the functionality of their proposal to SILZ through detailed studies during the design phase.



Loading & unloading areas

Inclined docks

Recommended to adhere to the proposed spacing and distances for the loading docks ✓



a) Spacing: the minimum spacing between 45° angled bays is no less than 3.8 meters.

b) Manouvering area: The required distance for the movement of trucks of 15 meters is no less than 21.5 m from the loading docks. For 18-meters trucks, the minimum distance is 24 meters.

Truck	Spacing (a)	Manouvering area (b)
14 meters Truck	3.8 meters	21.5 meters
22 meters Truck	3.8 meters	24 meters

c) Traffic aisle: if it is necessary to provide an aisle for trucks passage, an additional width of 7 meters should be added to the maneuvering area.

Note: If the tenant intends to use double semi-trailers, they must demonstrate the functionality of their proposal to SILZ through detailed studies during the design phase.

Parking areas
Guidelines

Designing **parking areas** involves careful consideration of the space available, the number of vehicles, and the specific needs of the tenants.

1. Determine the number of parking spaces for both cars and company van/shuttle based on the number of employees and expected visitors.
2. Ensure parking areas are easily accessible from main entrances and are well-connected to pedestrian walkways.
3. Consider proximity to office entrances, loading docks, and other key areas.

Parking areas

Parking typologies

Two parking typologies are permitted within SILZ tenants' plots:

1. **Surface At-Grade Parking:**

At-grade parking is generally recommended for most plot typologies due to the limited number of required parking spaces.

2. **Parking Structures/Underground parking**

Multi-stories parking facilities could be considered by tenants if a higher number of parking spaces are required respect to the require minimum number provided in this report.

Surface At-Grade Parking

Parking Structures/Underground Parking

- **Integration within Building Structure:** Recommended to integrate parking structures within the overall building structure rather than as a separate entity.
- **Aesthetics and Alignment:** Any alternative solution should maintain the desired level of aesthetics and adhere to building façade alignments.
- **Height Limit:** The same height limit applied to the buildings is to be observed for parking structures.

Parking areas

Parking location

On-street parking is strictly prohibited for all tenants. Each tenant must ensure that all parking requirements are accommodated within their designated plot boundaries. ✓

Locate parking area near access points ✓

Locate parking area near the office frontage ✓

Separate parking area from the loading and unloading area ✓

On-street parking is strictly prohibited for all tenants. Each tenant must ensure that all parking requirements are accommodated within their designated plot boundaries.

When determining the location of parking areas within the plot, it's essential to consider:

1. **Proximity to Access Points:**

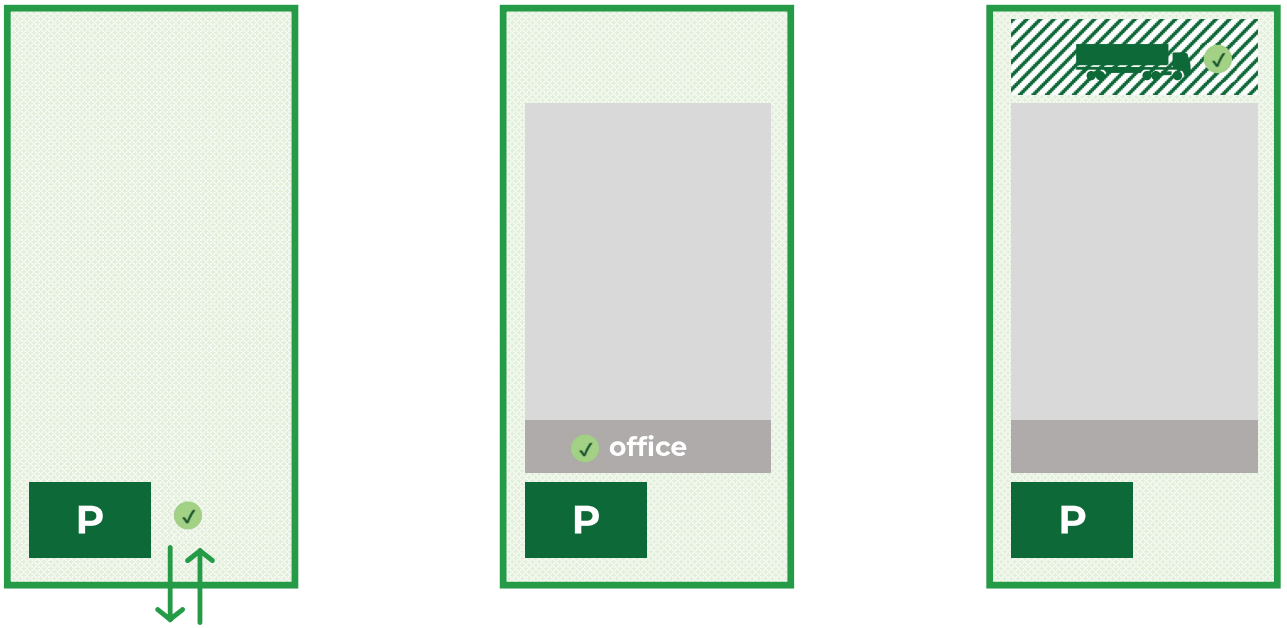
Place parking areas close to main access points to minimize the distance employees and visitors need to travel from their vehicles to the entrance.

2. **Office Proximity:**

Situate parking close to office entrances to enhance convenience for employees.

3. **Separation from Production Areas:**

Keep parking areas separate from production and operational zones to avoid interference with warehouse activities.



Parking areas

Car parking requirements

Provide the minimum number of parking spaces ✓

Additional parking spaces above the maximum limit should be reviewed with SILZ ✓

The table presented on the right serves as a comprehensive summary detailing car parking requirements, derived from MODON parking rates (based on MOMRA studies.

Tenants must comply with the guidelines by ensuring that they provide the minimum number of parking spaces required within their allocated spaces.

Any additional stalls within plots in excess of the maximum limit indicated in the table should be reviewed beforehand in terms of traffic impact.

The table on the right provides an indicative recommended number of parking spaces based on the plot configurations study. The cap of maximum allowed car parks is determined to maximize the warehouse building footprint.

Plot Type	Minimum parking required ✓	Maximum parking required	Reccomended number of parking spaces (based on plot configurations)
5 K	20 parking spaces	24 parking spaces	20 parking spaces
10 K	40 parking spaces	47 parking spaces	40-45 parking spaces
20 K	81 parking spaces	95 parking spaces	81-93 parking spaces
40 K	162 parking spaces	189 parking spaces	178-188 parking spaces

MODON parking rates (based on MOMRA studies):

- Warehouses: **1 parking / 320-500 sqm**
- Light industry & assembly: **1 parking / 280-400 sqm**
- Office : **1 parking / 50 sqm**

The number of car parking spaces recommended for Tenants plots is determined based on studies on typical plot configurations, which consider the building footprint, loading and unloading areas, circulation, etc.

Parking areas

Car parking requirements

Provide the minimum number of parking spaces ✓

Additional parking spaces above the maximum limit should be reviewed with SILZ ✓

The table shows the estimated number of car parking spaces required for each plot type in Phase 1 of the DMP.The calculation is based on the following MODON parking rates (based on MOMRA studies):

- Warehouses: 1 parking / 320-500 sqm
- Light industry & assembly: 1 parking / 280-400 sqm
- Office : 1 parking / 50 sqm

Tenants must comply with the guidelines by ensuring that they provide the minimum number of parking spaces required within their allocated spaces.

Any additional stalls within plots in excess of the maximum limit indicated in the table should be reviewed beforehand in terms of traffic impact.

Plot area	Minimum parking spaces required	Maximum parking spaces required
5K	20	24
10K	40	47
11K	45	52
14K	57	66
19K	77	90
20K	81	95
21K	85	99
24K	97	113
30K	121	142
39K	158	184
40K	162	189
51K	206	241
55K	223	260

Parking areas

Car parking design

Design stalls and aisles of parking areas in line with MOMRA regulations ✓

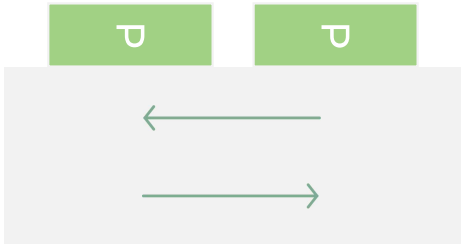
Designing car parking areas within plots must adhere to the regulations set forth by MOMRA for three distinct parking stall typologies: **i) longitudinal parking; ii) vertical parking; iii) diagonal parking.**

Based on the parking typology adopted in the plot, Tenants must follow the provided dimensions of:

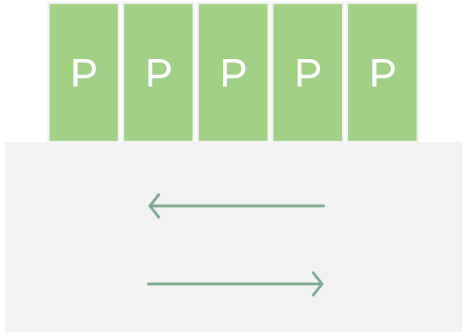
- Parking stalls dimensions
- Parking aisle width (one-way or two-way)

The following guidelines are applicable to the parking stalls:

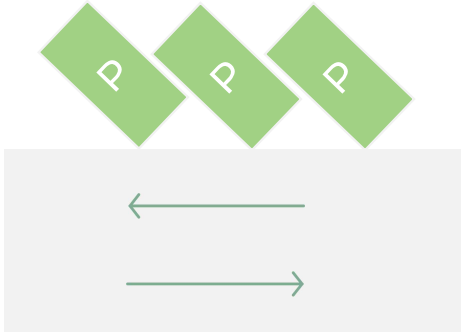
- Longitudinal parking lots shall be determined using lines of paint area (10 cm) wide, or by outlining them with the same flooring materials.
- It is allowed to determine the place where the wheel of the vehicle stops using a concrete bumper or any other material.



Longitudinal parking	
Parking stall dimension	2.5 x 6.5m
Parking aisle width (one-way)	4 m
Parking aisle width (two-way)	7 m



Vertical parking	
Parking stall dimension	2.8 x 5.5 m
Parking aisle width (one-way)	7.5 m
Parking aisle width (two-way)	7.5 m



Diagonal parking	
Parking stall dimension	2.8 x 5.5 m
Parking aisle width (one-way)	5 m
Parking aisle width (two-way)	7.2 m

Source: MOMRA Parking Lots Design Guide (2023)

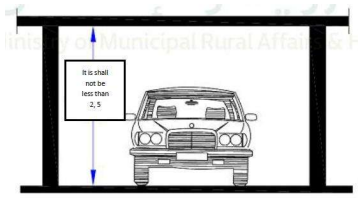
Parking areas

Multi-storey and underground car parking

Design stalls and aisles of parking areas in line with MOMRA regulations ✓

Floor height

The net height of the underground or Multi-storey in the parking lots shall not be less than 2.5 meters. It is the minimum height that allows cars to pass, and the height of the opening or exit from the parking lot shall not be less than 2.5 meters.



Source: MOMRA Parking Lots Design Guide (2023)

Entrances and exits

- The minimum width of the entrance or exit to parking is 3.5 m if the traffic is in one direction and 7 m if it is in two directions.

- It is allowed to separate between the entrance and exit allows an island with a width of 0.5 m if the entrance and exit opening are shared.

- It is allowed to use the parking lot entrance as an exit if the number of parking lots is less than 25 and the width of its path is not less than 4 m.

Ramp Slopes

Slopes are inclined surfaces used to move the car from one floor level to another level within the parking building in order to ensure that the car moves in a safe manner, the following design shall be achieved:

Ramps type	Maximum Slope	Minimum ramp width (one direction)	Minimum ramp width (two direction)	Inner radius of the ramp	Outer radius of the ramp
Straight	15%	3.5 m	7 m	-	-
Spiral clockwise	12%	6.1 m	12.2 m	5.18 m	One direction: 11.28 m Two directions: 17.38 m
Spiral in a counterclockwise direction	12%	4.57 m	9.14 m	5.18 m	One direction: 9.57 m Two directions: 14.22 m

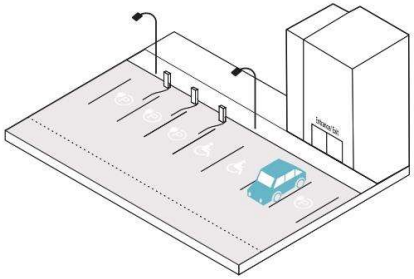
Parking areas
EV charging

Electric vehicles are a fundamental component of sustainable transportation for SILZ. Charging facilities are provided to support the transition from fossil fuel.

Dedicated EV charging points are distributed within the SILZ parking areas for employees and visitors. Approximately 20% of the overall parking provision is equipped with EV charging points:

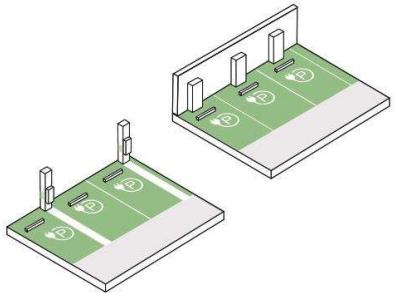
Within plots each tenant will have to **provide a minimum of 5% of his car parks stalls equipped with EV Chargers** (with a minimum of 2).

- Provide at least 5% car park supply equipped with e-charging points (with a minimum of 2) ✓
- Locate e-charging points close to parking and buildings entrances ✓
- Provide adequate space for vehicles charging ✓
- Make highly visible parking stalls for electric vehicles ✓



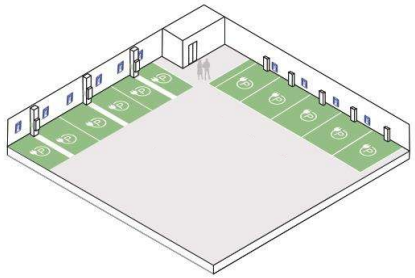
Locate e-charging points close to parking and buildings entrances

EV parking places should be close to building entrances, increasing the attractivity of electric vehicles with dedicated and prime areas. To minimize installation costs and make it easier to be found by users, charging points should be clustered as close as possible.



Provide stoppers/curbs by adequate space

Adequate space should be provided to the user to handle the charger. Casings must be considered to protect the charger from the vehicles (wheel stops, bollards).



Make highly visible parking stalls for electric vehicles

Appropriate signage has a significant impact on driver and pedestrian behavior: green is to be preferred to indicate EV charging place.

Parking areas

Parking canopy

At least 50% of the car parking shall be covered with light-colored shading structures ✓

Canopy design should harmonize with the existing warehouse structure ✓

Photovoltaic solar panels can be placed on the car parking rooftop ✓

The reduction of environmental impact and provision of high level of living standards are key objectives of SILZ. Parking canopies serve multiple purposes, including protecting vehicles from the elements, enhancing security, and maximizing the available space.

- At least **50% of the car parking** shall be **covered with light-colored shading structures.**
- Canopy design should harmonize with the existing warehouse structure and surroundings. It should not obstruct emergency exits, loading docks, or impede the flow of traffic within the plot.
- Photovoltaic solar panels may be placed on the car parking rooftop to achieve renewable energy production at the same time.

Parking areas

Van parking requirements

Provide the minimum number of Van parking spaces ✓

The SILZ Masterplan offers Tenants the opportunity to introduce company shuttles, enhancing connectivity with nearby labor camps.

The allocation of company van/shuttle parking spaces for Tenant plots is determined in accordance with the Traffic Impact Study assumptions and travel demand forecasting. **It is essential for each Tenant to review and revise the designated number of parking spaces based on their specific requirements.** This ensures that the parking allocation aligns seamlessly with the distinct demands of each Tenant.

The specified van parking requirements are established under the premise that company vans/shuttles are intended for short stays within the plots. The general strategy involves these vehicles returning to labor camps or other locations outside SILZ for long-term parking.

Plot Type	Van/Shuttle Parking spaces
5 K	1 van parking space
10 K	1 van parking space
20 K	2 van parking spaces
40 K	4 van parking spaces

The number of van parking spaces within each type of plot consider the expected maximum number of company vans during the AM shift peak hour. The estimate is based on the following assumptions and rates (for AM shift) as defined by the SILZ Traffic Impact Study:

- Employees entering:
  - Blue collars: 100%
  - White collars: 90%
- Employees leaving:
  - Blue collars: 60%
  - White collars: 20%
- Employees absenteeism:
  - Blue collars: 0%
  - White collars: 10%
- Company Van modal share:
  - Blue collars: 85%
  - White collars: 5%
- Peak hour factor: 33%
- Van/Shuttle capacity: 25 passengers / vehicle

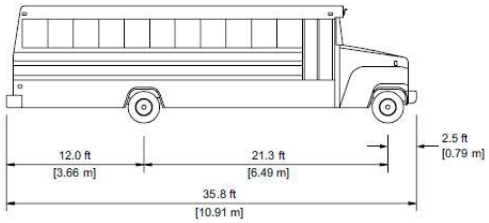
Parking areas

Shuttle / Van design standards

The design standards outlined in the SILZ Tenants Guidelines for Shuttle Bus and Van vehicles adhere to the two primary typologies illustrated in this slide. These standards align seamlessly with the road standards set by Riyadh Municipality.

Source: AASHTO-Geometric Design Highway & Streets-7th edition 2018

Shuttle / Van (7 meters length)



Shuttle / Van (12 meters length)

Parking areas

Shuttle / Van parking design

Design Van parking stalls in line with recommended dimensions ✓

The geometric design for Van and shuttle areas should take into account both parallel and angled parking bays to accommodate drop-off and pick-up requirements. The choice between the two configurations is anticipated to be based on site constraints and expected demand.

*The minimum and maximum length specifications pertain to the two typologies of shuttle and van vehicles illustrated in the preceding page, ensuring compliance with the design standards outlined in the SILZ Tenants Guidelines and aligning with Riyadh Municipality road standards.

Angled Parking	Dimension (m)
Bus Bay Length (a)	16 - 21 meters*
Bus Bay Width (b)	7 meters
Bus Bay angled degrees (c)	45°

Angled parking

Parellel Parking	Dimension (m)
Bus Bay Length (a)	13 – 18 meters*
Bus Bay Width (b)	5 meters
Draw-in length (c)	5.5 – 11.5 meters*
Draw-out length (d)	3 – 6 meters*

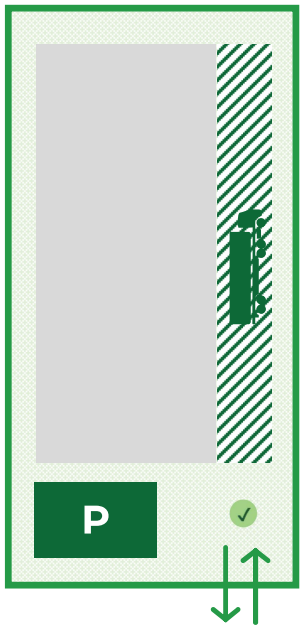
Parallel parking

Internal circulation

Vehicular circulation

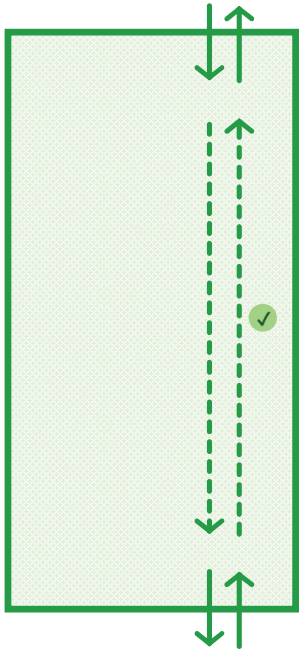
Designing vehicular circulation within a warehouse plot involves careful planning to accommodate various types of vehicles, ensure efficient flow, and address safety concerns:

- **Dedicated routes:** Establish designated routes for trucks to access loading docks, minimizing interference with other vehicular traffic. Strategically position loading docks to minimize conflicts with pedestrian and vehicular circulation while ensuring efficient loading and unloading operations.
- **Flexibility:** To enhance flexibility and connectivity, ensure vehicular connections between various plot access points. This design consideration allows for efficient movement of vehicles within the warehouse plot and accommodates dynamic operational needs.



Establish designated routes for trucks to access loading docks ✓

Ensure vehicular connections between plot access points ✓



Internal circulation

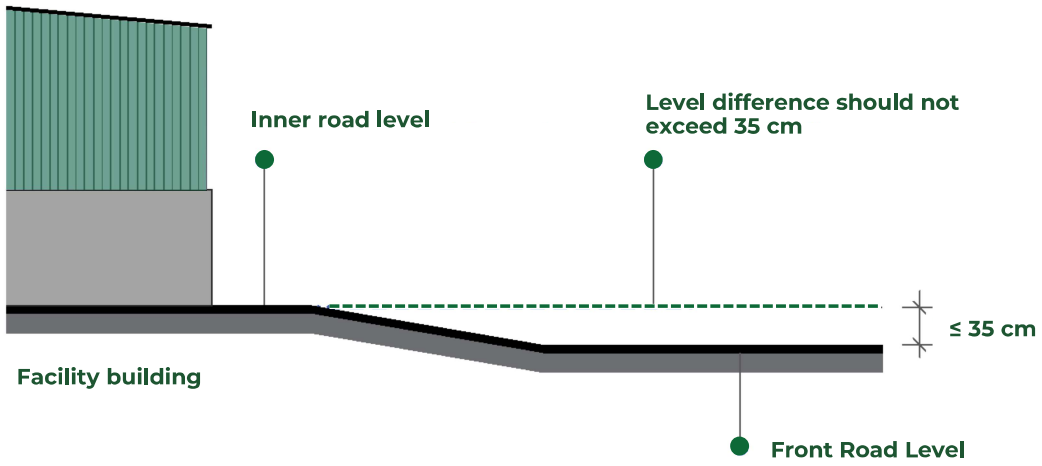
Vehicular circulation

Final level of inner roads shall not exceed level of the road asphalt by more than 35 cm ✓

Ensure that vehicle access corridors have an unobstructed width of at least 6m ✓

Designing vehicular circulation within a warehouse plot involves careful planning to accommodate various types of vehicles, ensure efficient flow, and address safety concerns:

- **Road levels:** To facilitate entry to and exit from the Warehouse the final level of the inner roads shall not exceed the level of the road asphalt by more than 35 cm.
- **Circulation width:** Internal lanes for vehicular circulation of trucks, cars and vans shall have an unobstructed width of not less than 6 m.



Internal circulation

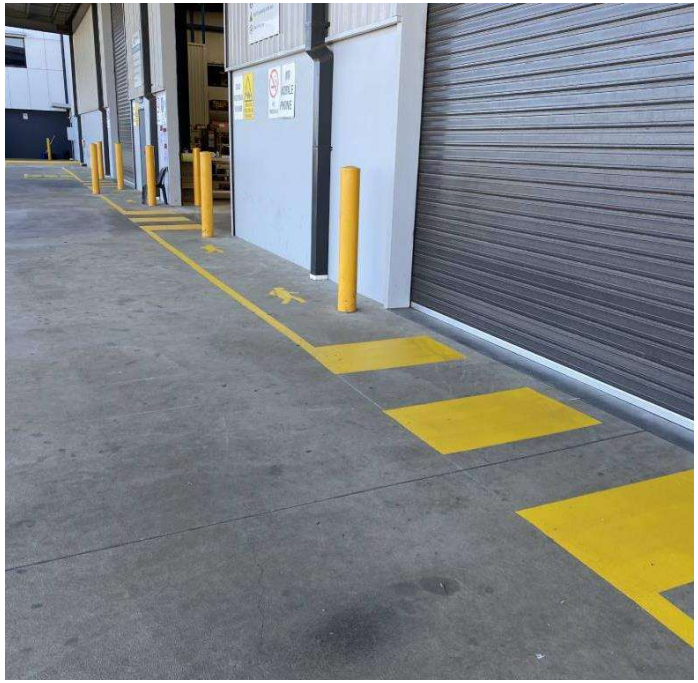
Pedestrian circulation

Establish clear and direct pedestrian pathways between plot pedestrian access points, building entrances, parking areas, and other key points. ✓

Designing pedestrian circulation within warehouse plots is crucial for ensuring safety, accessibility, and efficiency:

1. **Connect pedestrian entry and exit points**

Establish clear and direct pedestrian pathways, minimizing obstructions and providing efficient routes between plot pedestrian access points, building entrances, parking areas, and other key points.



Internal circulation

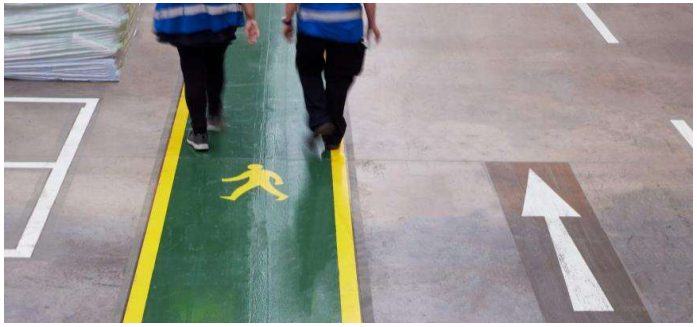
Pedestrian circulation

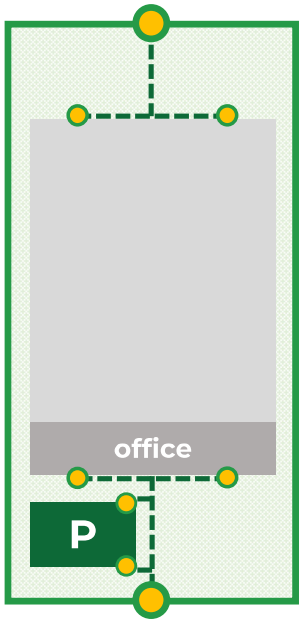
Clearly delineate pedestrian pathways from vehicular traffic to enhance safety ✓

Designing pedestrian circulation within warehouse plots is crucial for ensuring safety, accessibility, and efficiency:

2. Clear Pathways:

Clearly delineate pedestrian pathways from vehicular traffic to enhance safety. Consider physical barriers or different surface treatments to indicate pedestrian-exclusive zones.





Internal circulation

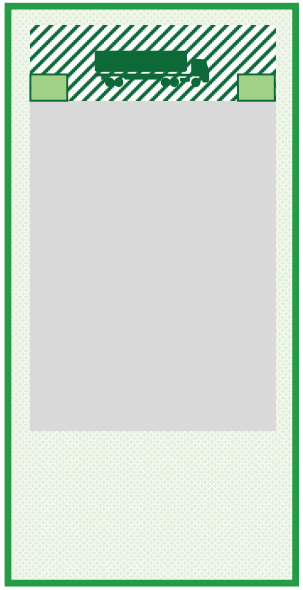
Pedestrian circulation

Designing pedestrian circulation within warehouse plots is crucial for ensuring safety, accessibility, and efficiency:

3. Pedestrians safety areas

Ensure the safety of pedestrians by clearly identifying and signalizing safety zones, particularly in areas prone to conflicts with vehicles such as loading and unloading zones, gates, and parking areas. Clearly marked safety zones enhance visibility, guiding pedestrians and alerting vehicle operators to exercise caution in these high-traffic areas, ultimately minimizing the risk of accidents and ensuring a secure environment for all.

Clearly identifying and signalizing safety zones for pedestrians ✓



Internal circulation

Pedestrian circulation

Define and prominently display maximum speed limits within the plot ✓

Speed limit of 10 Km/h is recommended within plots ✓

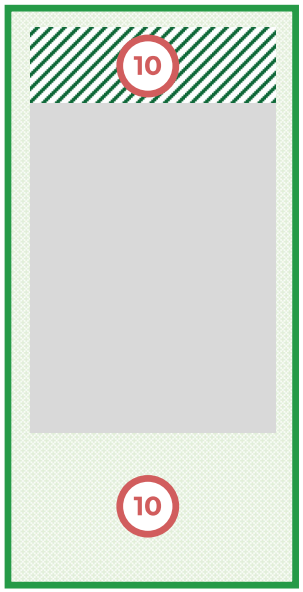
Designing pedestrian circulation within warehouse plots is crucial for ensuring safety, accessibility, and efficiency:

4. Vehicular speed limit

Define and prominently display maximum speed limits within the warehouse plot. Consider a lower speed limit in areas where pedestrians and vehicles share space.

Use clear and visible signage to communicate speed limits to drivers. Install speed limit signs at strategic locations, ensuring they are easily noticeable.

A recommended speed limit of 10 km/h is advised within the plots. This value also serves as the designated design speed for swept paths analysis.



Landscape areas

Maximum and minimum area

The area to be treated as greenery should be between 3% and 3.5% of the total plot area ✓

The greenery area should have low irrigation requirements ✓

This 3-3.5% should be designed with: ✓
- 30% to 50% composed by green area
- The remaining portion (50% or more) composed by the coverage of the tree crowns

The **open spaces** in the plot represent a space, where employees could have an open air break during the day work, and at the same time a visiting card of the company. For these reasons we imagine a greenery that creates a shaded rest island visible from the outside.

It is recommended to have **3,5% of the total plots treated as greenery**, with **low irrigation requirements**.

This surface is estimated according to water available for irrigation (Rfr. SILZ-DESI-CP10-D2B-REP-SFSP-LDSS-5002-R01-Abacus of Softscape and Irrigation Strategy).

- From **30% to 50% of the greenery has to be composed by green area**.
- The remaining portion (50% or more) of the greenery has to be composed by the coverage of the tree crowns (calculated as 16sqm/tree).

This percentage allows each company to decide to concentrate the vegetation (trees on surface covered by low vegetation) or to spread the greenery by placing single trees on the pavement (more "urban "version).


Private Green spaces

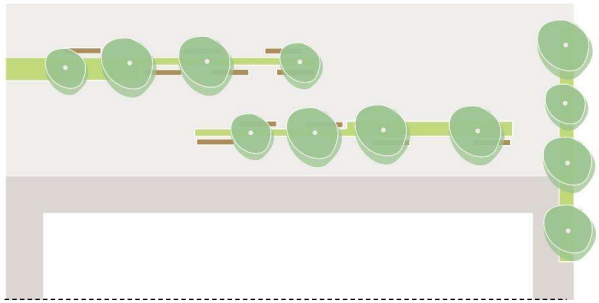

Logistics Center, Italy


Reference image

Landscape areas
Location and Design

Landscaped areas are meant to improve the general quality of the space around the facilities and create comfort for employees.

Landscaped areas **to be strategically distributed within the setback area and around the facilities to face main street frontages** and enhance the entrance of the administration components of facilities.



Schematic plan

Locate landscape areas within the setback area ✓

Locate landscape around the facilities to face main street frontages ✓

Schematic axonometric views

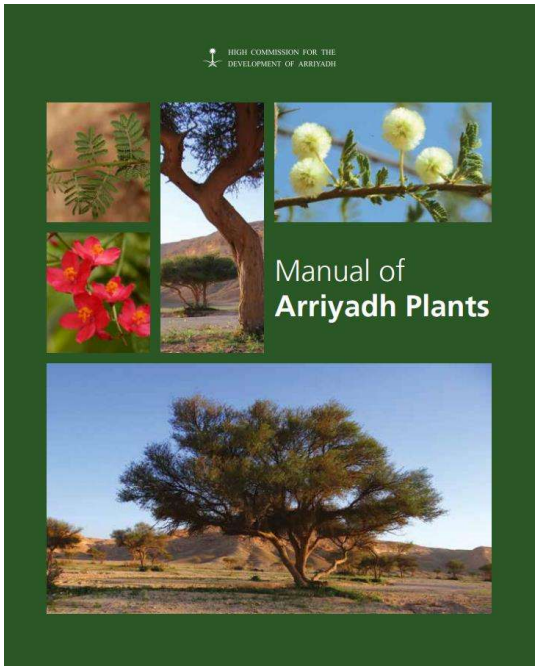
Landscape areas
Plants abacus

The plants selection to comply with the species selected from the document: "Manual of AR Riyadh Plants" - High Commission for the development of AR Riyadh, 2014-King Fahd National Library Cataloging-in-Publication Data (page 52) ✓

Landscape areas should be planted with shade trees as well as shrubs and groundcovers.

VEGETATION
Shade trees
Shrubs and subshrubs
Perennials and grasses

(for species selection, refer to Manual of AR Riyadh Plants" - High Commission for the development of AR Riyadh, 2014-King Fahd National Library Cataloging-in-Publication Data (page 52)



03.5

Plot boundary

Plot access
Guidelines

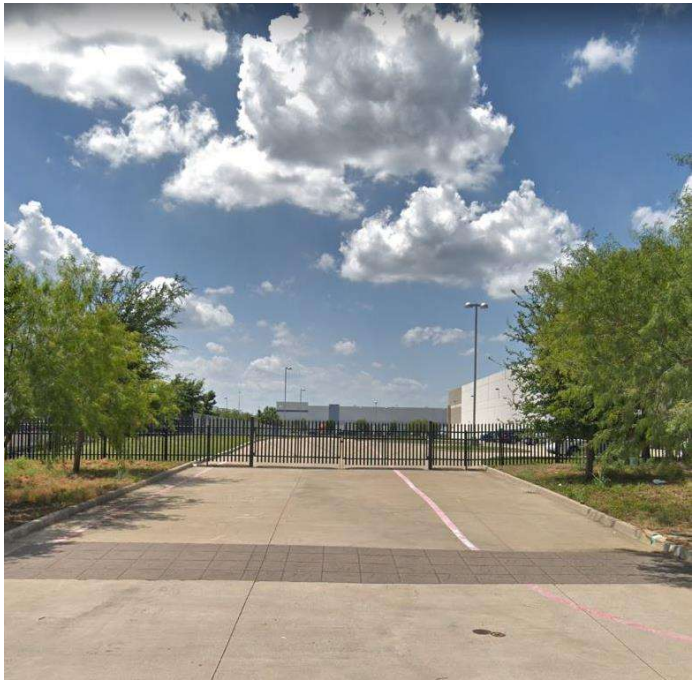
Tenants are required to strictly adhere to the plot access location and design as set out in the Detailed Master Plan (DMP).

Plot access points are located along local roads north-south in order to provide the maximum efficiency and balance based on the following criteria:

- Traffic distribution from primary network
- Turns to access plots from gates
- Reduced impact on public realm, compacting access on same roads
- Modular design of tenants' plots, considering the most efficient building layout

Small plots (5,000 sqm and 10,000 sqm) have a single access point. Larger plots have two access points from two different north-south roads, allowing for grater

Tenants are required to strictly adhere to the plot access location and design as set out in the Detailed Master Plan (DMP).



Plot access

Plot access restrictions

Access to plots is not allowed along primary network ✓

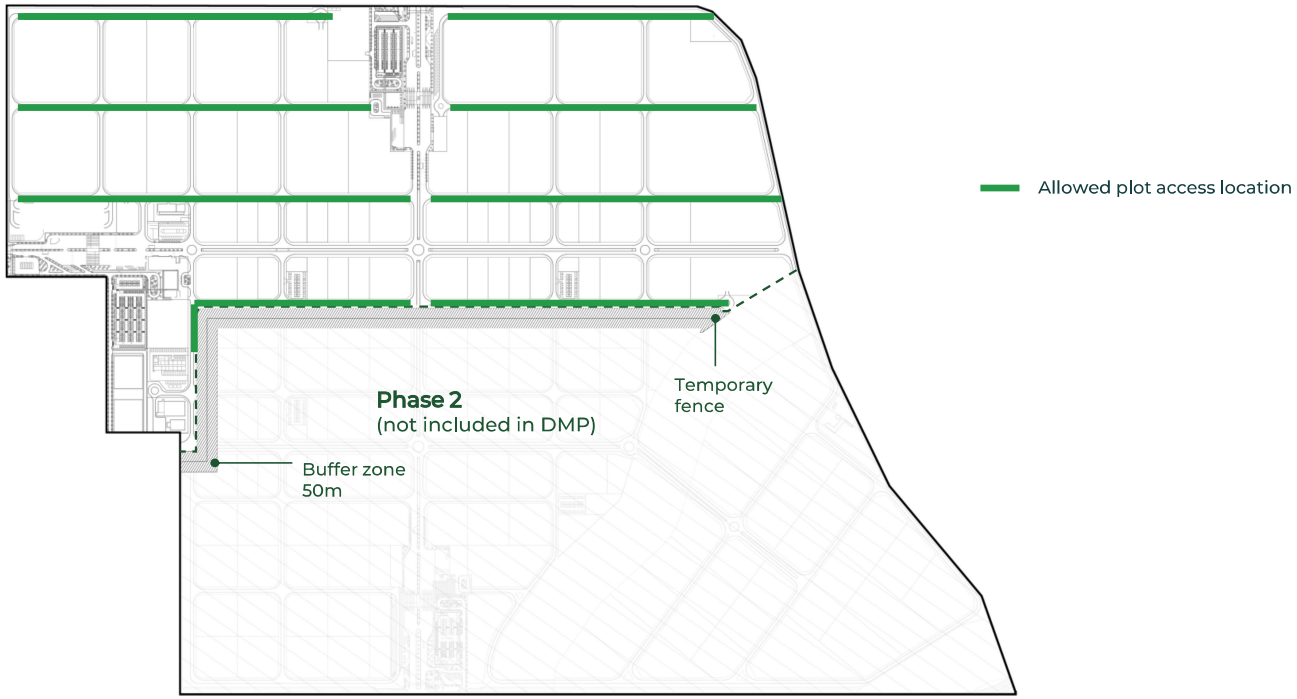
Plot access points to be located mainly along local roads north-south ✓

Access to plots is not allowed along primary network. Plot access points are located along local roads north-south in order to provide the maximum efficiency and balance based on the following criteria:

- Traffic distribution from primary network
- Turns to access plots from gates
- Reduced impact on public realm, compacting access on same roads
- Modular design of tenants' plots, considering the most efficient building layout

Exceptions are possible for plots with no or limited access from north-south roads. For these plots, access is via east-west local roads is possible.

Tenants are required to strictly adhere to the plot access location and design as set out in the Detailed Master Plan (DMP).



Plot access

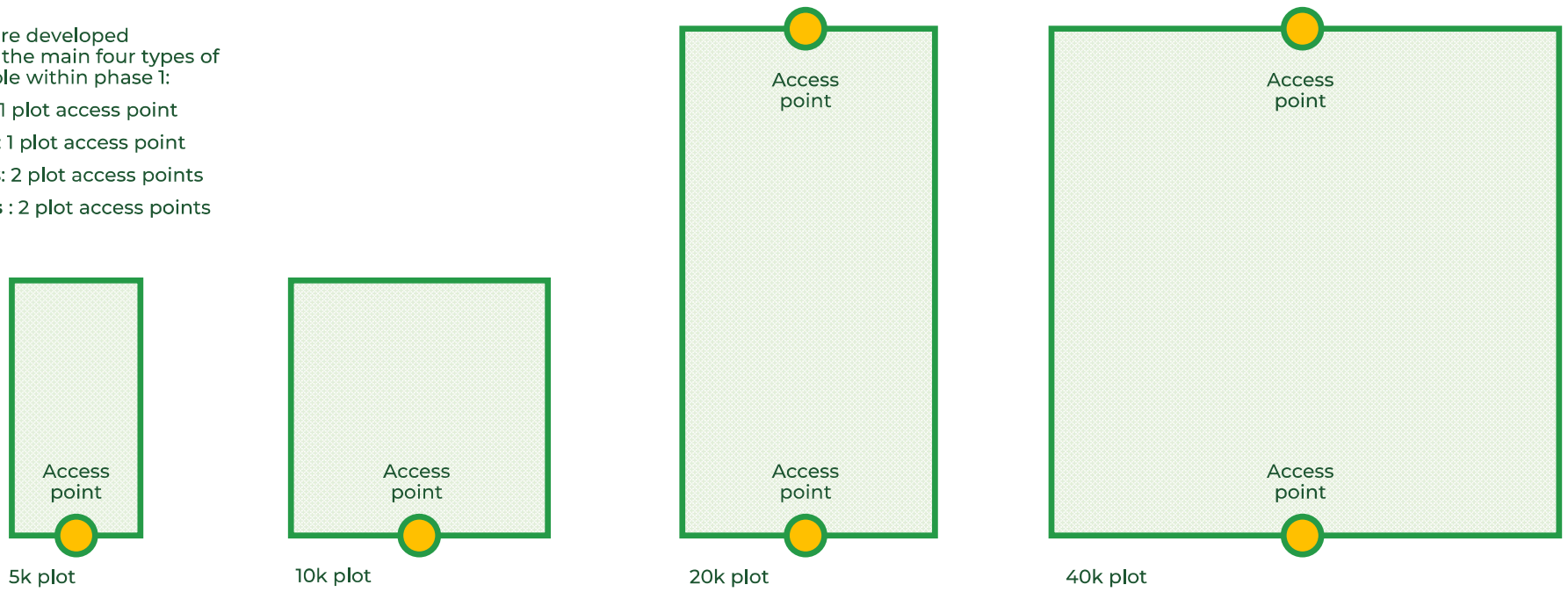
Plots typologies

5K and 10K plots can be designed with only 1 access point ✓

20K and 40K plots can be designed with only 2 access points ✓

Guidelines are developed considering the main four types of plots available within phase 1:

- **5K plots:** 1 plot access point
- **10K plots**: 1 plot access point
- **20K plots**: 2 plot access points
- **40K plots** : 2 plot access points



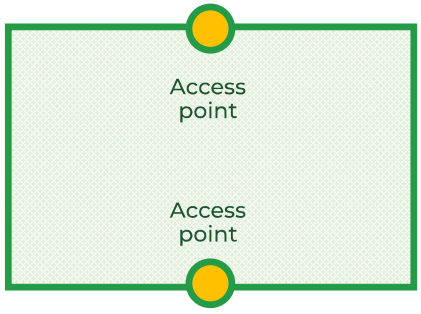
Plot access

Plots typologies

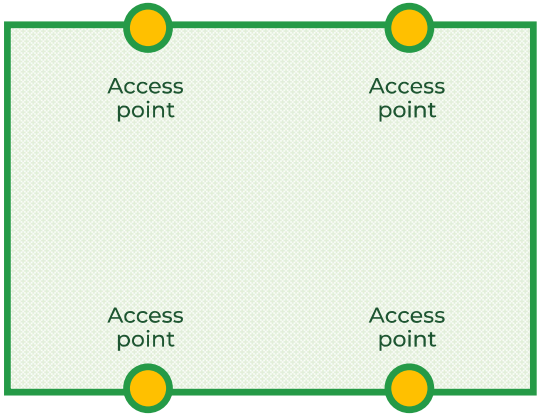
60K plots can be designed with 2 access points ✓
80K plots can be designed with 4 access points ✓
200K plots can be designed with 6 access points ✓

Below some example of Mega plots access points. The number illustrated is a minimum number of accesses needed based on the current Masterplan design, more access points can be added based on tenant needs:

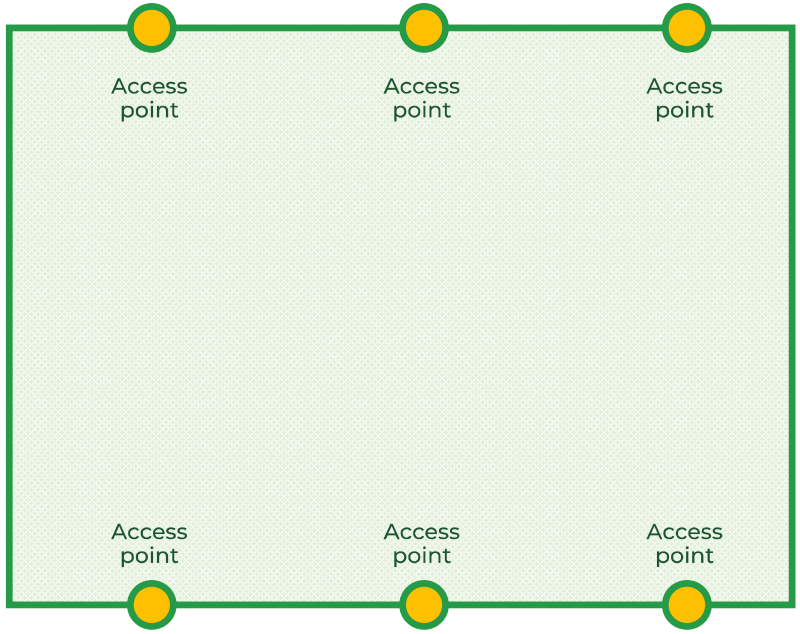
- **60K plots: 2** plot access point
- **80K plots**: 4 plot access point
- **200K plots**: 6 plot access points



60k plot



80k plot



200k plot

Plot access

Design and dimensions

Plot access must have a width of 27.9 m along the plot boundary ✓

Plot access must have a width of 45.4 m along the road curb ✓

Plot access must be designed with a turning radius of 15.3 meters ✓

Central island in the plot access with a width of 4.5 meters ✓

Tenants are required to strictly adhere to the plot access location as set out in the Detailed Master Plan (DMP) for each single plot.

Tenants must follow the following **dimensions** in the design of their plot access point and gate:

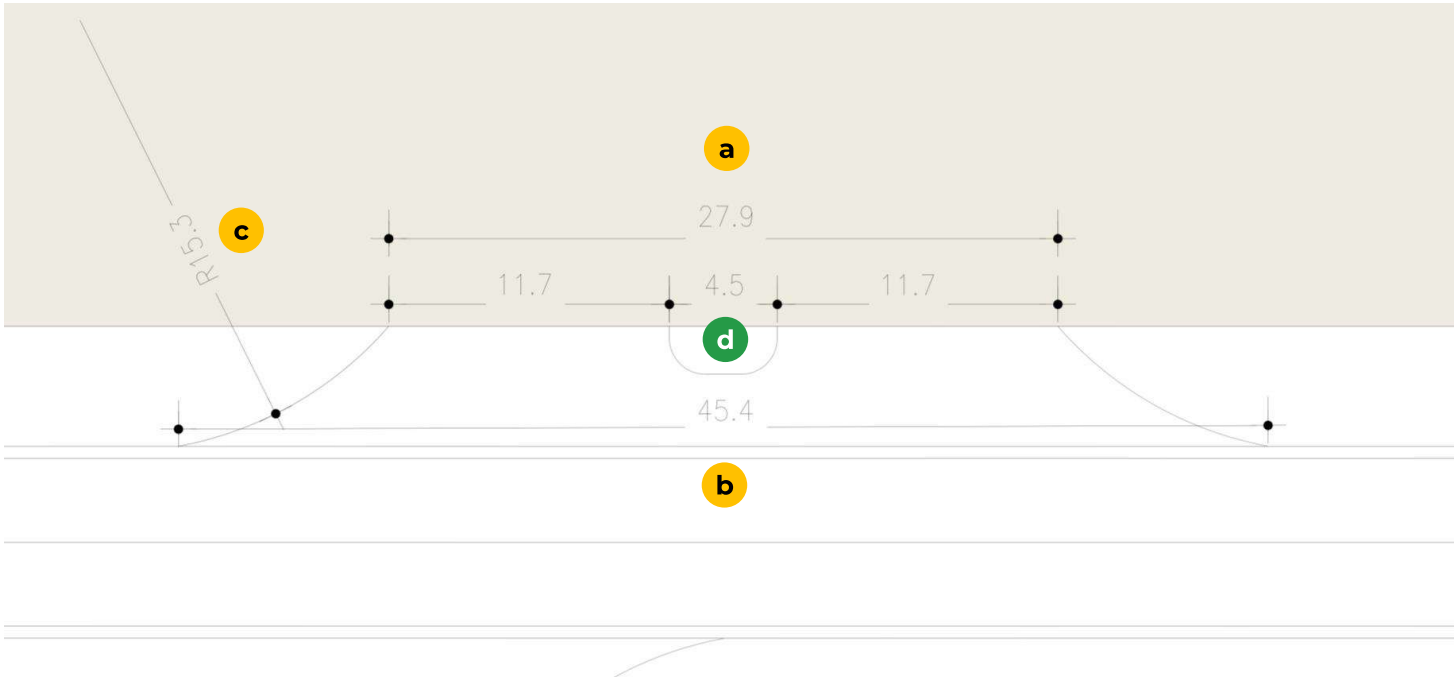
a) **width of 27.9 meters along the plot boundary**

b) **width of 45.4 meters along the road curb**

c) **turning radius of 15.3 meters**

In addition, it is recommended to:

d) Add a central island with a maximum width of 4.5 meters, which will give the possibility to integrate guardhouse consistently within this design option



Plot access
Design options

The plot access design provides 2 distinct options to accommodate the diverse needs of tenants:

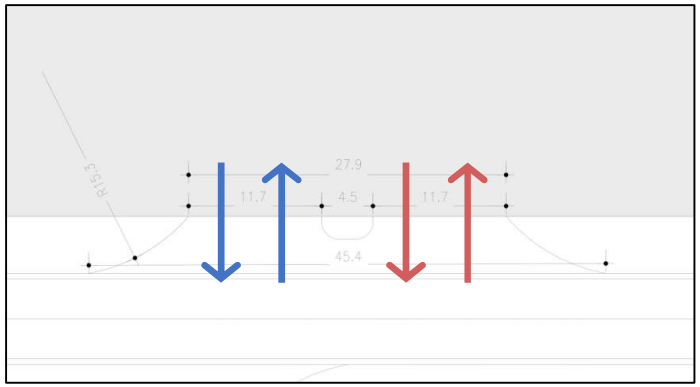
Option 1: Separate Access for Cars and Trucks (up to 18 meters)

In this configuration, dedicated access and exit points are designated for cars and trucks, ensuring smooth and efficient traffic flow. This option is particularly beneficial for tenants with specific requirements for segregating vehicular movements. If the tenant decides to increase the width of the central island, the car access should be at least 6 meters wide.

Option 2: Unified Access for Cars and Trucks (up to 25.4 meters)

We offer the option to merge access and exit points for both cars and trucks, accommodating vehicles with lengths of up to 25.4 meters. Notably, in this configuration, both cars and trucks enter and exit from the same side.

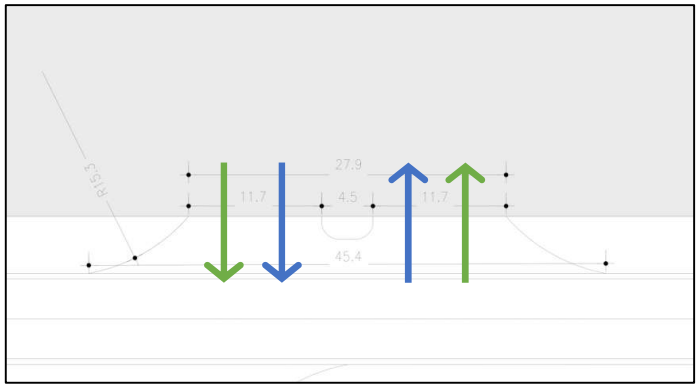
The location of truck and car access depends mainly on the internal configuration of the site, in particular the location of car parking and loading/unloading areas.



Option 1:

Separate Access for Cars and Trucks (up to 18 meters)

Cars Trucks 18m



Option 2:

Unified Access for Cars and Trucks (up to 25.4 meters)

Cars Trucks 25m

Plot access

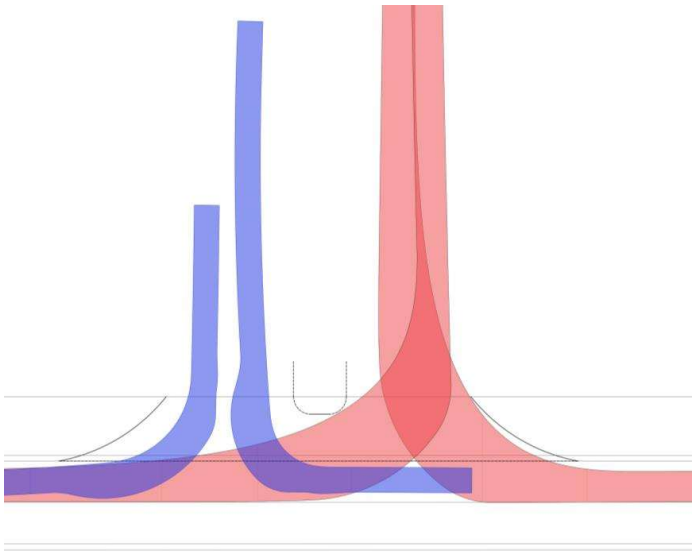
Car and Trucks access

The plot access allows for two uses:

1) 15m truck (max.) entrance and exit from one side and small vehicle entrance and exit from the other side

2) Double semi-trailer truck entrance from one side and exit from the other

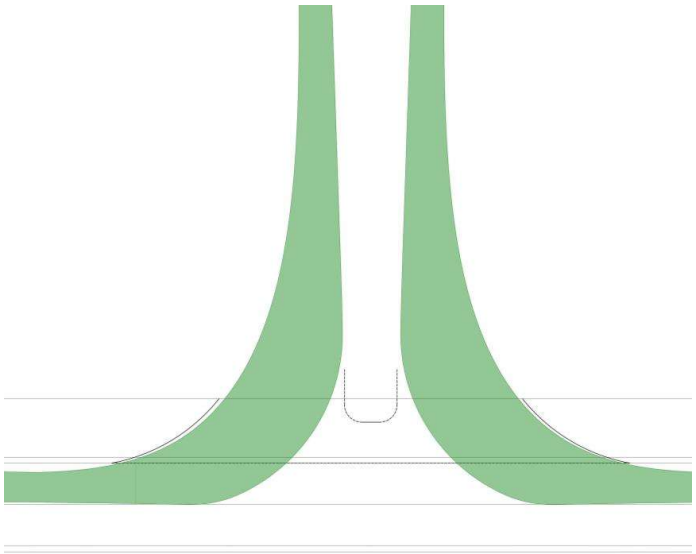
These options aim to provide the utmost flexibility to tenants, allowing them to choose the access configuration that best aligns with their operational needs.



1) Single trailer truck and small vehicle

Car access

15m truck access



2) Double semi-trailer truck (25.25m)

25.25m truck access

Plot access

Pedestrian access

Provide at least one pedestrian access for each plot ✓

For plots facing streets on more than 1 side, it is recommended to provide 2 pedestrian access to plot ✓

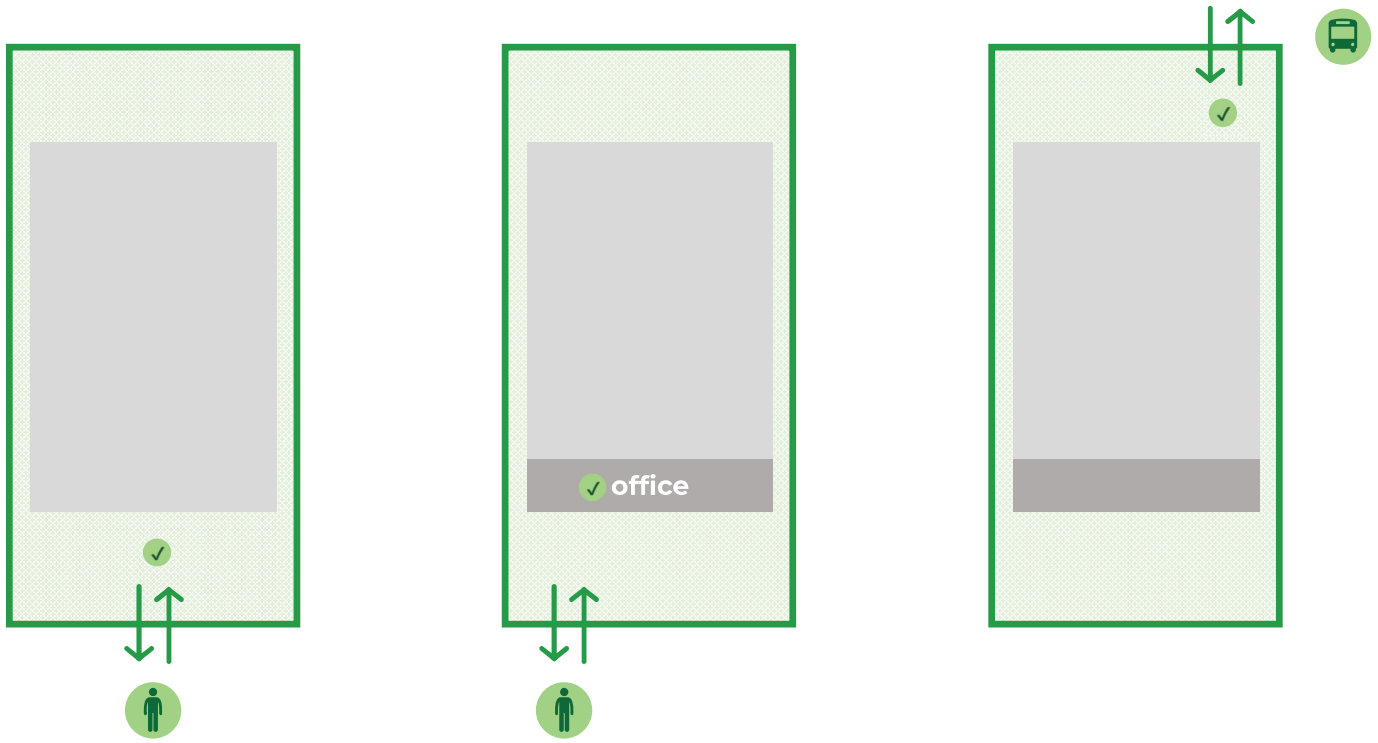
Recommended to located pedestrian access points on the office front side and near shuttle stops ✓

Pedestrian access to plots from roads are required for each plot:

- At least one pedestrian access is required for each plot.
- For plots facing streets on more than 1 side, it is recommended to provide 2 pedestrian access to plot, increasing comfort of pedestrians.

For optimal accessibility and convenience, it is advised to locate pedestrian access points in the following areas:

1. **Combine with Vehicular Gate**: Integrate pedestrian access points with vehicular gates to streamline entry and exit for both pedestrians and vehicles.
2. **On the Office Front Side**: Place pedestrian access points strategically on the office front side for easy and direct access to office spaces.
3. **Near a Shuttle Stop**: Consider positioning pedestrian access points in proximity to shuttle stops, facilitating seamless connectivity for employees.



Fence

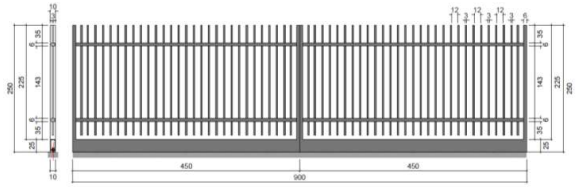
Plot Entrance Gates/ Fences Design

Height of fence and plot gates is 2.5 meters from adjacent sidewalk ✓

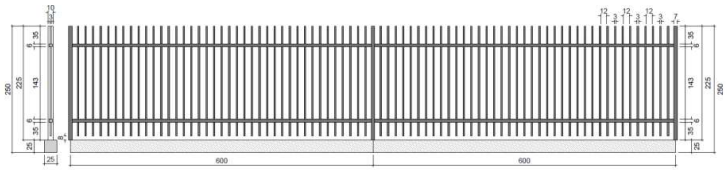
Fence design must be modern and transparent (an opacity of maximum 50%) ✓

1. The **height of plot gates** is identical to the height of plot fences at **2.5 m from adjacent sidewalk.**
2. Plot gates should be designed so as to fit with the form of the plot fences, while taking into consideration **simplicity and innovation in design and using modern techniques for security measures**. Dimension & number shall respect set guidelines for Plot Access.
3. **Fence design must be modern and transparent**, with an opacity of maximum 50% (see figures on the right).
4. The design of the warehouse should take into account providing special entrances for people with disabilities.

Gate Design



Fence Design



03.6

Universal access

Universal access
General principles

Designing a warehouse plot with universal access involves considering needs of individuals with diverse abilities to ensure that everyone can navigate and use the facilities comfortably and safely.

a. Inclusive Design Approach: Embrace an inclusive mindset in the design process, involving diverse stakeholders, including people with disabilities.

b. Compliance with Standards:

Fulfilling people with disabilities requirements with the aim of facilitating their movement, and creating conditions and spaces suitable for their use in accordance with the requirements of the Saudi Building Code 201-SBC (Chapter 1009 and Section 11) and according to the guide issued by the King Salman Center for Disability Affairs.

c. Diverse User Needs:

Recognize and accommodate a wide range of abilities, including mobility, vision, hearing, and cognitive impairments.

Universal access
General guidelines

All sidewalks, pavements, paths and routes intended for the use of general staff and the public should comply with this section.

a) Plot access points. A minimum of one accessible route shall be provided to each building or facility's accessible entrance from any of the following that serve it:

- accessible parking spaces and accessible passenger loading zones
- streets and sidewalks; and
- public transportation stops (shuttle stops).

b) Within the plot. A minimum of one accessible route shall connect accessible buildings, accessible facilities, accessible elements and accessible spaces that are on the same plot.

c) Multi-storey buildings and facilities. A minimum of one accessible route shall connect each story and mezzanine.

d) Spaces and elements. A minimum of one accessible route shall connect the accessible entrances of a building or facility with all accessible spaces and elements within the building or facility.

e) Accessible routes shall be integrated with, or be located adjacent to, general circulation routes available to building users.

f) Signage indicating accessible and general circulation routes shall be provided.

Universal access
Accessible routes

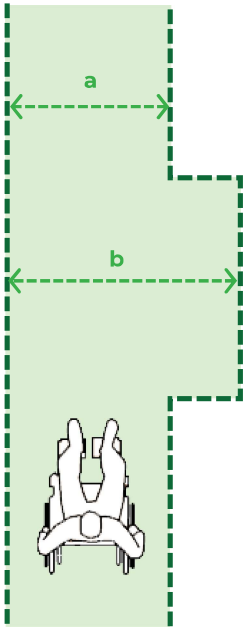
The clear width of accessible routes should be a minimum of 1.2m or 1.8m (if space is required for 2 wheelchairs) ✓

Passing spaces to be provided every 30 meters if clear width is less than 1.8m ✓

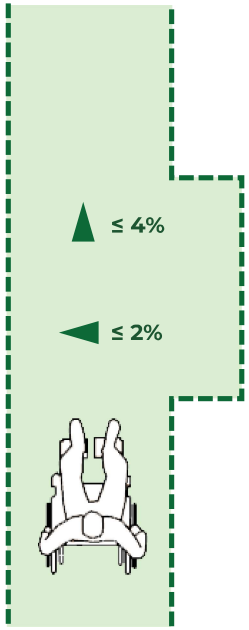
Running slope should not exceed 4% and Cross slope should not exceed 2% ✓

Accessible routes should be linear and continuous. Minimizing frequent changes in direction along the route is recommended to enhance accessibility.

1. **Clear Width (a):** The clear width of accessible routes should be a minimum of 1200 mm. Where space is required for two wheelchairs to pass, the minimum clear width of the accessible route should be 1800 mm.
2. **Passing Places (b):** When the clear width of an accessible route is less than 1800 mm, unobstructed passing spaces should be provided and should measure at least 1800 mm in width and 1800 mm in length and be spaced at no more than 30 metres apart.
3. **Slope**: The running slope of accessible routes should not exceed a 1:25 ratio(4% slope). The cross slope should be avoided but where necessary be no steeper than a 1:50 ratio (2% slope). Note: Accessible sidewalks, pavements, paths or routes with a slope steeper than a 1:25 ratio (4% slope), are classified as a ramp and are to be designed to comply with ramps guidelines provided in the next pages.
4. **Surfaces:** Wall surfaces along accessible routes should have non-abrasive surfaces. Highly reflective wall surfaces or wall and floor that produce high levels of glare should be avoided. Ground surfaces along access routes should not be heavily patterned or contain counter-intuitive patterning.



Clear width and passing places



Slope

Universal access
Ramps

Sections of accessible sidewalks, pavements, paths, or routes featuring a running slope exceeding 1:25 (4% slope) are considered ramps and should adhere to guidelines outlined in this section. When incorporating ramps, it is advisable to consider an accompanying set of stairs in close proximity.

1. **General:** Accessible ramps should be located on accessible routes in compliance with previous pages.
2. **Running Slope:** The running slope of a ramp should be between 1:16-1:25.
3. **Horizontal Length of a Ramp**: The maximum horizontal length of a ramp, measured between ramp landings, should not exceed 9 meters.
4. **Cross Slope:** Cross slopes should be avoided. Where they cannot be avoided, the maximum cross slope of ramp surfaces should be 1:50.
5. **Ramp and Landing Surfaces**: Ramp and landing surfaces should be firm, stable, and slip-resistant.
6. **Landing Slopes**: Level landing areas should be provided at the top and bottom of all ramps and where the ramp changes direction. The maximum slope in any direction on a landing should be 1:50
7. **Landing Size at Top and Bottom**: The top and bottom landings should be at least 2100 x 2100 mm.
8. **Intermediate Landing Size**: In U-shaped ramps, switchback landings should be at least 1800 mm deep and 2400 mm wide. For L-shaped ramps, corner landings should have a minimum depth and width of 1800 mm. Straight ramps should feature intermediate landings with a minimum depth of 1800 mm.

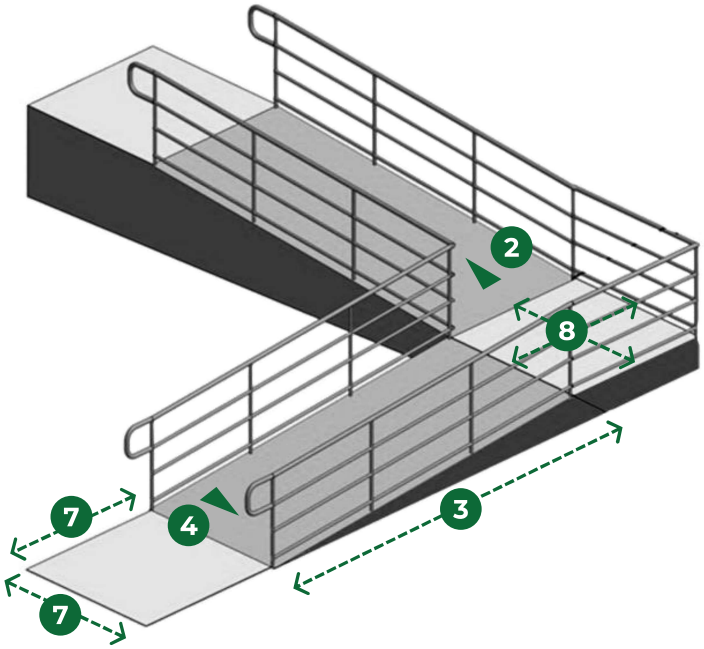
Ramp running slope should be between 1:16-1:25, and maximum cross slope should be 1:50 ✓

The maximum horizontal length of a ramp should not exceed 9 meters ✓

Landing areas (2.1 x 2.1m) should be provided at the top and bottom of all ramps ✓

Intermediate landing areas should be 1.8x1.8m on straight and L-shaped ramp ✓

Intermediate landing areas should be 1.8x2.4m on U-shaped ramp ✓



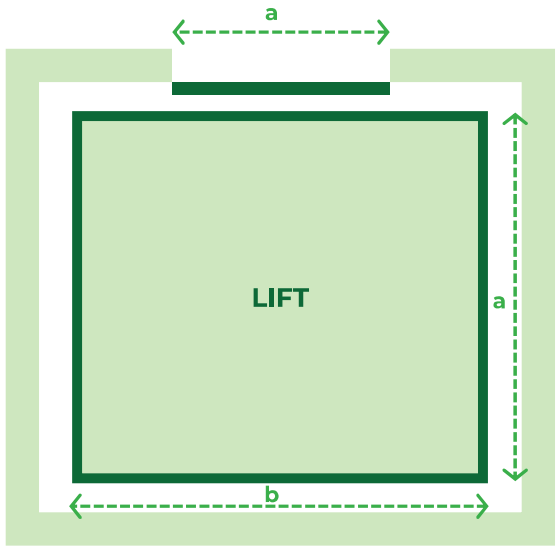
Universal access
Lifts

The clear width between lift doors, when in the open position, should be a minimum of 900 mm ✓

Minimum lift cab interior dimension should be 1.725m x 1.525m ✓

Every level in multi-storey facilities, including mezzanines, serviced by a passenger lift should comply with this section. Freight lifts are exempt from the requirements of this section, unless the only lift provided is both a passenger and freight lift used by the public and employees.

1. **General**: Accessible lifts should be located on accessible routes in compliance with previous pages. Where a lift serves only two floors, it should be provided with a system to sense entry into the cab and to move automatically to the next floor without the need for manual activation. Lifts should comply with all applicable current standards for installation.
2. **Clear Width of Doors (a):** The clear width between lift doors, when in the open position, should be a minimum of 900 mm.
3. **Doors and Opening Time**: Lift doors should slide horizontally, and open/close automatically. Lift doors should remain open for a minimum of 8 seconds under automatic operation with an optional manual close button to allow users to override the waiting time
4. **Lift Levelling Device**: Lifts should incorporate a two-way automatic-levelling device to maintain the cab floor elevation to within ± 13 mm of the floors that it serves.
5. **Interior Cab Dimensions**: The lift cab interior width, measured between opposing side walls should be a minimum of 1725 mm wide **(b)**, measured between the rear wall and door, excluding return panels, a minimum of 1525 mm deep **(c).**



Universal access
Parking

These guidelines are intended to apply to all new parking structures and surface parking areas.

1. **Number of parking spaces**: The minimum number of designated parking spaces for PRM should be in accordance with the General Saudi Building Code (201-SBC).
2. **Location**: Designated accessible spaces should be located at the shortest distance to the accessible entrance that it serves, or the closest accessible entrance where multiple locations are served. Designated parking spaces should be located adjacent to an accessible route in compliance with previous pages.
3. **Path of Travel**: The path of travel from the designated accessible parking spaces to the accessible entrance should minimize crossing of vehicular and pedestrian traffic flows. Access to the adjacent accessible route from the accessible parking space should be via the required access aisles at the accessible parking space.
4. **Identification Signage**: Designated parking spaces should be capable of being identified clearly from a distance. Such signage should measure at least 300 mm wide by 450 mm high and should include the International Symbol of Access. Signs should be mounted vertically on a post that is color contrasted with the surrounding environment and should be installed at a height of at least 2100 mm from the ground, measured to the bottom of the sign. For perpendicular parking spaces, signs should be centred across the parking space, and for parallel parking spaces, signs should be located toward the head of the parking space.

Minimum number of parking spaces for PRM to be provided ✓

Total Parking Provided	Required Minimum Number of Disabled Bays
1 to 25	1
26 to 50	2
51 to 75	3
76 to 100	4
101 to 150	5
151 to 200	6
201 to 300	7
301 to 400	8
401 to 500	9
501 to 1,000	2% of total
1,001 and over	20, Plus one for each 100 or fraction thereof, over 1,000

Universal access
Parking

PRM parking spaces to be designed according to provided dimensions ✓
Accessible parking spaces should have an access aisle adjacent to it that measures 2100 mm wide ✓
Parking should have a maximum 1:50 (2%) for both running and cross slopes ✓

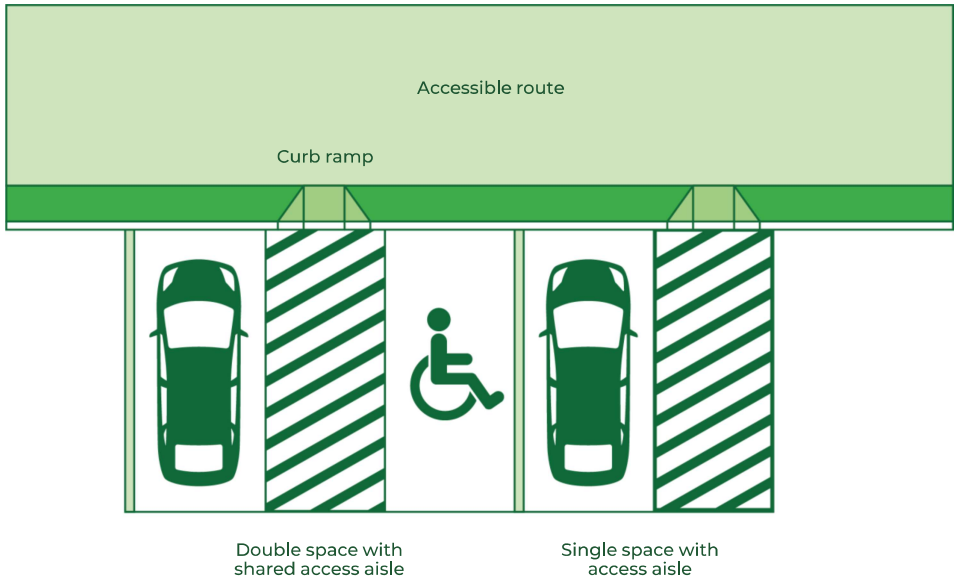
1. **Dimensions**: Accessible parking spaces should be designed according to the dimensions provided in the table on the right for each parking typology.
2. **Access aisle**: Accessible parking spaces should have an access aisle adjacent to it that measures 2100 mm wide and that extends the entire length of the parking space. It should be clearly marked to prevent obstruction.
3. **Floor and ground surfaces** at designated parking spaces and adjacent access aisles should have a firm, stable surface with a maximum 1:50 (2%) for both running and cross slopes.
4. **Pavement Markings**: parking spaces should include pavement markings that contain the International Symbol of Access. Pavement markings should measure 1500 x 1500 mm with a white border and blue background

Vertical/Perpenicular parking	
Parking stall dimension	2.4 x 6.1m
Access aisle dimension	2.1 x 6.1m

Longitudinal/Parallel parking	
Parking stall dimension	3.9 x 5.4 m
Access aisle dimension	2.1 x 5.4 m

Diagonal/Angled parking	
Parking stall dimension	2.9 x 6.35m
Access aisle dimension	2.1 x 6.35m

MOMRA Parking Design Guide 2023: The dimensions of the parking lots designated for persons with disabilities and the older persons shall be in accordance with the elements mentioned in the simplified guide to universal accessibility standards, in a manner that does not conflict with the Saudi Building Code.



Universal access
Additional guidelines

Pedestrian gates

All gates, turnstiles, and openings should comply with this section.

1. **Gates or Openings** to Public Use Areas: Gates or openings to public use areas should have a minimum clear unobstructed width of 900 mm.
2. **Turnstiles** or Other Ticket Controlled Devices: Where turnstiles or other ticket controlled devices are installed, an accessible gate or opening should be provided in close proximity.

Building entrances

All entrances intended for use by staff and/or the public should comply with this section.

Entrances should accommodate the full range of people who will use a facility. A separate accessible entrance does not promote the spirit of inclusion and should be avoided to respect the independence and dignity of people with disabilities.

Signage

The use of guiding signs to direct workers and employees in parking lots, corridors and yards, according to what was stated in Chapter (9,10,11-1009) of the General Saudi Building Code (201-SBC), and exit signs must also be used to direct to escape routes and assembly yards, according to what It is mentioned in Chapter (1013) of the General Saudi Building Code (201-SBC).

Toilets

Provide 5% of WC & Washbasin count for people w/ disabilities not less than 1 WC & Washbasin, it is necessary to provide an additional Washbasin in the event of the availability of only 1 washbasin that exists within a people w/ Disabilities Toilet in line w/ item (11) of Saudi Building Code (SBC-201) requirements

03.7

Wayfinding

Wayfinding

Examples of a brands impact and application on the signage

Wayfinding
Numbering

All numbers and codes to be visible from street/road view ✓

Numbering on entrance door should be present ✓

Each warehouse will have a unique number/code.

Numbering strategy to follow the preferred option for numbering and zoning.

The numbers shown here are only indicative of the space allocated and do not reflect any design.

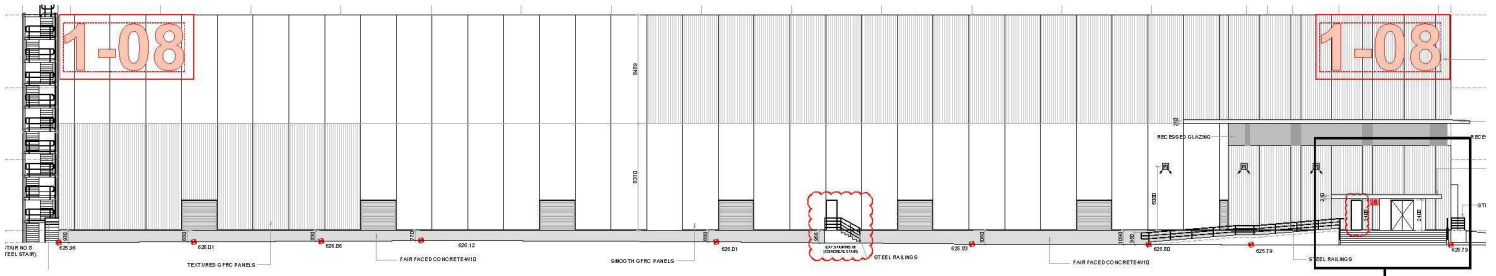
Vehicular

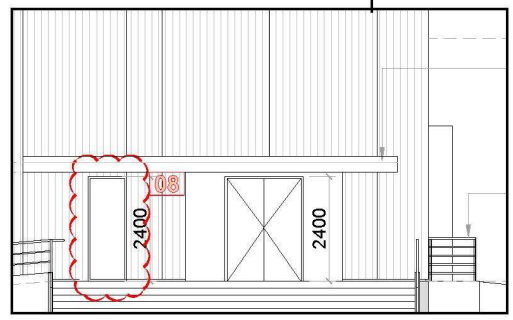
All numbers and codes to be visible from street/road view, some warehouses will only need 1 big number and some larger ones could need 3 instances of numbering for a clear legibility by cars and trucks for a clear navigation and to avoid any confusion.

Pedestrian

Numbering on entrance door should be present as an affirmation of the right destination.

Vehicular level





Pedestrian flat view

Wayfinding
Brand application

Technical numbering of warehouses to be included within the façade application. ✓

The tenants should take into consideration the upper area for their logos/brand name ✓

No free standing totem and roof top signs are allowed for identification ✓

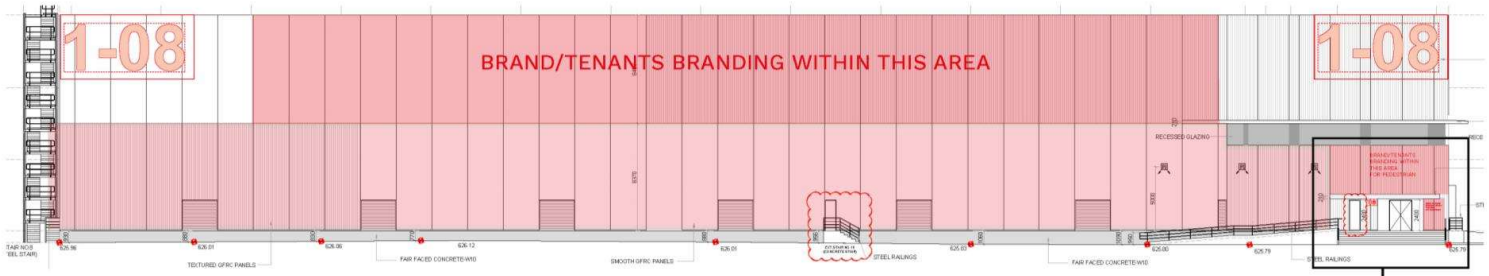
Each brand should follow their own branding guidelines and could have the colors of their respective brand.

Branding application should take into consideration the technical numbering of their warehouses to include it within their façade application.

The tenants should take into consideration the upper area for their logos/brand name and leave the bottom space for solely brand paint colors if need.

The brand should be shown at eye level at the entrance door for pedestrian approaching the warehouse.

Vehicular



Pedestrian

Dont's

No free standing totem are allowed for identification as it will only create clutter at eye level which won't align with the vision of the whole look and feel of the premises.

No roof top signs.

Wayfinding
Number and Brand

Plot number to be clearly visible to the streets ✓

The brand of the warehouse/tenant to be clearly identified and not to conflict with the number ✓

All warehouse signage to require power provisions for it to provide backlighting to the signs ✓

1-Plot Number

- To be clearly visible to the streets.
- To maximize the location and size of the number.

2-Brand

- The brand of the warehouse/tenant to be clearly identified and not to conflict with the number.

All warehouse signage to require power provisions for it to provide backlighting to the signs

Wayfinding
Technical needs

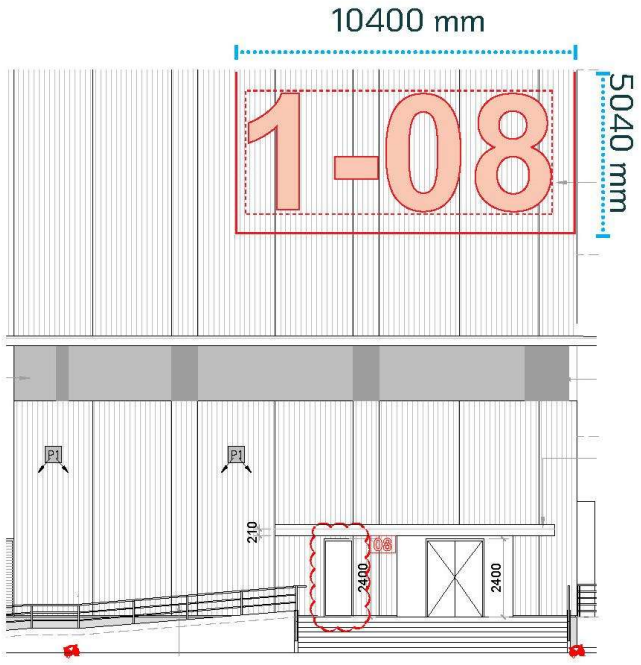
Façade mounted with hidden fixation. Bolts and nuts galvanized. Wall fixation to be assessed by the fabricator according to a) weight of the sign and b) wall properties.

The fabricator is responsible for making all impacted surfaces to the same existing standard, colour and materiality to ensure a seamless layout for all signage.

Fabricator to assess fixation structure, material and maintenance provisions.

Fabricator to provide wind load calculation and study the materiality, lighting, weight and fixation of the free-standing signs. Brackets and fixations are to be designed by the fabricator.

All messages are to be agreed upon with the employer. Measurements and sizes are to be studied on location, and verified according to the requirements of local authorities.



Wayfinding
Technical needs

Built-up light box of 150 mm depth with an internal steel frame structure. ✓

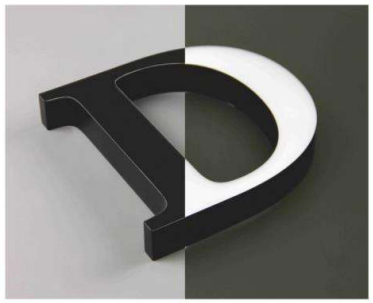
Front and back diffused acrylic with high quality 3M ✓

Built up channel letters

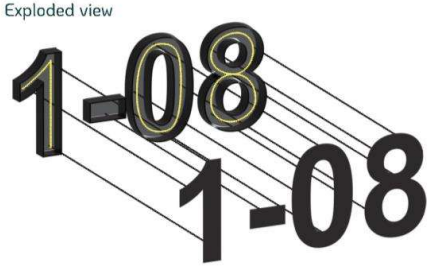
Built-up light box of 150 mm depth with an internal steel frame structure. Front and back diffused acrylic with high quality 3M or equivalent router cut acrylic day and night film applied to the front face.

Lighting system to be defined based on light power and feasibility with fabricator. Light intensity and temperature: warm temperature and has uniform light strength on the acrylic panel. The lighting fixture to have fixed metal brackets. Transformer placement to be taken into consideration by the fabricator in a concealed manner either with the foundation or within the sign. A dimmer switch should also be provided to fine-tune the light intensity on site.

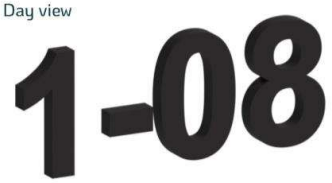
Reference for construction



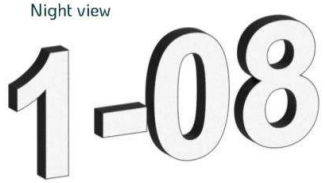
Exploded view



Day view



Night view



Wayfinding
Technical needs

Please be informed that smoking inside the facility in the zone is totally prohibited. We urge you to follow the policy regarding the smoking regulations as following:

[A04] Smoke Free Environment

Exposure to tobacco smoke is an important cause of ill health for both smokers and those exposed the secondhand smoke.

Inhalation of tobacco smoke can lead to significant health issues, such as asthma attacks, respiratory infections, coronary heart disease, stroke, and cancer. The most effective way to limit exposure to tobacco smoke at SILZ is to provide a 100% smoke-free environment for occupants in both indoor and outdoor spaces.

Mandatory Requirements

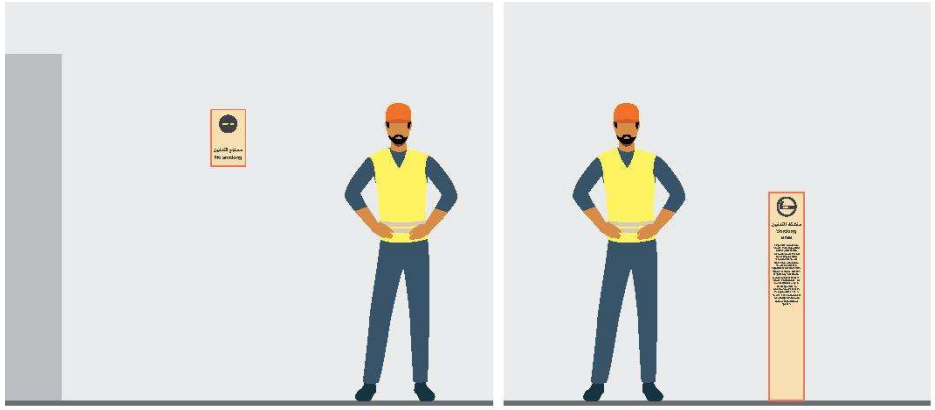
- Indoor: Smoking and the use of e-cigarettes is prohibited in interior spaces.
- Outdoor: Smoking is prohibited within 7.5m of all entrances, operable windows, and building air intakes – or in a designated smoking area.
- Signage: Signage to be provided to clearly communicate these bans.
- Smoking within units/facilities is strictly prohibited.
- Tenants must abide by any pertinent SBC requirements / other applicable regulations.

1-No smoking signs

To exist in the facility in public areas.
To exist on the entrance doors.

2-Smoking area signs

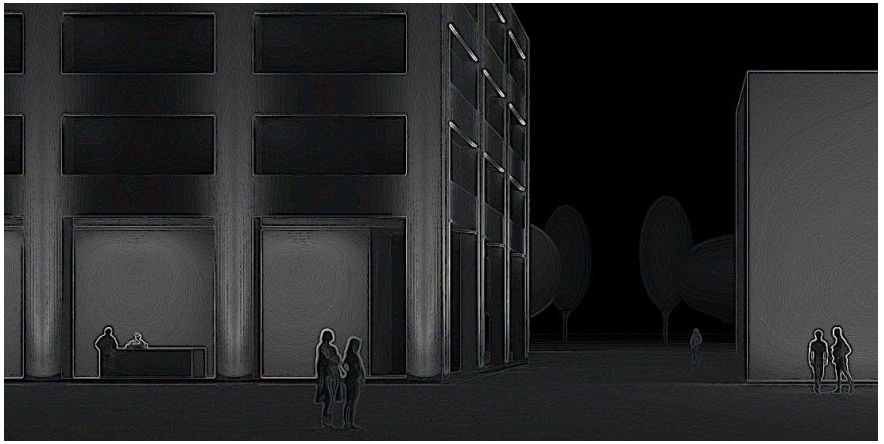
To exist outdoors away 10m from the entrance door of the facility with a clear defined space.

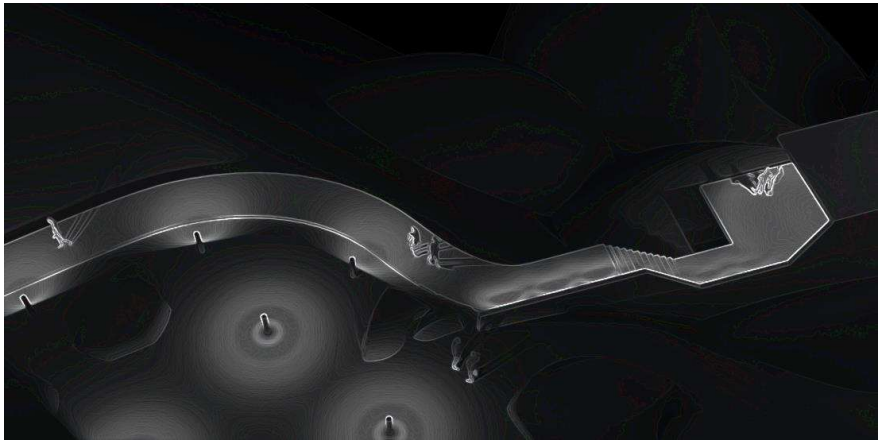


03.8
Lighting

Lighting
Introduction

This document outlines comprehensive guidelines for tenants within the masterplan, aiming to establish a harmonious, well-lit community environment. These guidelines prioritize standards of aesthetics, sustainability, and safety.





Lighting

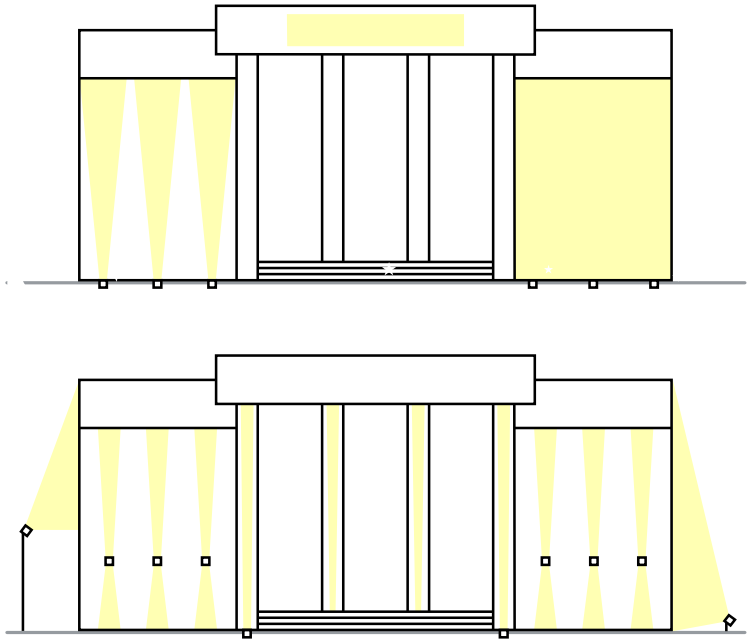
Unified aesthetic integration

1. **Design Cohesion**: Ensure that exterior lighting fixtures seamlessly integrate with the predetermined aesthetic theme of the masterplan.
2. **Color Palette Consistency**: Maintain consistency in the color palette of lighting fixtures to create a harmonious visual experience throughout the masterplan.
3. **Architectural Harmony**: Align lighting designs with the architectural elements of the masterplan. Lighting fixtures should complement rather than detract from the architectural features, enhancing the overall visual harmony. Refer to the next slide titled "Facade lighting integration" and to the slide titled "General lighting guidelines: precision illumination and dark sky"
4. **Nighttime Atmosphere**: Consider the desired nighttime atmosphere when selecting lighting fixtures. Aim for a balance that enhances visibility while preserving a warm and inviting ambiance during evening hours. Refer to the slide titled "Recommended color temperatures, CRI and efficacy"

Lighting

Facade lighting integration

1. Facade lighting must mirror the design of the masterplan facades, ensuring it does not exceed the overall brightness of the area (pre-curfew building L ave should not exceed 10 cd/m2)
2. Up and down building mounted wall lights are not permitted, unless otherwise coordinated by the lighting consultant.
3. Tiltable ground recessed or surface mounted linear lights may be used to create grazing effect that highlights the texture of large façade materials (e.g., timber, stone). These fixtures must be angled toward the surface to prevent direct upward light without a ceiling or canopy to mitigate light pollution.
4. If a canopy is present, fixed linear uplights or up-and-down wall lights are permitted.
5. uplights are to be shielded in a way to eliminate glare and light trespass or the beam angle to be aimed to fall precisely within the intended lighted area with a maximum of 1700lm (cob led).
6. Adjustable ground recessed luminaires with narrow optics can be used to accentuate small façade details.
7. For highlighting vertical or horizontal façade logos projectors with elliptical light distribution are to be used.
8. To emphasize overall architectural dimensions, uplights with a wall washing effect are recommended.



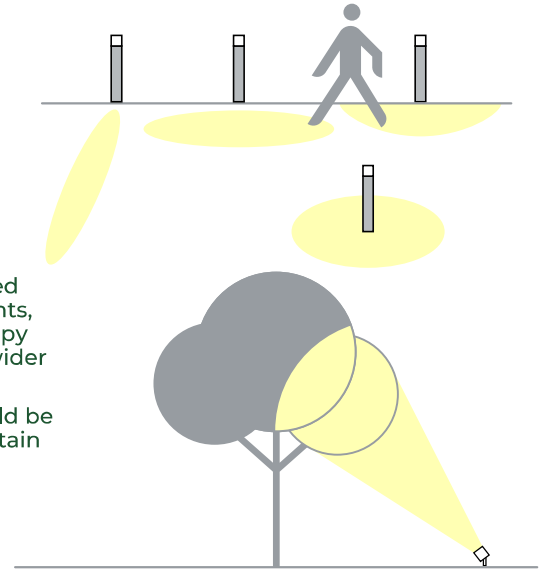
Lighting

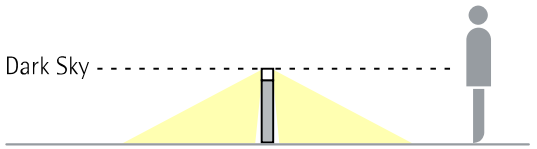
Landscape lighting integration

1. Integrate landscape lighting designs with existing green spaces to create a cohesive outdoor environment. Lighting should enhance the natural beauty of the landscape without overpowering it.

2. A specific illumination of trees was carried out by using in-ground uplights and projector floodlights placed underneath or within the trees:
    - if the ground below the plantation is composed of soil or gravel, the installation of uplights is required, ensure a minimum depth of 20cm of gravel beneath the fixture to prevent it from sinking into the soil and to ensure a proper drainage.
    - in case the fixture is surrounded by shrubs, spike projectors are necessary to ensure a proper, durable and stable installation of light.

3. Depending on the type of tree canopy and trunk, different installations are applied:
    - Palm trees are illuminated with narrow beam uplights, as opposed to wide canopy trees which are lit with wider beam uplights
    - All projector cables should be completely hidden to obtain discrete detailing

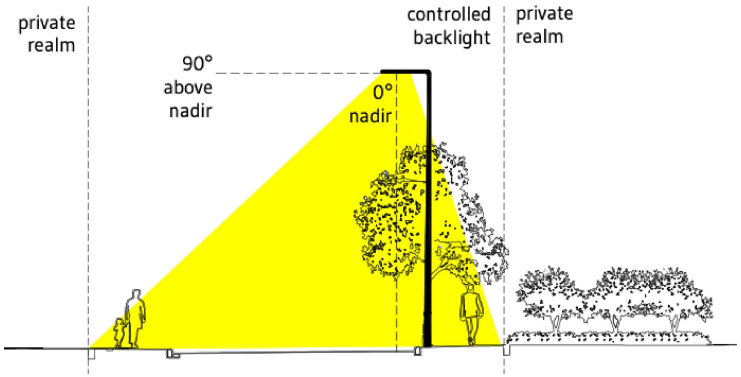


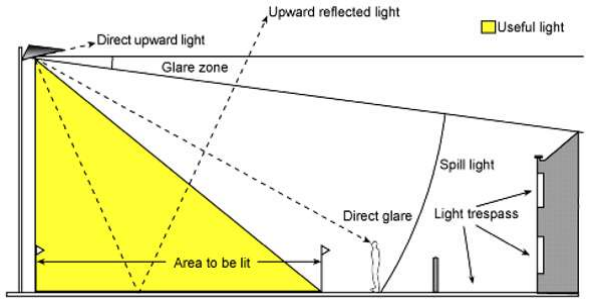


Lighting

General lighting guidelines: precision illumination and dark sky

1. Sky glow, Glare, and light intrusion (trespass), are all forms of obtrusive light which may cause nuisance to others and waste energy
2. the proper selection of efficient light sources and exact amount of light needed, are both important factors in the reduction of obtrusive light.
3. Also, the selection of the lighting equipment should be taken into consideration; all light fixtures should be fully shielded or include special glare control accessories to minimise glare and be utilised with dimming control for off-peak time periods. Implement motion sensors and timers to control lighting based on actual need.
4. the main beam angle of light fixtures directed towards any potential observer should not exceed the angle of 70°





Lighting

General lighting guidelines: precision illumination and dark sky

Our lighting study ensures the reduction of light pollution based on the points listed below, therefore, in the coming phases of the project, it is important to follow these regulations:

1. choose the right luminaire specification and intensity. Achieve a balance between uniformity and contrast in lighting design to enhance visibility while avoiding over illumination. Use softer lighting in residential zones and brighter, more functional lighting in common areas

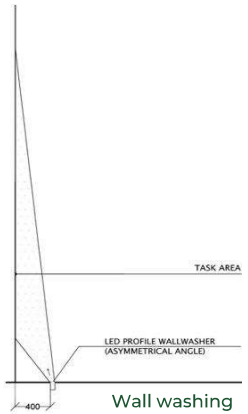
2. choose only fully-shielded or fully cut-off lighting fixtures

3. place the luminaire in the right application and direction (aiming the beam angle to fall precisely within the intended lighted area)

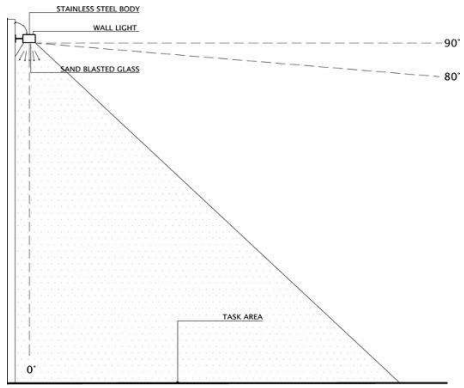
4. choose only lighting optics with precision illumination and controlled back-lighting in order to light the area needed without trespass or spill

5. Allow flexibility in lighting design to accommodate future changes and improvements. Ensure that any modifications adhere to established lighting guidelines.

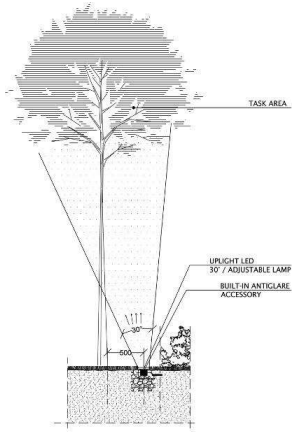
6. Install low level lighting along pathways to ensure safe navigation while minimising light spill onto adjacent areas.



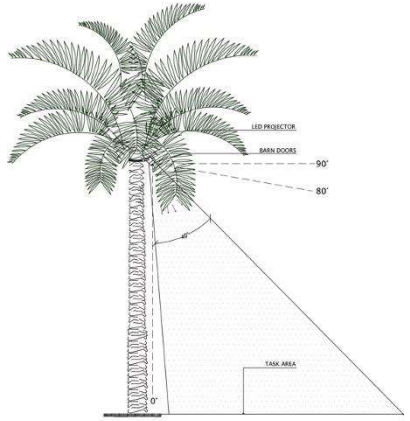
Wall washing



Wall lights



Tree uplighting



Tree branch lights

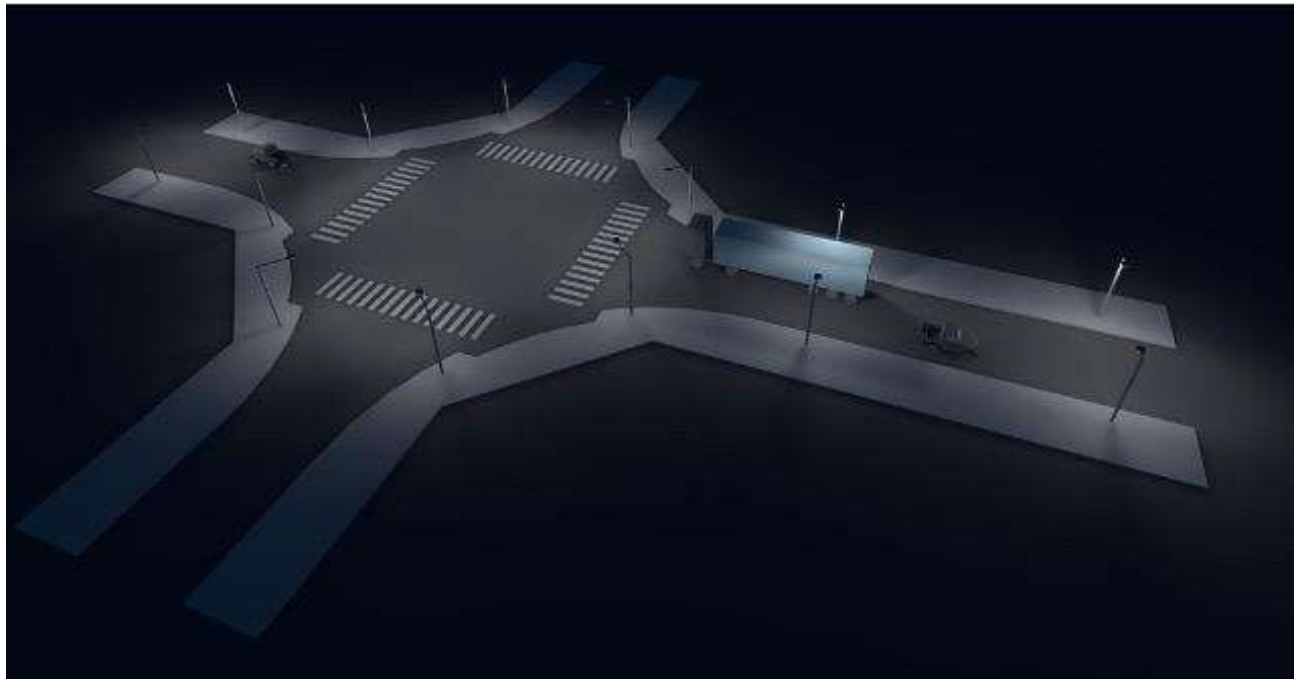
Lighting

Recommended illumination levels

1. Roadways between 0.75 and 1.00 cd/m2 or local roadways between 10 and 15lx on average - as per the roadway classification presented in the report
2. MP sidewalks between 10 and 15lx as per the classification
3. Parking slots and driveways to cover between 15 and 20lx average illumination
4. Landscape zones such as public parks: for circulation: 10lx and for seating areas between 20-50lx as per function
5. illuminated signs on facades are not recommended. If present, intensity should be reduced to 50 nits/sqm

Adhere to prescribed lighting levels specified in the masterplan standards document to ensure consistent, safe, and visually appealing illumination.

Ensure well-lit pathways, driveways, and common areas to enhance safety for residents and visitors, contributing to accident prevention and general security.



Lighting

Recommended color temperatures, CRI and efficacy

1. Recommended color temperatures

- street lighting should have a colour temperature of no greater than 3200K
- Use warm and neutral colour temperature in both residential and common functional areas. Also possible to create lighting zones within the landscape to establish different atmosphere. Warmer colour temperatures in residential and cooler temperatures in common and public areas.
- Water features depending on the design is recommended (range from 3000K to 5500K) illumination to be subtle and underwater to avoid glare.

2. Recommended color rendering index (CRI)

- For street lighting, the light source should have at least an Ra ≥ 85 which is necessary for driver navigation, pedestrian orientation and identification of persons and objects
- For public areas such as parks Ra ≥ 90 is recommended to ensure an enhanced color representation of the surrounding landscape and/or landmarks

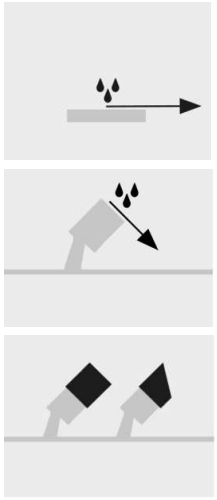
3. Recommended light source efficacy:

- For street light poles ≥ 120lm/W
- For landscape and facade lighting ≥ 70lm/W
- For underwater, facade, hardscape and landscape linear fixtures neon flex ≥ 30lm/W

Lighting

List of approved materials

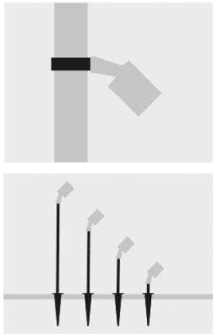
1. In case the body of the luminaire is made from aluminium extrusion or die-cast aluminium
    - low copper content (0.01%) in raw aluminium ore.
    - tri-phospoho chromatised aluminium shell which is to be treated with epoxy primers and additional protection for marine environment.
2. In case of stainless steel luminaire construction
    - the hidden body should be 304 stainless steel grade with electrostatic polishing.the exposed outer body parts should all be of marine grade stainless steel 316L
3. All luminaires should be suitable for operation in an ambient air temperature of > 50°C. manufacturer to provide a declaration of conformity and, if required, a test report to demonstrate the performance.
4. All lighting fixtures recessed in soil to be IP67 - IP68 with full dry system to prevent condensation inside the fitting
5. All electrical connections to be IP68 (gel connectors)



Flush difuser to minimise water and dust residue

Flush difuser to minimise water and dust residue

Visors avaialble to be ordered separately

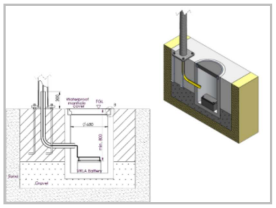


Installation with adjustable mounting strap. No holes needed

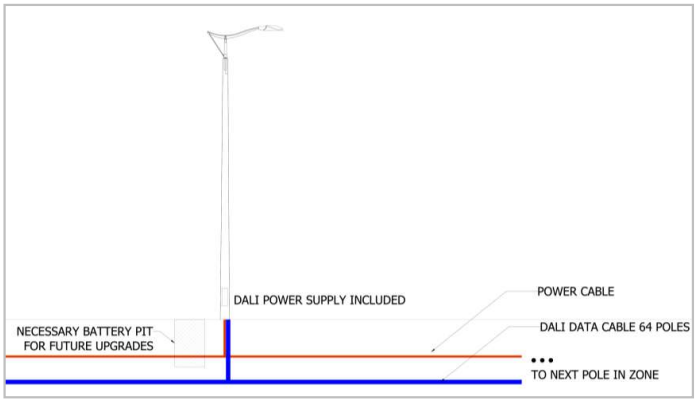
Rod with stake available in various heights

Lighting
Power and control

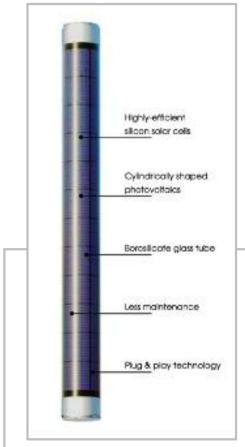
- It is encouraged to use green and environmental power solutions which guarantees cost effectiveness in the long run
- A different suggestions can be implemented to future-proof the street lighting installation in case the poles were installed without solar power at the start of the project
    - A small pit is to be dug next to each pole
    - Solar tubes are to be added onto the steel pole whenever the upgrade is decided
    - Batteries to be installed into the pit
    - A radio module is to be installed of the ready street luminaire for wireless data



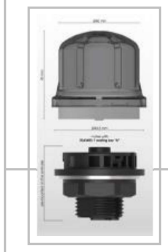
Battery pit

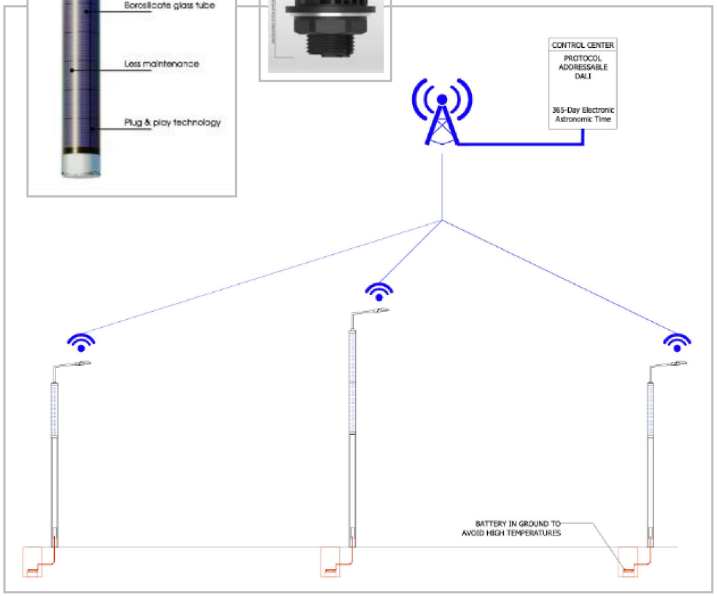


Solar tube



Radio module





Lighting

Coordination on MP and documentation

All areas whether relating to the public or private realm inside the project have to follow the aforementioned lighting guidelines.

When introducing any lighting elements at the private realm, tenants are to coordinate on design elements such as luminaire colour temperature, luminaire body material, light poles heights

Tenants are required to document any changes on lighting in private areas and submit said documents to the PM for approval before proceeding with any construction or installation

Lighting
References

1. **Street lighting guidelines**

- British Standard for road lighting BS EN13201

2. **Colour temperature (CT) and human behaviour:**

- American Medical Association (AMA)
- The Journal of the American Association of Variable Star Observers, vol. 46, no. 2, p. 193 Abstract

3. **Light pollution and dark sky**

- International Dark Sky Association (IDA)

4. **Publications from National Lighting Product Information Program (NLPIP) LRC**

5. **Illuminated signs on facades and billboards guidelines:**

- American Medical Association Council on Science and Public Health (2012)
- PMC systematic literature review Abstract.
- CEN/TR 13201-1

03.9

Security

Security
Guidelines

Introduction

The Tenants Guidelines has been prepared to inform potential tenants in KKIA-SILZ of the overall vision, of floor space and land use, Framework Plan and design intent and regulatory constraints on a particular parcel or parcels for the development.

The main purpose of the Guide is to assist potential tenants and to ensure that development proposals conform to this vision and plan. Investors are required to use the Development Design Guidelines as a foundation on which to build their facilities within the allocated plots.

It is intended for the Guide to be read in conjunction with the master plan and to be used by relevant agencies involved in the review, evaluation and approval process.

The Guide is intended to achieve the following:

- Provide the framework for generating design concept for individual sites.
- Initiate a creative response to the overall project vision.
- Provide the information that is required to encourage high standards of design.

This section of the Tenants Guidelines focusses on security, it is intended to provide the initial guidance to all tenants.

Purpose

The tenant's security guidelines is a comprehensive overview of the security program and measures. This document specifies the approach, responsibilities and resources applied to the site and managing security. It describes how tenants establish effective security controls and details the security strategy including:

- Access Control Measures pedestrian and vehicle
- Screening Procedures
- Facility information
- Emergency and Incident Response
- Security Awareness
- Security Training
- Security Risk Assessment

There will be sections on :

- Key Contacts
- Emergency Contacts
- Manned Guarding
- Reporting Procedures
- Evacuation Plans
- Fire Life Safety

These can only be completed when the site is operational.

Security
Guidelines

Scope

These tenant guidelines applies to all tenants, employees, contractors, consultants, temporary workers and other visitors.

Objectives

This outlines the security strategy for the KKIA SILZ which forms the security planning phase of the development design.

Ensuring that the KKIA SILZ is safeguarded against threats by utilizing security principles and guiding tenants and security operations to operate the site and to manage and treat potential security risks and threats and actions on.

Security

Type of Facility

The Special Integrated Logistics Zone (SILZ) is located in Riyadh within the King Khalid International Airport (KKIA) premises. It consists of approximately 1.5 million warehousing, light manufacturing and assembly facilities on an area of approximately 3 million square meters. The development is driven by the 2030 growth vision for the Kingdom and it grounds on three fundamental principles: efficiency, quality, and flexibility. The next generation logistics areas will start from the SILZ, which will strengthen the competitiveness of Riyadh within the region and the world. The aim of KKIA SILZ is to become one of the leading logistics hubs at national and regional scales.

Example of Facility Profile/Description

Tenants can use this example and complete their own

Facility Type:

Mixed-Multi Tenant

Special-Use

Construction:

Physical construction of the facility

Population:

How many employees/contractors/daily visitors? List all tenants and points of contact for each.

General functions performed at the facility:

What functions are performed?

Essential Functions:

List essential functions

Utilities:

List all utilities used at the facility (include provider's name and contact information) and details of how they enter and are distributed throughout the facility.

Identify procedures to mitigate the effects due to service interruption or contamination.

Security

Security Risk Assessment

Each plot should conduct their own security risk assessment to inform their design.

The below are the following standards and guidelines that must be followed:

GACA

- Tenants of the SILZ will be required to comply with facility security guidelines which will be aligned with TAPA, GACA and Customs regulations.
- Goods security screening and transport procedures must align with GACA, RAC and Customs regulations.
- Tenants shall have to submit their security manuals related to shipments to GACA security. Security for outbound shipments should be as follows:
- Inspection and storage in a tightly closed and well-sealed storage and then transfer to airport later.
- Divide Tenants warehouses into open and sealed zones (storage of inspected shipments and loading area after inspection with entry/exit Access Control system).
- Presence of CCTV and access control systems coordinated with the relevant authorities to follow-up on security procedures.

Tracking systems of airport bound vehicles with monitoring cameras.

Customs Requirements

Customs requires everyone that enters and exits the master plan area to be security checked. As a minimum this will consist of individuals passing through a metal detector, and bags passing through a scanner.

TAPA Requirements

TAPA Facility Security Requirements (FSR) sets out several security requirements which need to be addressed by the tenant to receive TAPA certification. Requirements are set out in the TAPA FSR 2020.

The TAPA-A Certificate will only apply to the masterplan, the tenants can target any TAPA level certification, as long as they adhere to the TAPA-A masterplan level.

Ministry of Interior

CCTV systems will meet MOI requirements as a minimum, storage will be for 90 days as per GACA requirements.

Security

Key KKIA – SILZ Contacts

Role	Responsibilities	Details

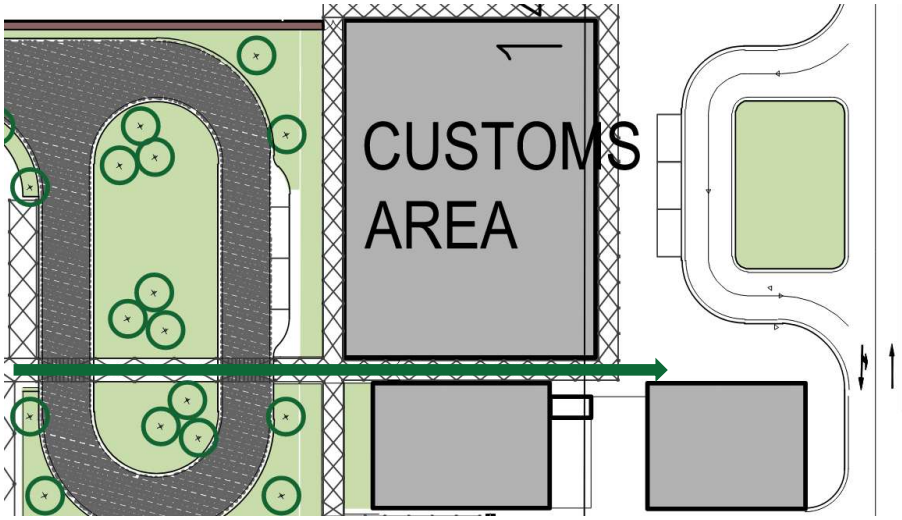
Security

Pedestrian Access Control

Tenant Plots – Secure Zone

TAPA Requirements

- Tenant visitors must pass a manned position (reception/ guards/ employees) upon entry of the tenant space in compliance with TAPA regulations.
- All visitors to the office area identified using government issued photo-id.
- All visitors to the office area registered and log maintained for minimum 30 days.
- All visitor badges must be reconciled as the visitor leaves the premises and the full log checked daily.
- All visitors visibly display badges or passes and are escorted by company personnel.
- Work force movements must be controlled and logged through an electronic access control device 24/7.
- Pedestrian movement within the tenant space should be monitored by 24/7 video surveillance, with greater focus on the plots entry and exit points.
- Separate entrances for offices and warehouse/storage is required.



Pedestrian Flow Public Zone to Secure Zone

Security
Pedestrian Access Control

Tenant Plots – Access Cards

- All staff will be assigned RFID access cards once registered to the SILZ by the tenants.
- Pedestrian access control management will be implemented with turnstiles to control the movement of pedestrians in and out of SILZ while also managing access control rights.

Security
Key Management

Introduction

Key control and management are an orderly and secure solution for addressing controlled usage and safeguarding of mechanical keys and access cards.

Key management improves security by ensuring that facility keys are properly managed regarding access, storage and tracking.

Key management systems can reinforce access control policies already in place and help reduce the costs associated with lost keys or unmanaged access.

Keys should be audited as their control is an important factor in retaining an installations security and also the integrity of the key and lock. It is important to control the provenance of locks and keys as they are the most vulnerable at the point of supply, transit or when being stored.

Key Management Systems

Key Management Systems have become effective at addressing the security of building assets. They can be integrated with other security systems to deny access or egress from the facility and management can be alerted if a key has not been returned or has been used to try to access an area without the appropriate credentials.

When utilising a mechanical key system there shall be secure key cabinets and a key management authority.

With RFID access card keys and fobs the key management authority shall program the authorized user's credentials via associated access control and management system (ACAMS). These credentials can be easily de-registered from the system when an individual has left or has had their privileges revoked.

Mechanical Secure Key Cabinet

Security
Key Management

Condensed Model Key Control Policy

The following is to be used as a guide for developing a key control policy, and to assist in the understanding of a formalised key control policy. This can be tailored to meet SILZ objectives.

Purpose

The purpose of this key control policy is to help protect the life, property, and security of this facility and all its occupants.

Specification

This facility shall use a key control system and administrative policies that facilitate the adoption and enforcement of this key control policy.

General

The introduction of a key control policy is essential for the security of this facility and the protection of personnel, property, and equipment.

The facility shall appoint a key control authority with power and authority to: develop all policies and procedures related to the key management system; and, appoint or become the key control manager to execute and enforce key control policies and procedures.

No person shall knowingly alter, duplicate, or make a copy of any key to a lock of a building or property without receiving permission from a person duly authorised.

Key Control

The key control authority will determine appropriate policy and method for the issuing and collecting of keys.

All keys shall be stored in secure locked key cabinets.

The key control authority shall utilise an effective key control management program and assign the appropriate individual(s) to maintain its use.

Issuing of Keys

All keys remain the property of SILZ.

The process for which keys shall be issues will be based on defined policies and procedures set forth by the key control authority.

Keys should be issued only to authorised users either via the integrated system or via signature.

Returning Keys

All keys shall be returned to key control authority. All lost keys shall be reported to the key control authority.

All found keys shall be returned to the key control authority.

Security
Key Management

Depending on the level of lost key, it shall be the SILZ policy that when they are lost or stolen, to replace all cylinders accessed by lost keys.

Tenant Responsibilities

Shall only use keys to access their authorised areas and must ensure that keys are safeguarded and properly used.

The unauthorized possession, use or reproduction of a key may constitute theft. Any tenant who violates this policy may be subject to disciplinary action.

Additional Elements to consider

Each tenant may have its own key control authority or should use one provided by SILZ.

Vacant or unoccupied space.

High rate of change and potential redesign of the key system with tenant turnover.

Provide a trained Key Control Authority team of 3-6 Covering 3 shifts of 8 hours a day with a redundancy.

The new Key Management System shall be a software-driven solution and is equipped with software add ons. This provides a strong evidence trail and keeps the Key Control Authority (KCA) informed and up to date of the whereabouts of all keys.

With manual key management systems, a key sign in/out register shall be in place. This requires auditing daily to ensure unreturned keys are identified.

As a result of the software-driven Key Management System and configuration, the key control authority requires training on the system before any locks are changed, or keys are handed over.

It is very important that the key Control authority understand the importance of the new Key Management System and are correctly trained in at least the following:

- Key Labelling/Tags
- The key allocation strategy
- Key Suiting
- Issuing policy
- Lost keys
- Recovery of transmitted lost keys
- Key authorisation
- Key Management software

Security

Removal of Equipment and Property

Before property can be moved off site, the Tenants of the SILZ will be required to comply with facility security guidelines which will be aligned with TAPA, GACA and Customs regulations.

This shall include informing them in writing prior to its removal.

Security

Access Control System and Alarm Monitoring System (ACAMS)

All Buildings within Tenant Plots should have access control measures implemented on all access points.

It shall be capable of integration with physical barriers such as doors, etc. and remotely operated from a central control station or via the use of local smart card readers deployed at these locations.

ACAMS shall provide a credential to authorised individuals accessing restricted areas of the project.

All authorised users within the project will be provided with security ID/permits which will grant access into predefined secured areas. All critical areas and rooms will be protected by electronic locking mechanism, and only personnel with right privileges on their cards will access these secured areas.

The system shall be interfaced with other sub-security systems such as IP video surveillance to call-up related cameras placed at the alarmed zones, and provide video images of the area and define the type of alarm as opposed sending security patrol to the alarmed area

All staff will be provided with security pass/ card which will grant access into predefined secured areas.

All critical areas and rooms will be protected by electronic locking mechanism, and only personnel with right privileges on their cards will access these secured areas.

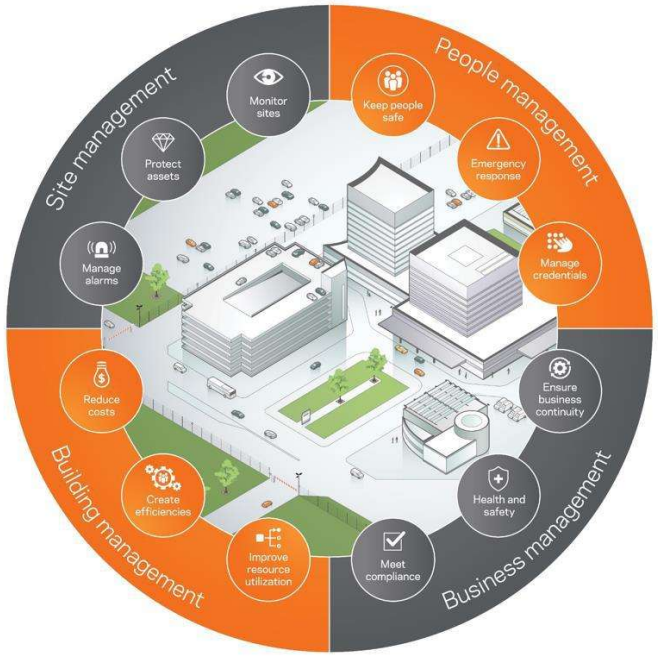
A combination of different intrusion detection (IDS) devices can be implemented throughout the Building.

It is intended to implement the IDS within all critical areas that are not occupied on a 24-hour basis, including:

— Back of House Offices

— Seizure Warehouse

— Customs Buildings



Security

Access Control System and Alarm Monitoring System (ACAMS)

The ACAMS will have several functional components to include:

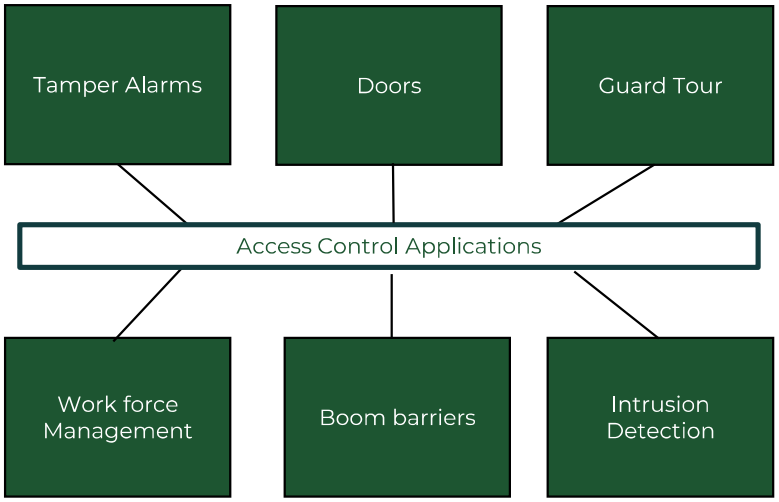
- Access Control
- Intrusion Detection and Alarm
- Guard Tour (optional)
- Access and Alarm tracking and report generation

Door position contacts shall be connected through the ACAMS to provide indication of the door's status. Door contacts are installed in the following locations as a minimum:

- All doors fitted with electronic access control
- All stair doors
- All perimeter doors.
- All utility doors
- All operable windows under 5m from finished floor level
- All access hatches and louvers under 5m finished floor level

All devices attached to the Access Control Panels (ACPs) shall be monitored with end of line resistors (EOLR) to provide supervision of wiring and device integrity. ACPs shall also be equipped with tamper switches.

Access control panels and card readers



Security
Video Surveillance System

Active VSS must utilise a manned surveillance monitoring point.

The manned surveillance monitoring point will be responsible for monitoring and recording activity and suspicious activities.

The manned surveillance monitoring point will be responsible of incident response and immediate actions following threats.

The VSS system should be designed with redundancy architecture.

CCTV will comply with Ministry of Interior requirements as a minimum, storage requirements to be increased to 90 days.

Network video recording solutions and storage systems should be scalable.

The video recording solution shall be flexible to allow for Operator adjustment to recording quality.

VSS shall be capable of detecting, viewing, and recording events with very clear, sharp, and high-resolution images during day and night.

All cameras shall provide colour video transmission, while exterior cameras or cameras installed within low light areas, shall be capable of black and white (B/W).

Cameras in total darkness areas shall be equipped with Infra-Red illuminators or similar features using digital processing techniques.

Cameras shall be synchronized to GPS time or master time clock.

Presence of CCTV and access control systems coordinated with the relevant authorities to follow-up on security procedures.

The following recording standards should be reviewed and applied as suitable:

- Normal/Low Risk Areas – 15 frames per second
- Higher Risk Areas – 15 frames per second
- High Risk Areas – 15 frames per second

Where available, 30 frames per second or higher should be reviewed for exceptional areas where high-movement and activity may require enhanced capabilities.

Security
Video Surveillance System

	Target Height	Pixel Per Metre	Operational Requirement	Example
Monitor & Control	5%	12.5	Operator should be able to monitor the number, direction and speed of movement of people across a wide area, providing their presence is known to them; i.e. they do not have to be searched for.	General observation of circulation routes.
Detect	10%	25	After an alert the operator would be able to search the display screens and ascertain with a high degree of certainty whether or not a person is present.	Plot and Building perimeters.
Observe	25%	62	At this scale, some characteristic details of the individual, such as distinctive clothing, can be seen whilst the view remains sufficiently wide to tallow some activity surrounding an incident to be monitored.	Parking areas, Loading bays
Recognise	50%	125	Operators can say with a high degree of certainty whether or not an individual shown is the same as someone they have seen before.	Car park entry points, vehicle access points, corridors, reception points, lobby area, Offices, etc.
Identity	120%	250	Picture quality and detail should be sufficient to enable the identity of an individual to be established beyond reasonable doubt.	All building entries, access into restricted areas.

Security
Emergency Planning

All tenant plots shall have an emergency management plan in place to help contain and mitigate the consequences of actual or impending occurrence of incidents.

All personnel shall be familiar and trained in their responsibilities under the emergency management plan and procedures.

Incidents at the facility shall be investigated and corrective actions shall be taken to prevent recurrence.

All incidents shall be documented and retained.

Security
Emergency Contacts

Role	Details
Police	999
Civil Defense	998
Ambulance	997
Unified Emergency Number	911
Narcotics Control	995
Terrorism Incidents	990
GACA	1929
ZATCA	1910 or 19993
Riyadh Airports Company	920020090
Chief Fire Warden	
HSE Officer	
Security Manager	

Security

Emergency Control Organisation

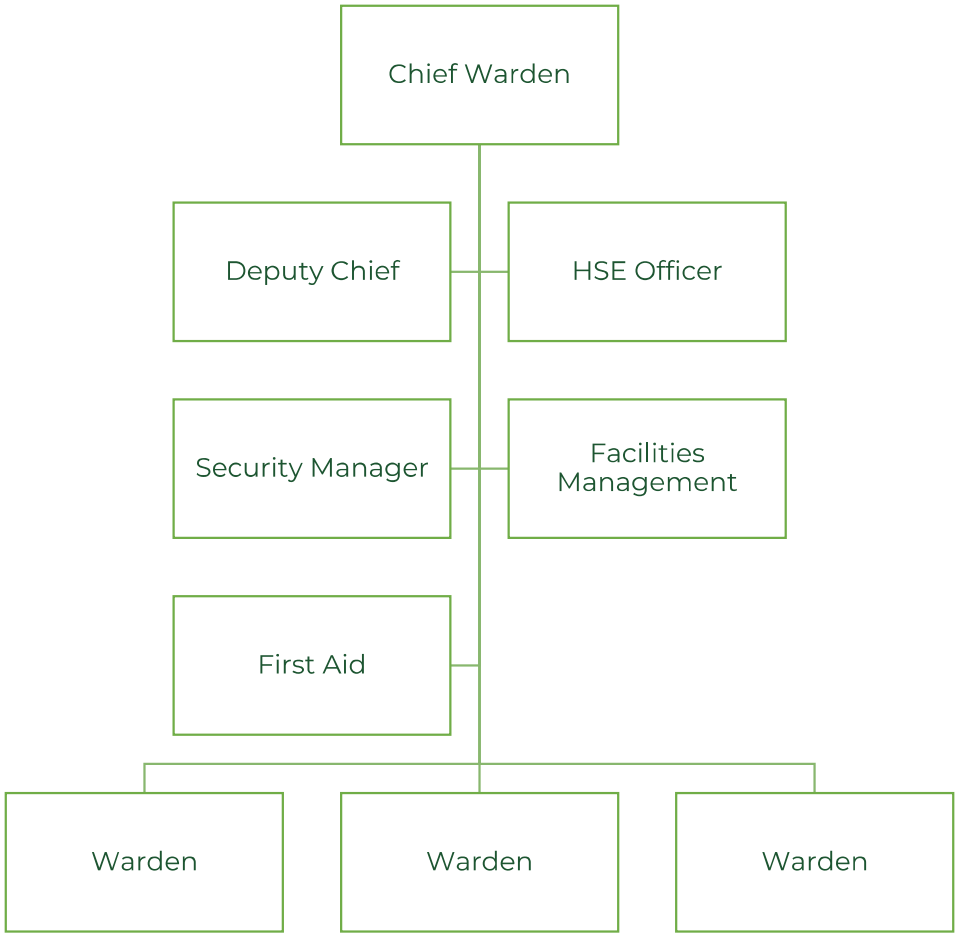
An Emergency Control Organisation (ECO), consisting of a Chief and Deputy Warden, HSE Officer, Area Wardens, First Aid Officer and Facilities Management should be established.

In the event of an emergency the ECO is responsible for first response, this may include the evacuation of the building, and alerting emergency service.

Wardens should be aware that their primary duty is to ensure, as far as practicable, the safety of occupants and their orderly evacuation from a hazardous area.

A determined effort (duty of care) is required by all occupants of the building, particularly managers and supervisors, to ensure the following is maintained:

- Suitable persons are nominated to carry out the duties of Wardens in the building.
- All areas of the building should be represented by trained Wardens.
- A list of Wardens containing the name, telephone number and location of all Wardens in the building.
- Copies of the list of Wardens should be maintained by the Chief Warden and Deputy Chief Warden(s).
- The Emergency Control Organisation should meet every six months.
- At least one full scale evacuation exercise is conducted annually.



Security
Fire Safety

Fire Wardens and Occupants

- Wardens are to ensure they are familiar with emergency response procedures.
- Occupants must be aware of alarm tones, wardens in their areas, location of fire appliances, method of notification of an emergency, and exits within or near their area. They must also familiarise themselves with the route to and location of the Assembly Area.
- The effectiveness of these procedures depends on the willingness of occupants at all levels to make themselves aware of the immediate actions they must take in an emergency so that they can act promptly, calmly and efficiently.

ACTIONS OF AN OCCUPANT UPON DISCOVERING FIRE OR SMOKE

Upon discovering fire/smoke act as follows:

- Rescue or remove any persons from immediate danger to safety (if safe to do so).
- Alert others, notify Deputy Chief Warden.
- If competent in use of fire extinguishers or hose reels attack and attempt to extinguish small fire (if safe to do so).
- Close doors (if safe to do so). This restricts the spread of fire and smoke.
- When directed by Wardens, evacuate to assembly area.
- Remain in designated assembly area until the emergency is over.
- Carry out instructions of the Emergency Control Organisation and the Emergency Services.

Security
Fire Safety

Fire Prevention Is The Responsibility Of All Occupants

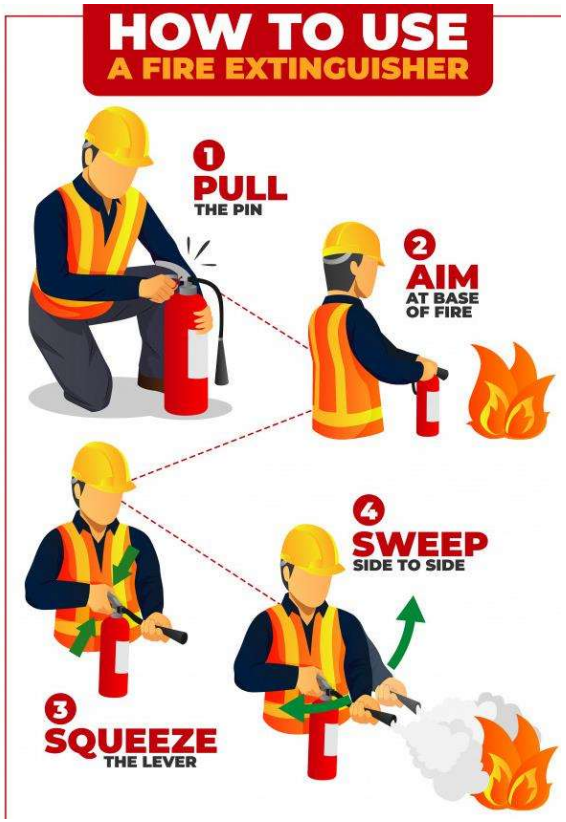
Occupants should report any matter which they consider a potential hazard to their supervisor or Area Warden.

Fire Fighting Equipment

Different fire extinguishers are available for various types of fires. Occupants of the building should be familiar with the types of fire extinguishers available and their limitations.

Select the correct type of extinguisher and follow these important instructions:

- Prior to fighting the fire, you should give the extinguisher a short test to check the discharge distance and to ensure that it operates correctly.
- Ensure that you have a safe exit should the fire become uncontrollable. You must not allow the fire to block off your escape route.
- Start fighting the fire from a distance, moving in closer as the fire dies down. A crouching attitude should be adopted to protect yourself against smoke and heat.
- When in the open, fight the fire from the windward side. This allows the wind to blow the extinguishment onto the fire.
- Always try to have another person with an extinguisher backing you up as a safety precaution.
- Keep low to avoid smoke.
- Do not turn your back on the fire.
- Make sure that the fire has been completely extinguished.



Security
Fire Safety

Fire Fighting Equipment

Hose Reels

- Determine if water is a suitable extinguishing agent for the class of fire involved
- Turn water on at the reel before unrolling the hose
- Unroll the hose – always walk as running may cause problems at the reel
- A second person can ensure the hose runs freely around corners
- Turn water on at nozzle
- See the guidelines for attacking a fire with an extinguisher above.

Fire Blankets

- Fire blankets should be located adjacent to the applicable risk.
- Take the blanket out of package.
- Cover the object with the blanket.
- Turn off the source of heat.
- Do not lift to check if the fire is out – leave until cool the blanket is cool to touch.
- Call the Civil Defense.

Security
Power Failure

In the event of a power failure in the building the Chief Warden will:

- Inform ECO of the loss of power and cause, if known.
- Direct ECO to inform staff of the failure of power.
- Direct staff to switch off all equipment and await orders.
- If the power failure is prolonged it may be necessary to evacuate the occupants. The Chief Warden will give instructions to the ECO who will evacuate the occupants as for a fire situation to the assembly area if safe to do so.

Security
Medical Emergency

It is possible that a medical emergency may occur at any time, and it may involve one person, or it may involve many people suffering smoke inhalation etc.

If someone becomes ill or is injured and requires immediate assistance, then inform the ECO Chief Warden.

The Chief Warden will:

- Ensure the Ambulance has been contacted and they are aware of the medical problem involved.
- Ensure that no one in the area is in danger.
- Arrange for first-aid to be administered by a qualified first-aid person.
- If no first-aid assistance is available, ensure the patient is made as comfortable as possible.
- If evacuation of the building is necessary, evacuate walking patients to the assembly area.
- Move non-walking patients to a safe area in the building. (If the patient has fallen do not move unless in immediate danger).
- Arrange for a person to meet the Ambulance and escort them to the location of the injured/sick patient.
- Request a qualified first aid person to remain with patient/s until not required by medical/paramedical officers.

The SILZ and Tenant areas shall have the following equipment:

- Automated External Defibrillators (AED)
- First Aid Kits
- Bleed Control Kits

Security
Natural Disasters

Earthquake and Tremors

Tremors varying in intensity have been felt in many areas of the Middle East. Opinion among earthquake experts in KSA is that if earth tremors hit:

If you are inside a building:

- Take cover, move away from windows.
- Do not evacuate while building is shaking

If you are outside a building

- Stay in an open area away from trees, buildings, structures, and power lines. Do not enter a building.
- Drop to your knees and get into foetal position, close eyes, and cross arms over the back of your neck.
- If in a moving vehicle, stop and stay in vehicle.

After:

- Establish communications with ECO members.
- Ensure that electricity and water shutdown where necessary.
- Arrange first-aid treatment where necessary.
- Request reports of any structural damage, fires, leaks, or other hazards.
- If necessary, evacuate personnel from dangerous areas.
- Not to leave building before permission is given.
- Stay in their area if it is safe. Wandering through the building could hamper rescue operations and may be dangerous.
- Liaise with the Saudi Local Authorities as required.

Security
Natural Disasters

Flood

The flooding of a building can affect the safety of the occupants in addition to the loss of valuable equipment and damage to property.

<u>If warning is received:</u>

- Evaluate the need to evacuate occupants and decide on a possible assembly area.
- Switch off electrical appliances in areas likely to be flooded.
- Shutdown electricity and water.
- Move valuable equipment to above anticipated flood level.
- Arrange for First-aid Officers to stand-by.
- Liaise with the Saudi Local Authorities as required.

Sandstorms

- Dust/sandstorms can be particularly dangerous to those with impaired respiratory function or weakened immune systems. Inhalation of even small amounts of dust can cause complications for people who already have difficulty breathing (asthma).
- Personnel inside, stay inside
- Personnel in vehicle, turn off air vents and make sure windows are fully up.
- If personnel are outside, seek cover. If you have a mask, put it on. If no mask wrap a piece of cloth (moistened) around the nose and mouth.

Security

Flammable Liquid or Toxic Substance Spills

In the event of a flammable liquid spill or the spill or accidental release of a toxic substance within the building, the Chief Warden will:

- Evacuate people in the immediate area.
- Shut down the air conditioning.
- If necessary, evacuate persons in danger to a position well upwind of the building.
- Request Wardens to keep unauthorised persons away.
- Liaise with the Saudi Local Authorities as required.

If the spill or accident is outside or adjacent to the building, the Chief Warden will:

- Direct Wardens to request tenants to remain in the building.
- Close all windows and doors.
- Shut down the air conditioning.
- Direct Wardens to remain at entry doors and exits.
- Prevent people leaving the building until the all-clear is given by the Emergency Services.
- Liaise with the Saudi Local Authorities as required.

Security

Actions on – Indirect Fire Attack

Actions to Take

- If you hear a loud explosion, feel bombardment of any kind or sirens are activated, immediately seek cover.
- If inside, go to the lowest level of the structure with the fewest exterior walls, windows, and openings; close any doors and sit near an interior wall, away from any windows or openings.
- Avoid windows and glass – do not look out, sit near an interior wall.
- Be aware that even if the incoming missile or drone is intercepted, falling debris represents a significant risk.
- After the attack, stay away from any debris, and monitor major news outlets for official guidance.

If outside

- Immediately seek cover within a hardened structure; if that is not possible, lie down and cover your head with your hands.

Security

Actions on – Marauding Terror Attack

Chief Warden

- The Chief Warden will be appointed to direct preparations with accountability of your organisation.
- Develop response plans that define roles and responsibilities.
- Plan across business and ideally with Saudi Authorities.
- Train staff and personnel to perform key tasks under pressure.
- Work with other tenants and SILZ to coordinate response and share information.
- Understand RUN, HIDE, TELL procedure.
- Provide signage, optimise technical capabilities, CCTV, Public Address System, Access Control.
- Using announcements makes a difference. Decide how to use them in an incident.
- Test, refine and rehearse response.

Security

Actions on – Chemical, Biological or Radiological

Signs of a potential CBR hazard may be:

Individuals showing unexplained signs of skin, eye or airway irritation, nausea, vomiting, twitching, sweating, disorientation, breathing difficulties

- The presence of hazardous or unusual materials or equipment
- Unexplained vapour, mist clouds, powder, liquids or oily drops
- Withered plant life or vegetation
- Distressed birds or other animals
- Odd smells or tastes

The actions that are taken by building managers, security staff and ECO can, in the immediate moments following a CBR attack, have a very significant impact on limiting the effects of a CBR incident.

Chemical

Poisoning or injury caused by chemical substances, including traditional military chemical warfare agents, harmful industrial or household chemicals

Biological

Illnesses caused by the deliberate release of dangerous bacteria or viruses or by biological toxins, such as ricin, found in castor oil beans

Radiological

Illness caused by exposure to harmful radioactive materials

Security

Actions on – Chemical, Biological or Radiological

To ensure that control rooms, other staff and emergency services are given the correct information relating to a CBR attack, the following ETHANE format can be used:

E – Exact location of the incident

T – Type of incident – C or B or R

H – Hazards present or suspected

A – Access. Safest route to use

N – Number, type and severity of any casualties

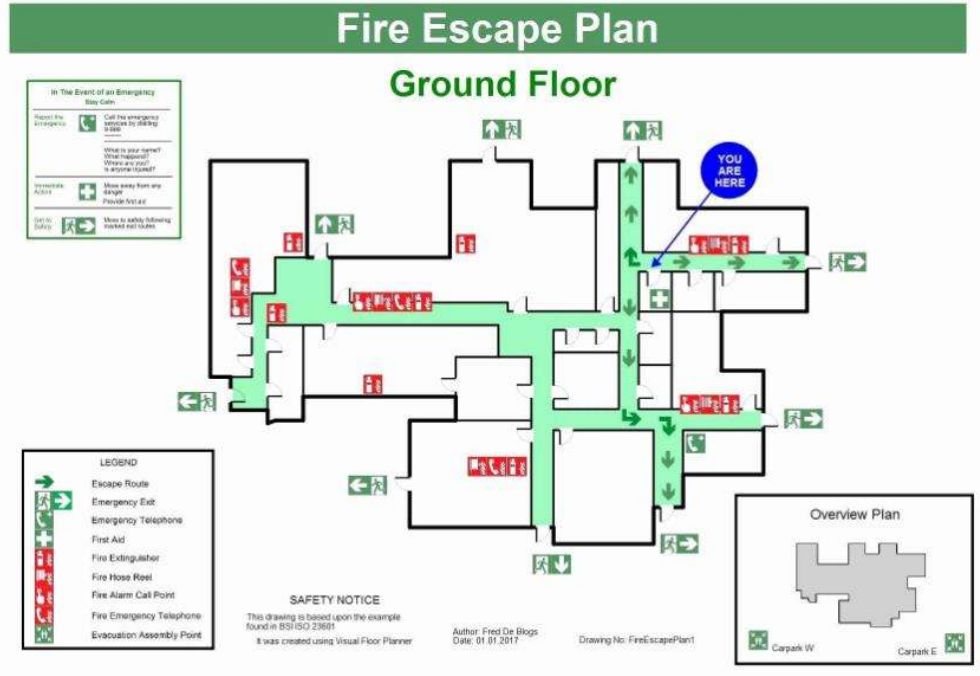
E – Emergency services – present and those required

Security
Evacuation Plans

The purpose of an emergency evacuation plan is to ensure the safety of employees and visitors during an emergency.

These should be developed by the tenants. Things to consider:

- Evaluate the emergency
- Determine exit routes
- Identify Safe Areas
- Develop evacuation procedures
- Discuss with staff
- Assign responsibilities
- Conduct training exercises
- Review



Security
Manned Guarding services

Each tenant need an approved security provider or trained security staff to undertake security tasks within the plot.

Security staff should be uniformed and easily identifiable.

The basic objectives of manned-guarding are, but not limited to, the following:

- Protection of Life
- Protection of Premises and Property
- Prevention of Crime
- Prevention of Loss and Waste

Typical responsibilities include:

- Control of entrance and movement of pedestrian and vehicle traffic;
- Patrol of buildings and perimeters
- Escort of security and personnel;
- Monitoring of assets from a security control room/ desk
- Emergency response

Security

Security Command and Control

Tenant spaces should have a local security monitoring room or desk.

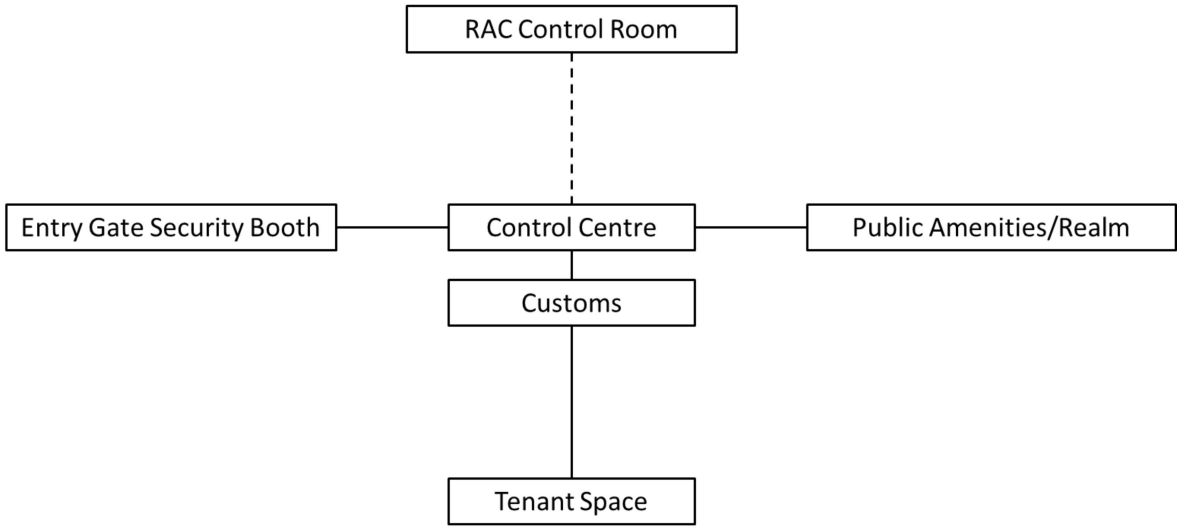
The tenant's local security monitoring room/ desk should be the focal point of security response coordination.

Access to the security monitoring room/ desk is highly restricted to plot security personnel only.

Security monitoring point will be responsible for monitoring and recording activity and suspicious activities.

Saudi Customs require access to the SILZ and tenants VSS feed and they will have their own control room in their building.

Tenants VSS will be monitored and recorded at the tenants own local security room.



Security

Security Culture

Security is everyone's responsibility.

To supplement the physical security measures that are in place, the level of security awareness amongst employees and their vigilance, including routines are a critical layer of the site's security culture.

A security culture is about encouraging employees to recognize shared values and methodologies towards security.

The benefits of an effective security culture include.

- A workforce that are more likely to be engaged with, and take responsibility for, security issues
- Increased compliance with protective security measures
- Reduced risk of insider incidents
- Awareness of the most relevant security threats
- Employees are more likely to think and act in a security conscious manner

Visitors to tenant plots will be collected from the entry gate by a responsible tenant staff member and shall be escorted to the intended workspace.

Tenants notify security in advance of planned visitors by submitting a visitor notification form (including ID and photographic identification).

Employee Passes –The wearing of security passes by all staff, however senior, makes it immediately clear who should be in the building and who should not. It also helps to create an effective security culture. Ideally, passes should include the holder's full-face photograph and name. Anyone not displaying a security pass is challenged or reported to the security immediately.

Informing the security staff

All staff are strongly encouraged to report any security concerns or see anyone acting suspiciously to security.

Security

Security Culture

DO

- Look alert and be vigilant when entering or leaving a site – your behaviour can deter someone with hostile intent from planning an attack.
- Report anything unusual or suspicious immediately to security, following the correct process (e.g. make sure you have the phone number for security to hand).
- Avoid having the same routines every day for when you enter or leave a site.
- Follow the correct entry and exit procedures for passing through gates, vehicle barriers, doors and so forth (e.g. swiping your pass or signing in and out).
- Wear your ID in the workplace, ensuring it is clearly visible.
- Discuss sensitive subjects or projects in an appropriate location, like a meeting room, with only those who need to be present.
- Dispose of sensitive information appropriately, for example by using a shredder for paper documents.
- Ensure your desk is clear of any sensitive information at the end of the day – where necessary, lock it away.
- Allow yourself time to adhere to security policy when transferring sensitive information, whether that's sending emails or transferring printed documents securely.

DON'T

- Appear distracted or unaware of your surroundings at the entry or exit points (e.g. by being on your mobile phone or wearing headphones); this can give the impression that you, or the organisation, might be an easy target for an attack.
- Ignore suspicious activity because you feel it's not your responsibility or you don't know the reporting process.
- Draw attention to where you work by smoking or loitering near the entrances or exits of your site or having your pass on display in a public place.
- Feel awkward when asking other staff members to follow the correct entry and exit procedures, for instance asking them to swipe in rather than holding a door open for them.
- Obscure your ID under a jacket or in a pocket while onsite.
- Feel embarrassed to approach anyone who isn't clearly displaying a security pass onsite.
- Take offence if a colleague is kind enough to remind you to display your pass or adhere to a particular security procedure – they are just trying to be helpful.
- Discuss sensitive subjects or display sensitive information in areas where visitors are likely to be, such as the lift.

Security

Security Culture

DO

- Lock your device or computer terminal when leaving it unattended.
- Wait until instructed by IT to upgrade your device or install new software.
- Connect only sanctioned devices and media to the organisation's network, such as authorised USB sticks or mobile phones.
- Store only the essential information you need on portable devices or mobile phones, especially when going overseas, in case they are lost or stolen.
- Avoid using work devices and work email for personal use – you could be putting yourself, and those you contact, at risk.
- Adhere to good practice and policy for information management by ensuring all your work is stored on your organisation's IT systems.
- Use your IT devices appropriately and in line with policy, for example only visiting the social media sites you are allowed to.

DON'T

- Store passwords with the associated device – if you lose the device then anyone can gain access to it.
- Download apps onto work devices unless they have been authorised by IT – you could be putting the organisation at risk.
- Install new software or carry out software upgrades unless instructed to by IT.
- Connect unauthorised IT devices or media (e.g. USB sticks or CDs) to the IT network without going through the proper channels.
- Connect personal mobile devices to corporate devices (e.g. charging personal mobiles on work laptops) unless authorised to do so; you may inadvertently pass on malware.
- Use public Wi-Fi on IT devices you have received from the organisation.
- Lose track of what corporate IT devices are in your possession and where they are.

Security

Security Training

Each tenant is to provide its staff with appropriate information and the threats and risks to its people, information and assets.

Security information provided is to highlight the security priorities of the tenant and security responsibilities to support a strong security culture across the entity and SILZ.

All staff, workers, including contractors are required to engage with the tenant's security awareness.

All tenants are required to carry out security training. Local authorities and manned guarding should be involved.

03.10

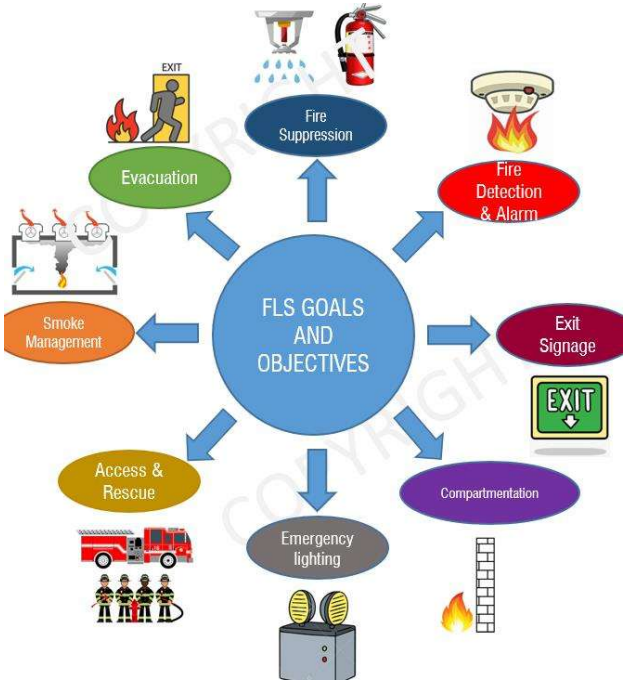
FLS

FLS
General compliance

Each plot design shall comply with applicable codes and standards followed in KSA including SBC 201, 401, 501 and 801 in addition to references NFPA standards.

Ensure building shall comply with SBC 201 and 801 with references to NFPA standards for the following:

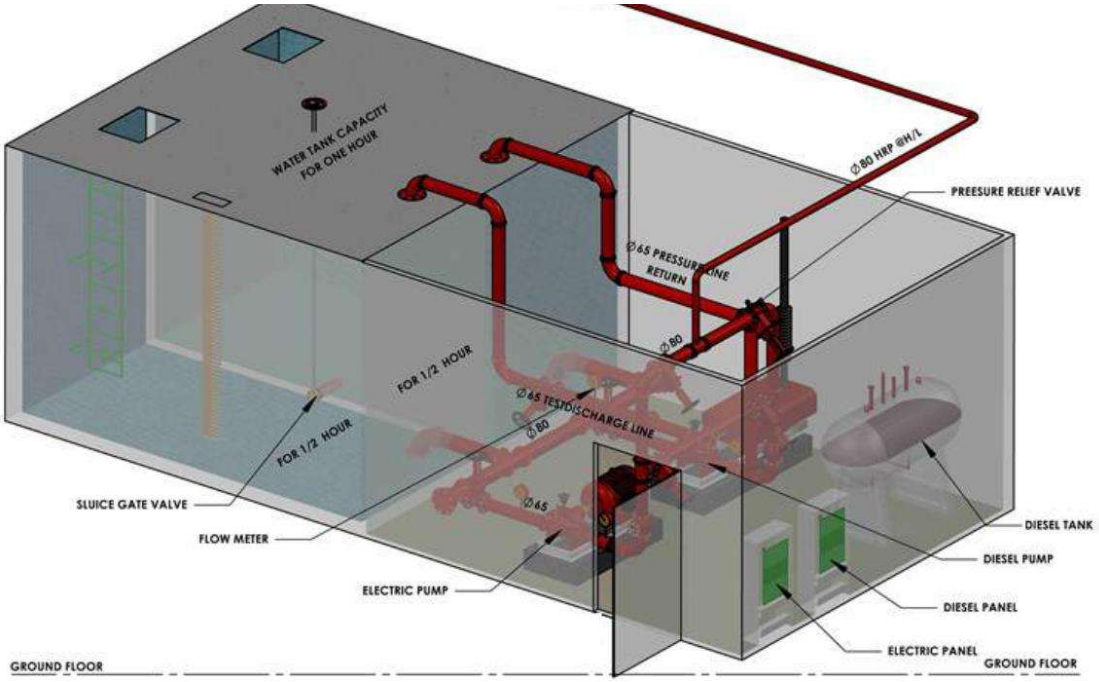
- Means of egress
- Exterior wall separation
- Compartmentation
- Hazardous material protection
- Interior finishes
- Façade and Building Construction
- Smoke management
- Fire protection systems
- Fire truck access, etc



FLS
Fire Water and Fire Pumps

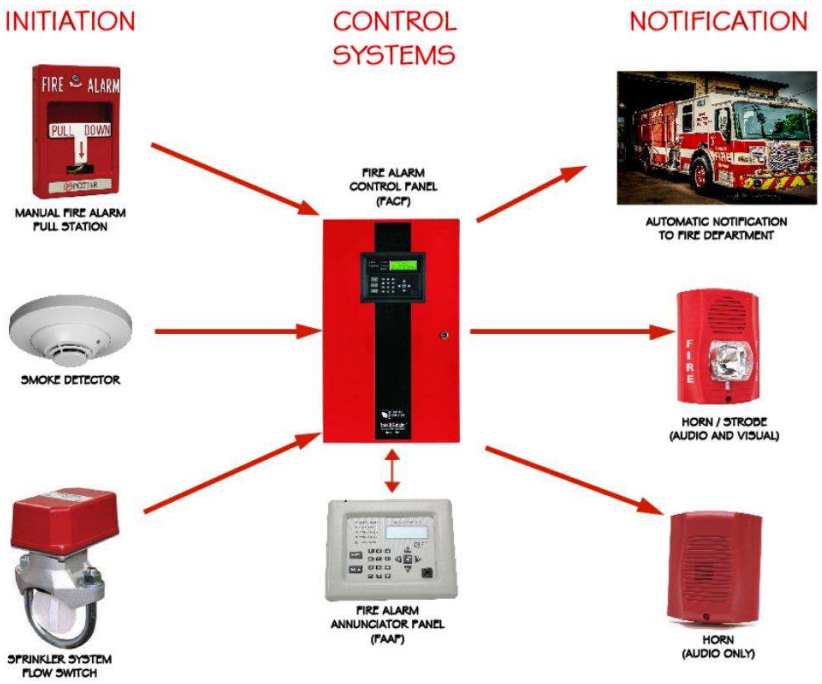
All plots shall be sprinkler protected based on the requirements set in SBC 201 and 801.

Each tenant shall assess fire water requirements per SBC 201/801 including pressure and flow and provide dedicated fire tank and fire pumps on their plot to ensure their building/structure is protected.



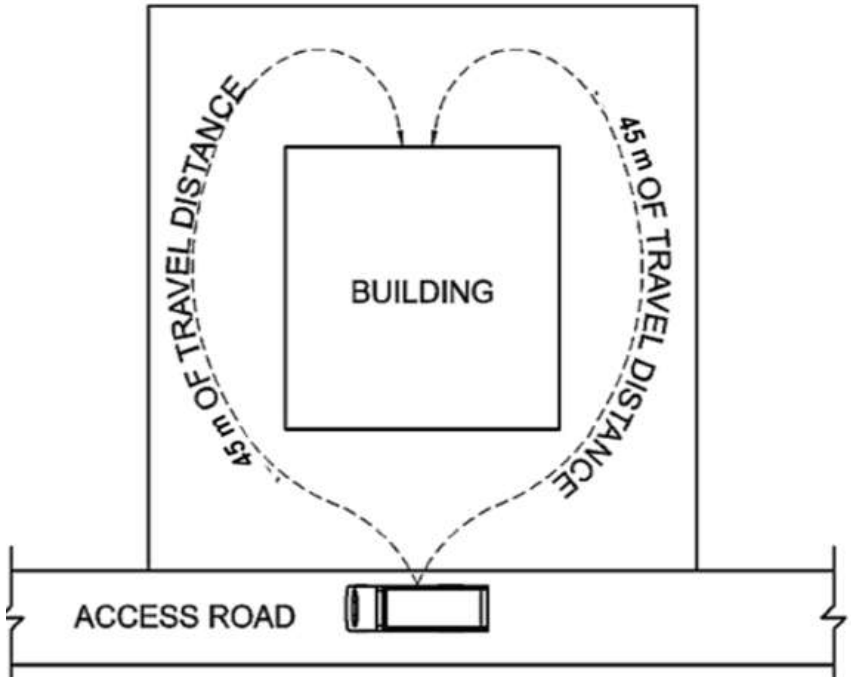
FLS
Building Interface with Fire Station

Ensure connectivity between each FACP of the building and the Fire Station and Control Center in order to initiate fire alarm signal upon confirmation of fire in accordance with SBC 201, Section 1009.8.1, 907.6.6.1 and NFPA 72 Sections 21.1 and 21.2. The auto dialer connection from the tenant warehouses to the fire brigade is required to transmit alarm and supervisory signals according to NFPA 72. 26.5.3.



FLS
Fire Truck Access

Fire Truck Access to the internal plot, if required, shall meet SBC 801 based on the building configuration shall be of 6m wide accessway (if building less than 9m) and 7.9m (if building > 9m) to meet distances from the main road of the masterplan to all projected areas on the plot within 137m per NFPA 5000 if building is sprinklered and 45m if non-sprinklered. Minimum carrying weight is 34 tons with headroom or 4m (recommended 4.5m). Dead-end fire truck roads/paths shall not exceed 45m as per SBC 801.



Building Address Signage

Ensure Building Address Signage is followed as per SBC 801 Section 505.1. Such Signage shall have Arabic+English designation not less than 100mm characters height and 13mm width to enable fire fighters to identify the buildings.

03.11

Domestic Water

Domestic Water and Firefighting
References

The design of the water supply and firefighting network extension within Plots shall be carried out in line with the guidelines and codes of practice developed by International associations and adopted in the Kingdom of Saudi Arabia:

- NWC: Potable Water Design Guidelines
- AWWA: American Water Works Association
- ANSI: American National Standard Institute
- ASTM: American Society for Testing and Materials
- SASO: Saudi Arabian Standards of Organization
- Saudi Civil Defense Standard for Firefighting
- NFPA: National Fire Protection Association
- SBC: Saudi Building Code
- "Standard Technical Specifications for Water Networks" issued by the Ministry of Water and Electricity

Domestic Water and Firefighting
General Design Guidelines

a. Each plot will be supplied with a single connection that will be common for Domestic Water and Fire Fighting internal usage.

b. Domestic Water and Fire Fighting Network will be extended to each plot. Branch connection will be HDPE PN16, SDR 11, and it will be terminated few meters inside of each plot. Each branch will be ended with an isolation valve within valve chamber and will be capped to allow easy extension within the plot. Refer to plan drawings for the location of house connections and the details of valves.

c. The plot connection pipe diameter is provided on the layout plans and is sized based on the peak hourly flow of each plot.

d. Each plot will have to be equipped with a 5-day storage tank. 5 days storage capacity will ensure water supply even during water shortages in Mains Network.

e. Each tenant will have to calculate the volume of the 5-day domestic water tank based on the following criteria: Average water demand for each plot x Daily Peak factor (1.6) x 5.

f. 5 day domestic water storage tanks shall be equipped with chlorine dosing and measuring system to prevent legionella growth.

g. All Materials have to comply with SBC 701 (Table 605.3 Water Service Pipe) and with NWC requirements. In addition, the choice of material should be in-line with the local content requirements.

h. As part of the metering strategy, each tenant to provide a water meter connected to the SILZ SCADA system. For details, refer to the relevant specifications and typical details of these water meters.

i. During construction, the tenant to allow for truck filling connection for temporary water feeding.

Domestic Water and Firefighting
Water Demand Calculations

The average water demand is based on the following criteria:

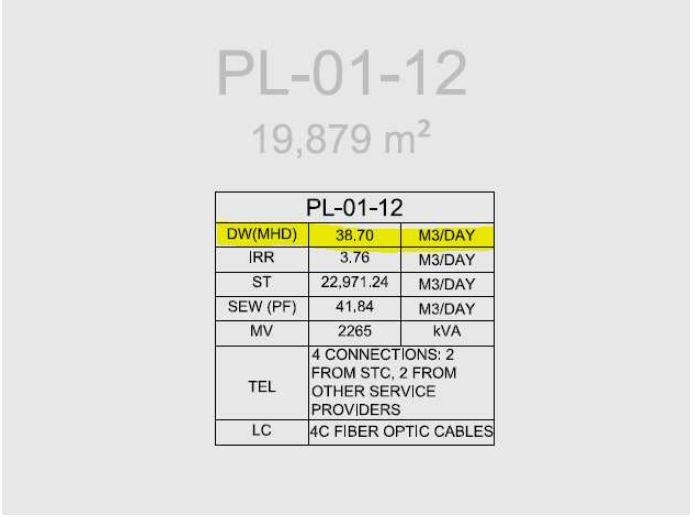
Facility and User Type	Domestic Water Unit Demand
Warehouses Employees	50 L/Capita/Day
Assembly Facilities Employees	50 L/Capita/Day
Support Offices Employees	50 L/Capita/Day
Amenities Employees	50 L/Capita/Day
Support Facilities Employees	50 L/Capita/Day
Visitors	15 L/Capita/Day

The Tenant has to calculate the volume needed for a 5-day domestic water tank based on the peak daily flow, as follows:

- Peak Daily Factor = 1.6
- Tank Volume = Average Demand x 1.6 x 5

If the required volume is higher then listed in the above table, the Tenant has to submit a calculation report to the owner and ask for approval.

The hourly peak factor is assumed to be 2.5. This is used to calculate the peak hourly water demand for each plot. This peak demand is shown on the plots house connections layout plans as illustrated in the below extract from the drawings (highlighted in yellow).



Domestic Water and Firefighting

Firefighting Design Guidelines

a. The residual pressure available on site reaches a maximum of around 5.5 bars.

b. The extension of a combined Fire Fighting and Domestic Water Network within the plot and building will be under the Tenant's scope of work. The main Network is able to supply extension of external fire fighting network (hydrants) in terms of available pressure and volume.

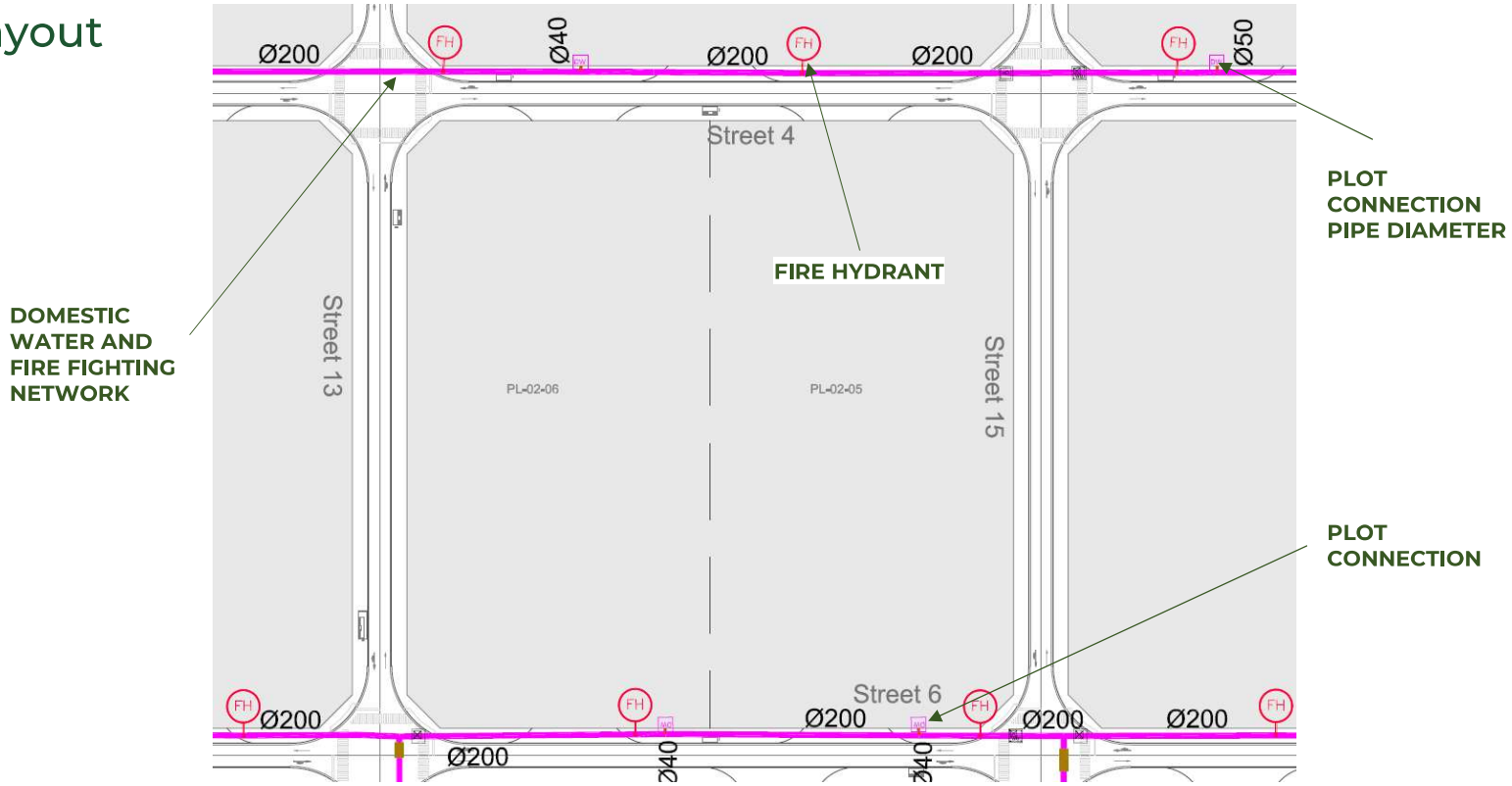
c. Allow for 9463 liters per minute (2500 GPM) for the duration of two (2) hours for the purpose of calculation of the fire event scenarios within plots. The provided firefighting capacity (9,463 L/min for 2 hours) applies to the external network as a design baseline. Tenants are responsible for performing detailed fire risk assessments and designing internal fire protection systems in compliance with NFPA standards and local regulations

d. Each tenant will have to provide a dedicated fire tank and pump inside the plot to allow for the needed pressure even if the external pressure is enough as per the provided hydraulic calculations.

Domestic Water and Firefighting

Typical Network Layout

The image illustrates the typical Domestic water and firefighting network layout for tenant plots.



03.12

Irrigation

Irrigation Network
References

Design of irrigation network extension within Plots shall be carried out in line with the guidelines, codes and best practice developed by International agencies/associations and adopted in the Kingdom of Saudi Arabia including but not limited to:

- Saudi Building Code (SBC: 701 Sanitary),
- National Water Company (NWC) Standards,
- American Water Works Association,
- International Plumbing Code (IPC),
- ANSI/ASME/ASTM
- MOMRA Standards
- BS standards

Irrigation Network
Design Guidelines

a. Irrigation Network will be extended to each plot. Branch connection will be uPVC, PN10, SDR 21, and it will be terminated few meters inside of each plot. Each branch will be terminated with an isolation valve and flow meter within valve chamber and will be capped to allow easy extension within the plot. Refer to plan drawings for the location of valve chambers and details for valve chamber.

b. The diameter of each house connection is shown on the layout plans.

c. Irrigation water demand for Tenants (inside each plot) is limited to provide sufficient water amount to cover 3.5% surface with low type of water demanded greenery.

d. The landscape inside plots is assumed to be on low demand of water, a rate of 8 lit/m2/day is adopted.

e. Available pressure to be 2 – 5 bar depending on the location.

f. The irrigation mode for groundcover, shrubs, and trees will be based on driplines.

g. A 5-day irrigation storage tanks shall be proposed for each plot.

h. All Materials have to comply with SBC 701 (Table 605.3 Water Service Pipe) and with NWC requirements. In addition, the choice of material should be in-line with the local content requirements.

i. As part of the metering strategy, each tenant to provide a water meter connected to the SCADA system. For details, refer to the relevant specifications and typical details of these water meters.

j. During construction, the tenant to allow for truck filling connection for temporary irrigation feeding.

Irrigation Network

Irrigation Demand

The irrigation demand for each plot is calculated and inserted in the detailed layout plans of plots house connections as shown in the below extract from the drawings and highlighted in yellow.

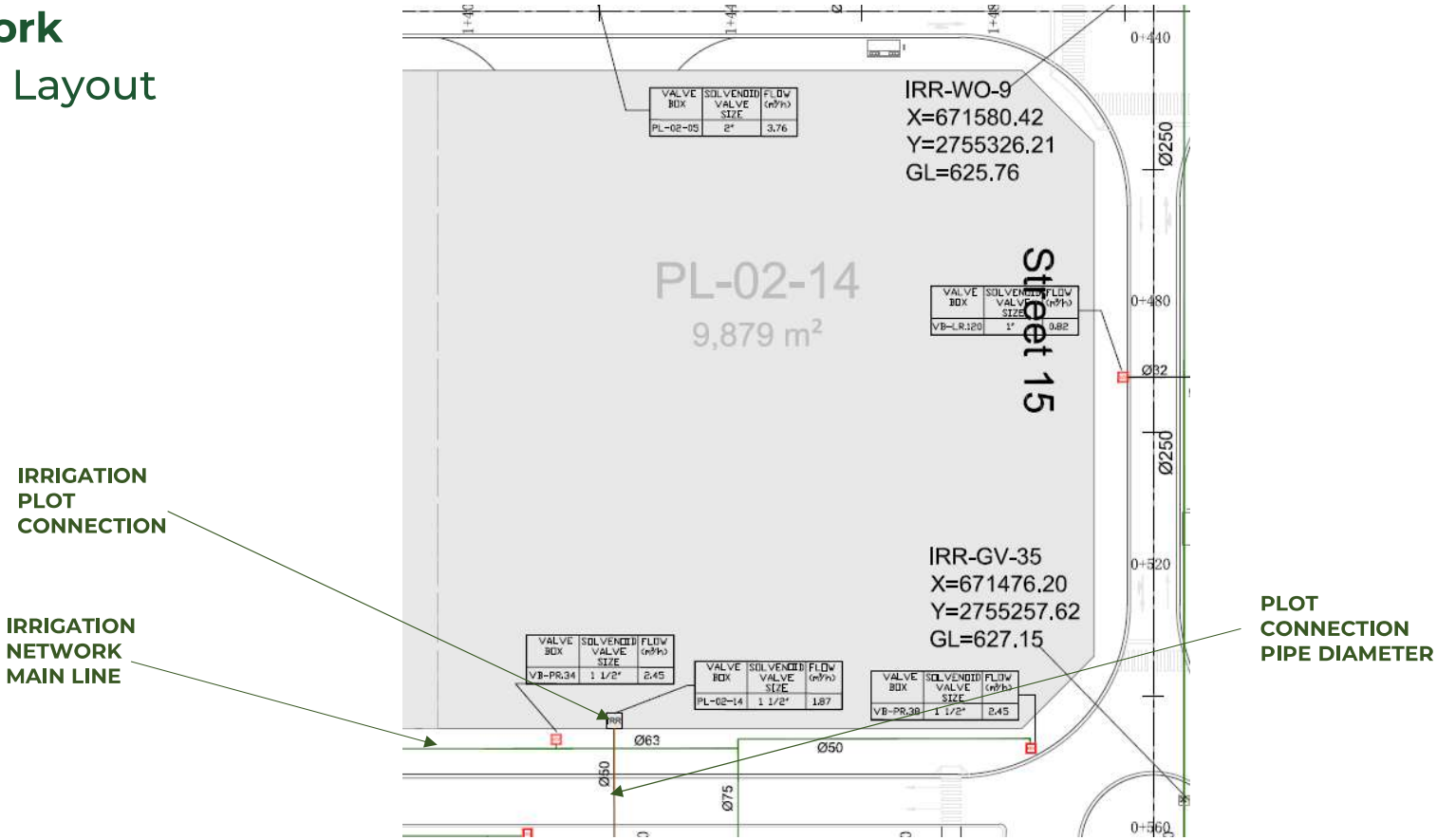
PL-02-11		
DW(MHD)	9.78	M3/DAY
IRR	0.95	M3/DAY
ST	5,767.73	M3/DAY
SEW (PF)	10.54	M3/DAY
MV	566	kVA
TEL	4 CONNECTIONS: 2 FROM STC, 2 FROM OTHER SERVICE PROVIDERS	
LC	4C FIBER OPTIC CABLES	

PL-02-12		
DW(MHD)	9.78	M3/DAY
IRR	0.95	M3/DAY
ST	5,788.04	M3/DAY
SEW (PF)	10.54	M3/DAY
MV	566	kVA
TEL	4 CONNECTIONS: 2 FROM STC, 2 FROM OTHER SERVICE PROVIDERS	
LC	4C FIBER OPTIC CABLES	

Irrigation Network

Typical Network Layout

The image illustrates the typical Irrigation network layout for tenant plots.



03.13

Sewage Network

Sewage Network
References

The design of the Sewage Network lateral plot connections has to be carried out in line with the guidelines and codes of practice developed by International agencies/societies and adopted in the Kingdom of Saudi Arabia:

- Saudi Building Code (SBC: 701 Sanitary),
- NWC Sewage Design Guidelines
- ANSI: American National Standard Institute
- ASTM: American Society for Testing and Materials
- Design and Construction of Sanitary and Storm Sewers, ASCE Manual and Report on Engineering Practice, MOP9.
- Gravity Sanitary Sewer Design and Construction, ASCE Manuals and Reports on Engineering Practice, MOP FD-5.
- Design of Wastewater and Storm water Pumping Stations, MOP FD-4
- American Water Works Association,
- British and European Standards and Codes of Practice (BS-EN)

Sewage Network
Design Guidelines

The plot layout of the drainage system should be kept simple. Changes of directions and gradient should be minimised and as easy as practicable. Access points should be provided only if blockages could not be cleared without them.

Connection of plot drains to the main sewage network should be made obliquely, or in the direction of flow. Pipes should be laid to even gradients and any change of gradient should be combined with an access point.

- Each plot will be supplied with a single connection for sewage.
- The minimum adopted gradients are those required maintaining a self-cleansing velocity of 0.75 m/s when flowing half-full, and maximum is recommended 2.5 m/s to extend sewer life expectancy.
- The recommended minimum slope shall be 0.5%.
- Service connections: with diameter ranging from 150 mm to 200 mm, implemented at a minimum depth of 1.2 m, conveying the generated wastewater by gravity from plots to the main system with respect to the lowest level of floor at house connections. The minimum service connection diameter to be used is 150 mm.
- Drainage system pipe material shall be constructed of low corrosive materials with maximum protection to concrete structures.
- During construction, a temporary septic tank serving for a minimum of 10 days is required.

Sewage Network
Design Guidelines - Materials

External sanitary networks (Saudi Sanitary Code-Plumbing SBC 701 – CR – Table 702.2):

- Inspection chambers and manholes should have removable non-ventilating covers of durable materials (cast iron, steel, precast concrete or plastics) and be of suitable strength. Manholes deeper than 1m should have metal step irons or fixed ladders.
- Recommended pipes materials are GRP, reinforced concrete, ductile iron, vitrified clay or HDPE (SN8).

Internal sanitary networks (Saudi Sanitary Code-Plumbing SBC 701 – CR – Table 702.2):

- Sanitary pipework connected to WCs should not allow light to be visible throught the pipe wall (due to potential rodents damage risk increased)
- All sanitary pipework receiving condensate should be made from materials resistant to a pH value of 6.5 and lower.
- The pipes, fittings and joints should be capable of withstanding an air test of positive pressure of at least 38mm water gauge for at least 3 minutes. Every trap should maintain a water seal of at least 25mm.
- Different metals should be separated by non-metallic materials to prevent electrolytic corrosion.
- All pipes with nominal ring stiffness SN4 or greater.
- Recommended pipes materials are cast iron, copper, galvanised steel, PP or PVC-U.

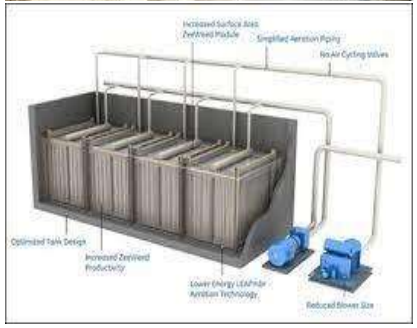
All Materials have to comply with local content requirements and NWC requirements.

Sewage Network

Pre-treatment, monitoring and control devices (trade effluent)

Any wastewater produced in the course of a trade or industry carried out at commercial or business premises is classified as "trade effluent". Trade Effluent will include any wastewater derived from a production process or from washing down or cooling activities. The following points shall be taken into consideration:

- The quality of wastewater permitted to be discharged into the external network should follow the sewage discharge quality report received from RAC and compliant with MEWA regulations. Tenants engaged in trade effluent activities must conduct regular sampling and testing to ensure that their adopted pre-treatment measures are satisfactory.
- Based on the type of a facility's processes, nature of assembly plants and specifics of the light industry activity, It may be necessary to install pre-treatment devices prior to discharging the effluent to the sewage network or put in place other risk control measures to mitigate any adverse effects.
- Any substance likely to produce flammable, harmful or toxic vapors will not be permitted to be discharged directly to the main SILZ sewage network.
- Any appropriate condition may be set to ensure that discharges do not cause a nuisance in the sewage network or at the Wastewater Treatment Plant, interfere with sewage treatment processes, prejudicially affect any watercourse or pose a threat to the health and safety of employees.
- Proper oil and grease interceptors should be added, where needed, before connecting into the external network.



Sewage Network

Sewage Flows

The generated average sewage flow is assumed to be 90% of the average water demand of each plot. In addition, the peak flow is calculated after applying a suitable peak factor using Babbitt formula, which is the adopted method from NWC.

The peak factor is calculated for a contributing population greater than 1000 individuals using Babbitt's formula as mentioned in the NWC design guidelines. The formula of the peak factor is as follows:

Peak factor: PF = $1 + \frac{14}{4+P^{0.5}}$

Where,

P = connected population/(1000)

The cutoff value for the sewage peak factor in the Babbitt's formula presented above is equal to 3.

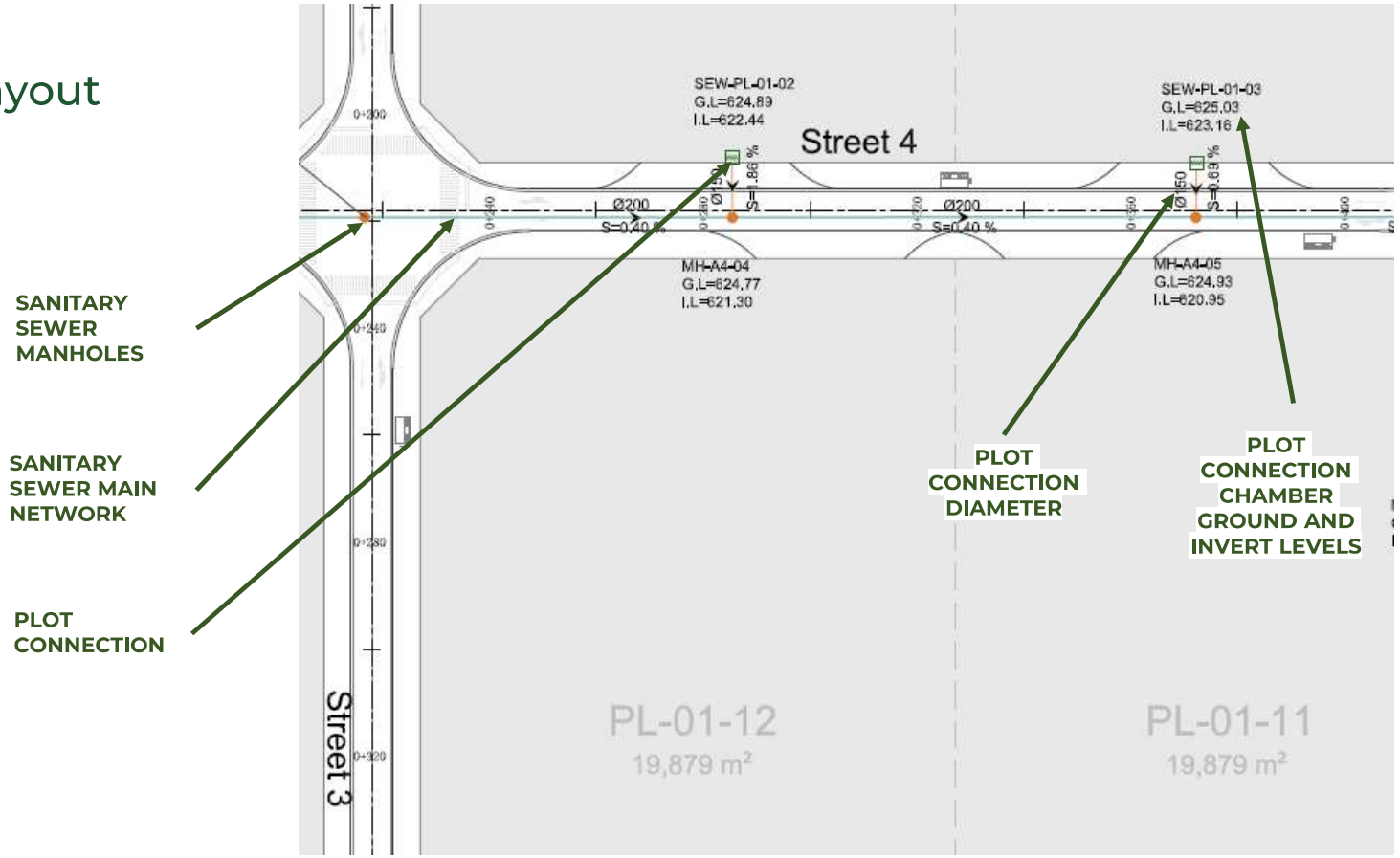
The sewage peak flow for each plot is calculated and inserted in the detailed layout plans of plots house connections as shown in the below extract from the drawings and highlighted in yellow.

PL-02-08		
DW(MHD)	38.93	M3/DAY
IRR	3.78	M3/DAY
ST	23,111.56	M3/DAY
SEW (PF)	42.11	M3/DAY
MV	2265	kVA
TEL	4 CONNECTIONS: 2 FROM STC, 2 FROM OTHER SERVICE PROVIDERS	
LC	4C FIBER OPTIC CABLES	

Sewage Network

Typical Network Layout

The image illustrates the typical sewage network layout for tenant plots.



03.14

Storm Water Network

Stormwater Network
References

The design of the stormwater network lateral plot connections has to be carried out in line with the guidelines and codes of practice developed by International associations and adopted in the Kingdom of Saudi Arabia:

- Saudi Building Code (SBC: 701 Sanitary),
- Design Guidelines for Storm Water Drainage Networks, Riyadh Amanah
- International Plumbing Code.
- ANSI: American National Standard Institute
- ASTM: American Society for Testing and Materials
- Design and Construction of Sanitary and Storm Sewers, ASCE Manual and Report on Engineering Practice, MOP9
- Design of Wastewater and Storm water Pumping Stations, MOP FD-4

أمانة منطقة الرياض
Al Riyadh Municipality

كود البناء السعودي
Saudi Building Code

Stormwater Network
Design guidelines

a. Pipelines shall be located within the Road Zone and separated from any other infrastructure services laid parallel to it.

b. The point of connection shall be located so it can service the lowest practical point on the property and should be capable of serving the whole of the lot. Where part of the lot is not able to be served for topographical reasons, the area of the likely or proposed building footprint and paved surfaces shall drain by gravity to the point of connection as a minimum. The diameter of lateral connections shall be sized based on plot area and estimated flows.

c. Gullies should be provided at low points of a plot where water would otherwise pond. Intermediate gullies should be provided at intervals to ensure that gullies are not overloaded and the depth of flow in channels is not excessive.

d. The minimum adopted gradients are those required maintaining a self-cleansing velocity of 0.75 m/s, and maximum is recommended 2.5 m/s to expand storm sewer life expectancy.

e. The recommended minimum slope shall be 0.4%.

f. The minimum storm water drainage pipe diameter is 300 mm.

g. Manholes will be provided for each plot to facilitate future connections. Surface water from the plots will be drained and directed to the main stormwater network through the following methods:

h. Storm Water Network will be extended to each plot. Branch connections will be terminated a few meters inside of each plot. Refer to plan drawings for the location of future extension plot manholes.

i. Contaminated surface runoff must be cleaned and treated before discharge to the main network and its quality shall comply with the regulations of Presidency of Meteorology and Environment (PME, Environmental Performance Standards - Appendix 1 of the Regulations, Table 13 – Direct Discharge).

j. Stormwater harvesting system inside the plots is encouraged, and the generated water can be used for irrigation.

k. Prior to construction, the tenant to submit a flood prevention strategy that ensures all measures are taken to prevent any flooding risks during construction and before the external stormwater system is operational.

Stormwater Network

Design guidelines - Materials

External storm drainage networks (Saudi Sanitary Code-Plumbing SBC 701 – CR – Table 702.2):

- Inspection chambers and manholes should have removable non-ventilating covers of durable materials (cast iron, steel, precast concrete or plastics) and be of suitable strength. Manholes deeper than 1m should have metal step irons or fixed ladders.
- Recommended pipes materials are reinforced concrete, ductile iron, vitrified clay or HDPE (SN8).

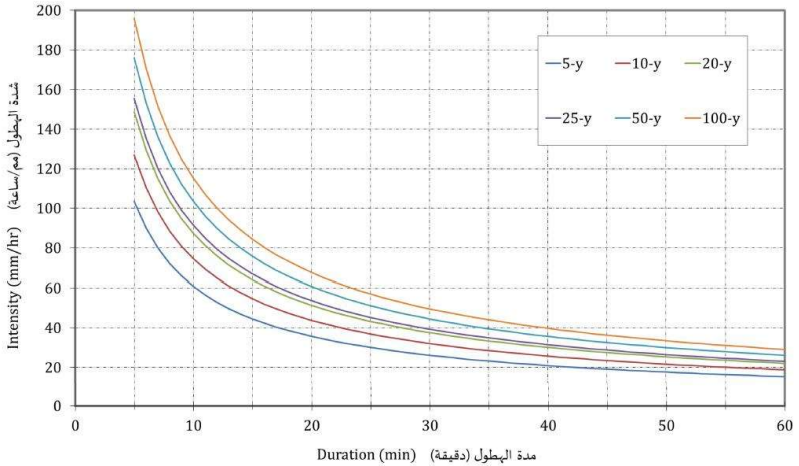
Internal storm drainage networks (Saudi Sanitary Code-Plumbing SBC 701 – CR – Table 1102.4):

- Storm water traps shall be of the same material as the piping system to which they are attached.
- The pipes, fittings and joints should be capable of withstanding an air test of positive pressure of at least 38mm water gauge for at least 3 minutes.
- Different metals should be separated by non-metallic materials to prevent electrolytic corrosion.
- All pipes with nominal ring stiffness SN4 or greater.
- Recommended pipes materials are galvanised steel, PVC-U or cast-iron.

All Materials have to comply with Riyadh Amanah requirements and should be in-line with the local content requirements.

Stormwater Network
Flow Calculations

a. The peak generated flow from each plot should be based on the adopted IDF curves from Riyadh Amanah.



b. The peak flow is calculated for the 10-year return period storm.

c. Rational formula to be used for peak flow calculations.

d. A minimum of 10-minute time of concentration should be adopted.

The stormwater peak flow for each plot is calculated and inserted in the detailed layout plans of plots house connections as shown in the below extract from the drawings and highlighted in yellow.

PL-02-03

38,631m²

PL-02-03		
DW(MHD)	75,17	M3/DAY
IRR	7,31	M3/DAY
ST	44,652.92	M3/DAY
SEW (PF)	81.16	M3/DAY
MV	4383	kVA
TEL	4 CONNECTIONS: 2 FROM STC, 2 FROM OTHER SERVICE PROVIDERS	
LC	4C FIBER OPTIC CABLES	

Stormwater Network

Performance Standards For Surface Runoff Discharge

(General Environmental Regulations And Rules for Implementation – Appendix 1, Table 13)

D-1- Physiochemical pollutants

(Pollutants)	(Allowable Effluent levels)
(a) Floatables	None
(b) pH	6-9 pH units
(c) Total suspended solids (TSS)	15 mg/liter (maximum limit)

D-2- Organic pollutants

(Pollutant)	(Allowable Effluent Level (30 day average)
(a) Biochemical Oxygen Demand (BOD)	25 mg/liter
(b) Chemical Oxygen Demand (COD)	150 mg/liter
(c) Total Organic Carbon (TOC)	50 mg/liter
(d) Total Kjeldahl Nitrogen (TKN)	5 mg/liter
(e) Total Chlorinated Hydrocarbons	0.1 mg/ liter
(f) Oil and Grease	8 mg/liter (not exceed 15 mg/liter in any individual discharge)
(g) Phenols	0.1 mg/liter

D-3- Inorganic pollutants

(Pollutant)	(Allowable Effluent Level (30 day average)
(a) Ammonia (as nitrogen)	1.0 mg/ liter
(b) Arsenic	0.1 mg/liter
(c) Cadmium	0.02 mg/liter
(d) Chlorine (residual)	0.5 mg/liter
(e) Chromium (total)	0.1 mg/liter
(f) Copper	0.2 mg/liter
(g) Cyanide	0.05 mg/liter
(h) Lead	0.1 mg/liter
(i) Mercury	0.001mg/liter
(j) Nickel	0.2 mg/liter
(k) Phosphate (total as phosphorous)	1.0 mg/liter
(l) zinc	1.0 mg/liter

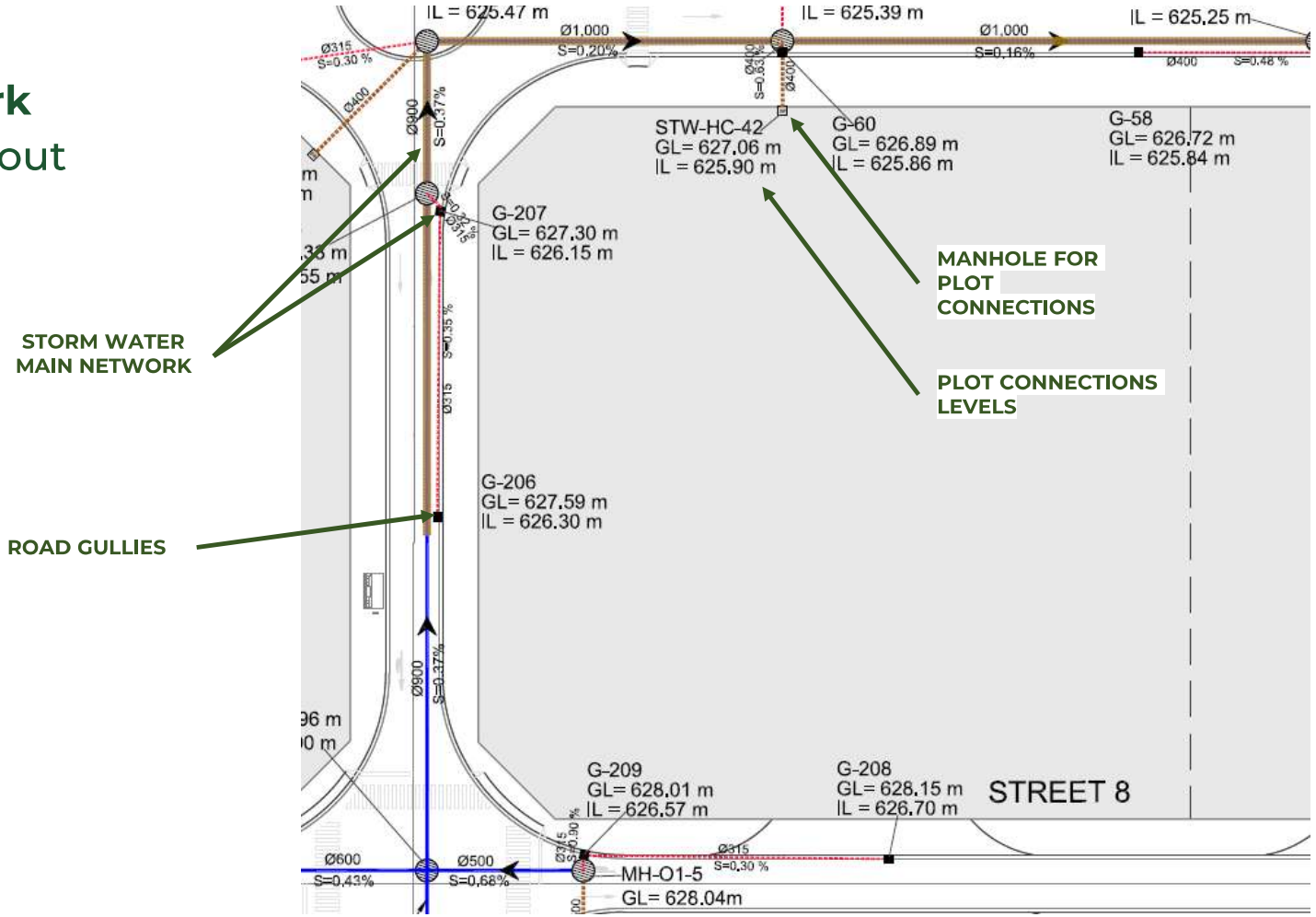
D-4- Biological pollutants

(Pollutant) average)	(Allowable Effluent Level (30 day
(a) Total Coliform	1000 most probable number (MPN) per 100 ml (average for 30 day period)

Stormwater Network

Typical Network Layout

The image illustrates the typical stormwater network layout for tenant plots.



03.15

Power Supply

Power Supply
Design standards

The design of Electricity Power Supply lateral plot connections has been carried out in line with the standards, guidelines and codes of practices developed by International Standards Organizations, agencies/ associations and adopted in the Kingdom of Saudi Arabia:

- Saudi Building Codes,
- Saudi Arabian Standards Organization,
- Saudi Electricity Company Distribution Standards,
- SEC Distribution Planning Standard DPS-01,
- International Electro-Technical Commission,
- International Standard Organization,
- British and European Standards and Codes of Practice (BS-EN),
- ANSI/ASME/ASTM.

Power Supply
Grid Substation & MV network

- The HV Power Supply will be brought to SILZ Site through overhead 132KV transmission lines by SEC from the nearest existing node. The high-voltage transmission lines will be routed underground by SEC before entering the project limits.
- The HV Grid Substation is sized and situated on Site as approved by SEC.
- SEC will be design-build and operate the HV Grid Substation. The site will be provided with dedicated 138/13.8kV Grid Substation which will consist of 3x67MVA transformers. A provisional space for a similar Grid Substation near the above one is allocated for

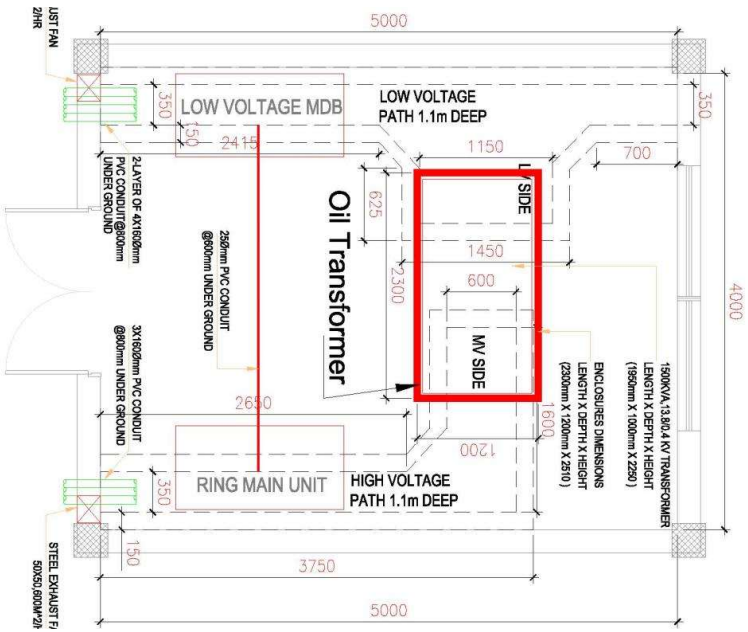
The Medium Voltage (MV) network will consist of 13 TEE- loops, 8 for Phase 1 and 5 parallel Tee-LOOPS for phase 2.

Power Supply
MV Network

The MV Network loops will be of the:

- Directly buried type, arranged in TEE-loop formation.
- If one leg of a loop is faulted, the remaining leg(s) will continue feeding the entire loads of the faulted loop.
- The maximum capacity of the loop type is 12.4 MVA.

The Tenant Substations shall be of the indoor or outdoor type, as preferred by Tenant, in compliance with SEC standards with Oil-immersed type transformers of standard sizes, 500, 1000 or 1500 KVA.



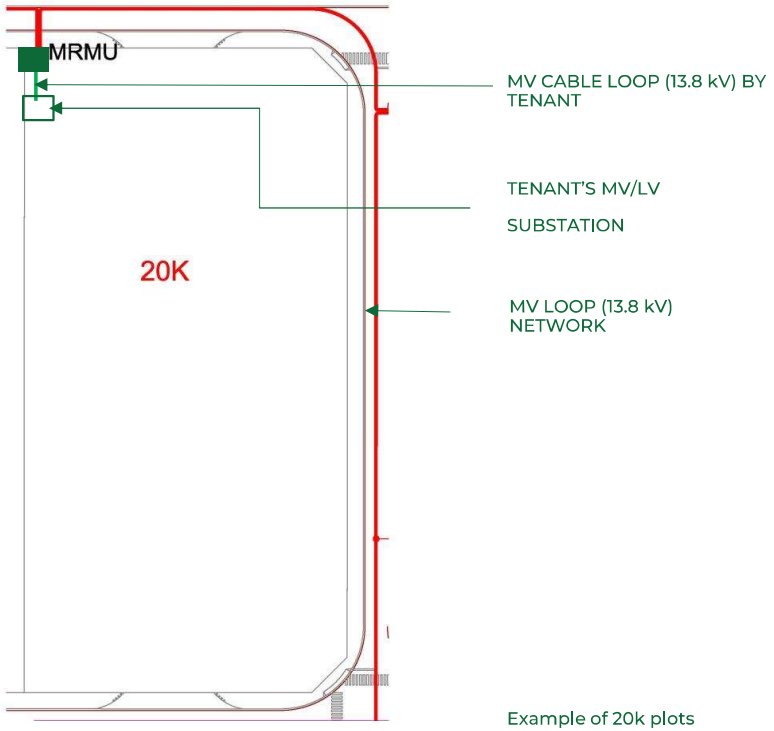
Typical Indoor Transformer Substation

Typical Outdoor Package Unit Substation

Power Supply
MV Network

The Tenant Supply shall be:

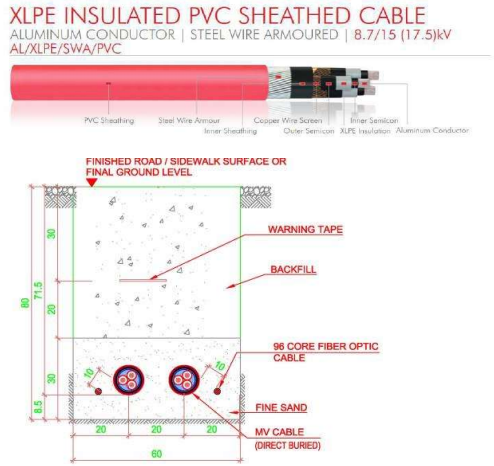
- Supplied from a metered ring main unit (MRMU) to SEC Standards but supplied with additional built-in net billing smart meter connected to Tenant Solar PV System. The MRMU will be supplied by SILZ that situated at Tenant's premises boundaries and fenced out for SILZ accessibility.
- Provided with the necessary interface auxiliaries with SILZ SCADA for reporting alarms and energy consumption reading into the SILZ Control Center



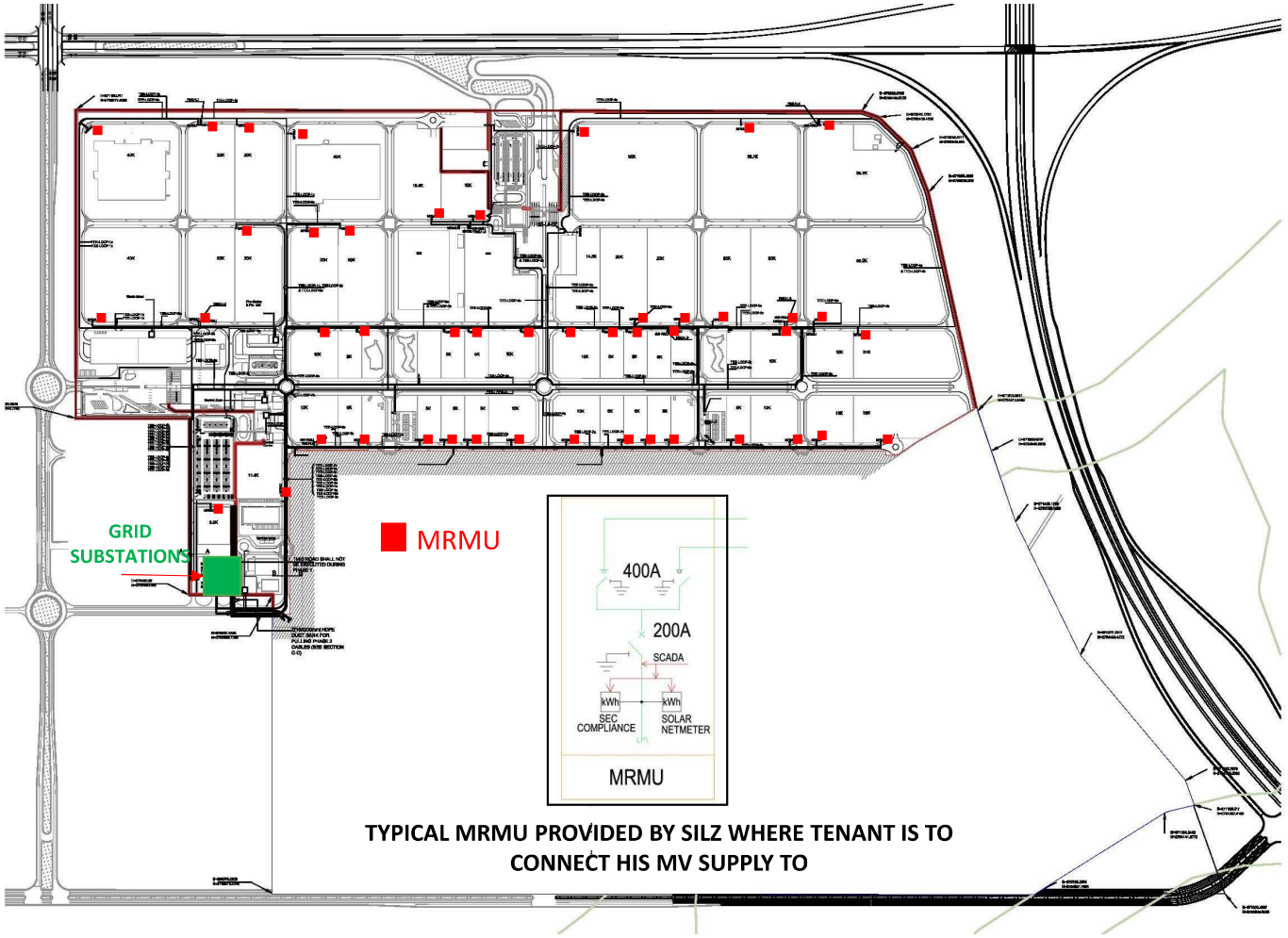
Example of 20k plots

Power Supply
MV Network

The Tenant shall connect his MV Supply to the MRMU as per detailed trench and cable specifications and , as approved by SILZ



TYPICAL SECTION OF 2no MEDIUM VOLTAGE CABLE DIRECT BURIED UNDER THE ROAD



Power Supply

Electric Energy Metering Scheme

The energy metering scheme in SILZ will be provided at the

- Level 1- HV Grid Substation: SEC provides energy meters within each indoor 13.8 kV cubicles of their HV Grid Substation.
- Level 2- MV Substations: Each indoor and outdoor 13.8/0.4 kV substation in the project is equipped with the normal power energy meter and solar net meter, where applicable. The reading of these meter is provided at SILZ's workstations.
- Level 3- LV Services: Each LV Feeder Pillar of the common Services are provided by energy meters connected to SILZ Control Center. Pillars feeding the EV chargers of the parking lots are connected to the solar system through a net energy meter.

Metering Level	Provider	Subscriber
1	SEC	SILZ
2	SILZ	TENANT
3	SILZ	SILZ

Power Supply
Low Voltage Network

Tenant's Demand Load Estimate

- The maximum estimated demand load density is 150VA/m2 of his built-up area.
- The generated solar PV System of the Tenant is a surplus to the above load density.
- The LV Network including exterior lighting installations within Tenant Premises is to be provided by Tenant in compliance with the Lighting Section of this report, Saudi Building Code (SBC) and SEC Standards, as applicable, and as approved by SILZ.

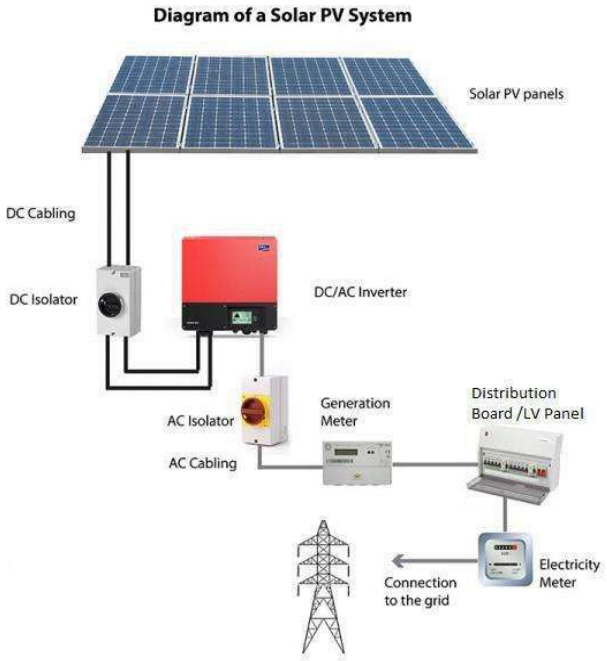
Typical Plot Size m2	Maximum Demand Load (KVA)
5 K	566
10 K	1133
20 K	2265

Power Supply
Low Voltage Network

Tenant's Solar PV (SPV) System

The adopted strategy for the design of Solar PV System (SPV) within Tenant Premises shall be as follows:

- Installing solar PVs over the 60% of the free roof space of the Tenants' Warehouses, in addition to that, the produced PV energy shall be not less than 5.4 W/m2 of conditioned floor area of the building or provide not less than 3% of building mechanical and service water heating and lighting energy (as per SBC 1001 - 2018)
- Over the shades of the Tenant's Car Parks.
- The Solar PV System will be of the on-grid type, that is no storage batteries are provided.
- The Tenant shall meter his generated solar energy SILZ via the dedicated meter by SILZ within the MRMU. SILZ could bargain surplus generation from Tenants
- PV System will be considered as mandatory system to comply with sustainability requirements.



Power Backup Generators

Tenants shall be capable to install backup generators if needed, following the underneath conditions:

- Follow NFPA 110 (Standard for Emergency and Standby Power Systems).
- Adhere to Saudi Building Code (SBC) Section 2702 for generator installation.
- Use sound-attenuating enclosures to maintain outdoor noise levels stated below:
    1. Warehouse & Storage: 45 dB night, 50 dB evening, 55 dB day
    2. Light Workshops / Tire Service Centers: 45 dB night, 50 dB evening, 55 dB day
    3. Industrial Workshops / Specialized Service Centers: 50 dB night, 60 dB evening, 65 dB day
    4. SILZ Amenities building: 40 dB night, 45 dB evening, 50 dB day
- Maintain a minimum clearance of 1.5 meters from walls or combustible materials.
- Avoid installation near air intakes or occupied areas.
- Ensure exhaust systems direct emissions safely away from buildings and comply with environmental regulations.
- Install fuel storage and piping in compliance with NFPA 110 to prevent fire hazards and leaks.
- Provide an Automatic Transfer Switch (ATS) for seamless power load transfer during outages.
- Coordinate with local authorities to obtain necessary permits and complete inspections.

Power Supply
Low Voltage Network

Electric Vehicles (EV) Charging points within Tenant Premises

The Tenant shall provide EV Charges in compliance with LEED recommended criteria, for earning extra LEED points, as a minimum:

- 5% of his car parks are to be provided by EV Chargers with a minimum of 2.

The EV Charging System in the Tenants zones is to comprise:

- EV chargers.
- Ethernet Networking
- Power Supply Networking
- Load Management system (LMS)
- Interface with SILZ Control Center - OPTIONAL

03.16

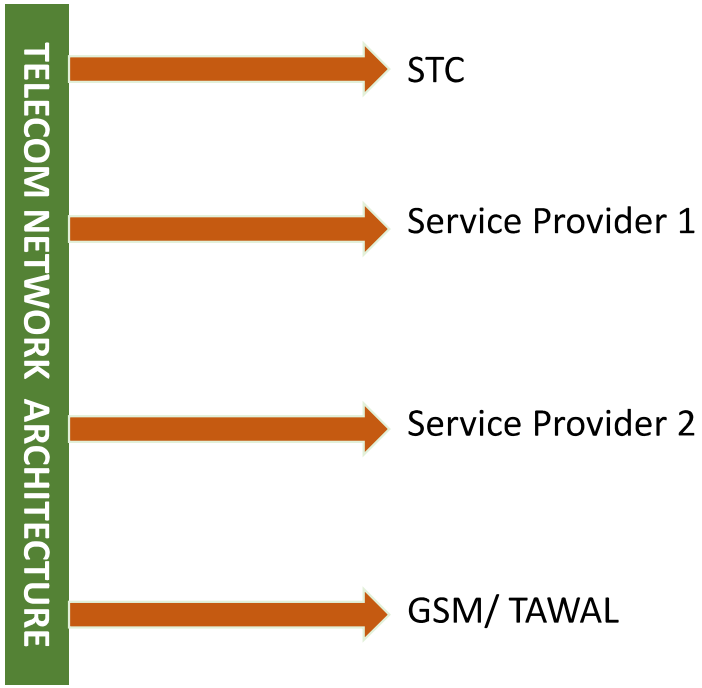
Telecom Network

Telecom Network

Design strategy

The infrastructure Telecom network is designed in compliance with STC standards, with full redundancy to assure a highly reliable Voice and Data communication platforms to the Tenants, as follows:

- STC Network
- Service Provider 1
- Service Provider 2
- GSM via TAWAL Towers



Telecom Network
Redundancy

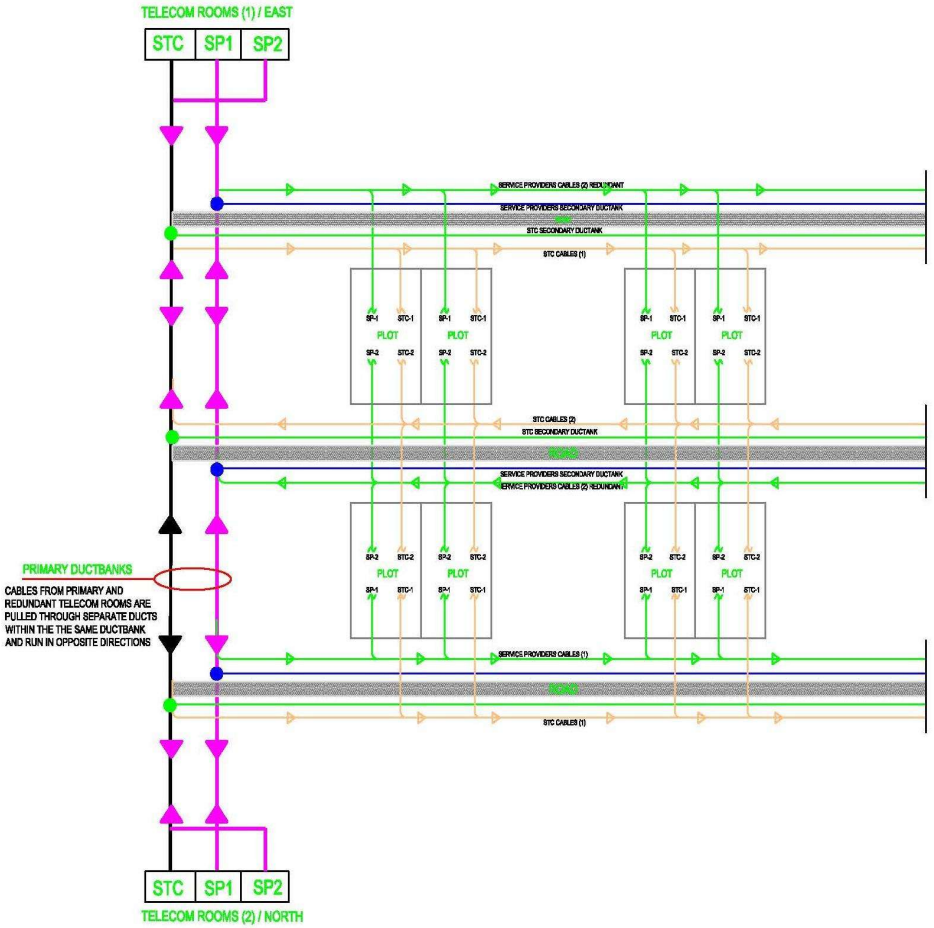
Telecom Rooms	Duct Banks and Manholes
Two distinct Telecom rooms block are provided. One is the primary while the second is a redundant to it.	Two Independent empty telecom ductbanks with the associated manholes/ handholes are provided for STC and a minimum of two Service providers.
Each Telecom Rooms Block comprises three separate rooms, one for STC, while the other two rooms are for the two Service Providers (1) and (2).	Two Fiber optic cable connections are terminated from the adjacent manholes of each stakeholder (STC and Service Providers manhole) into the Tenant Plot. This means each tenant plot shall be provided with a total of four distinct drop conduits group from different directions.
The two Telecom rooms blocks are located at the North and East Gates interlocked via two distinct primary Telecom Ductbanks	The ductbank construction shall suit the cabling strategy. each of the two termination cables shall come to the tenants' plots through the relevant independent ductbanks, but always within distinct ducts.

Telecom Network
Cabling Strategy

The Telecom cables from the distinct Telecom rooms are coming to Tenant Plots from two opposite direction

The drop cables will enter the Tenant Plots from two opposite directions. This means two drop conduits set will enter from one side of the plot while the other two sets enter the plot from the opposite side .

The above drop conduits sets are terminated within two distinct manholes

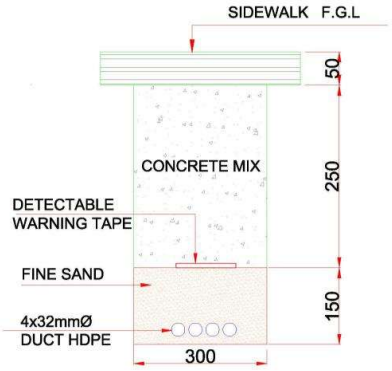


Telecom Network

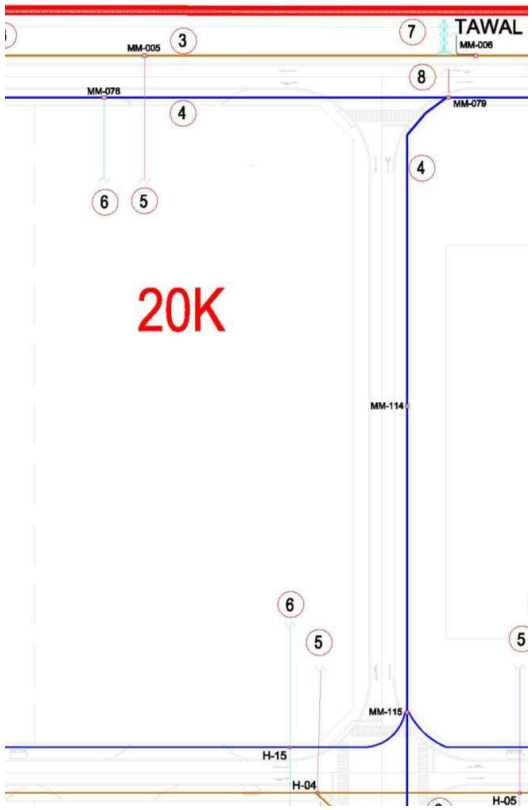
Typical Conduiting Strategy

The Telecom cables are coming from 2 distinct Telecom at opposite direction

The above drop conduits sets are terminated within two distinct manholes



SECONDARY DUCT BANK TYPES (5) AND (6)

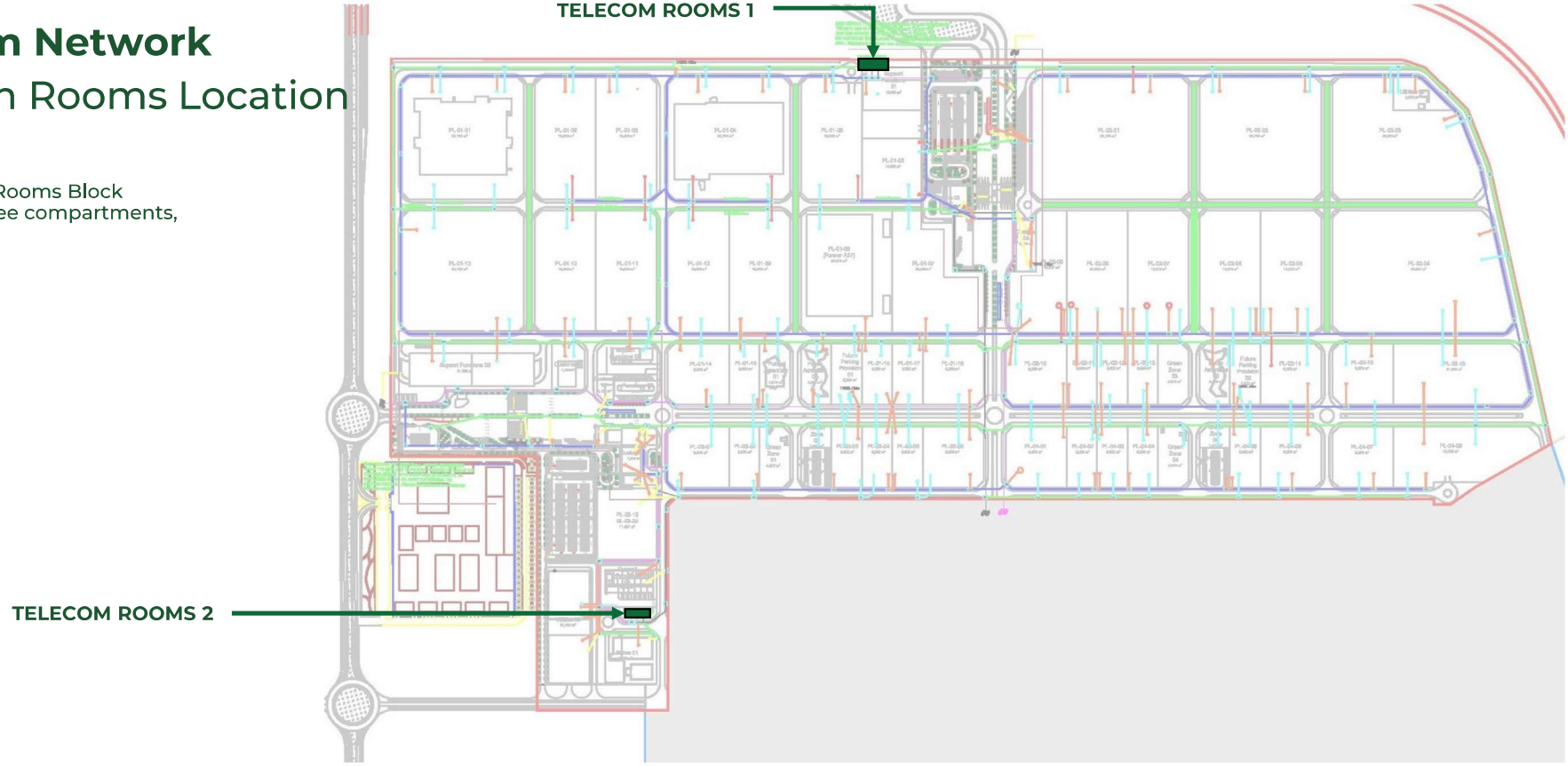


Legend
(3) Secondary Telecom Duct bank-STC
(4) Ditto-Service Providers
(5) Drop Conduits 4x32mm HDPE-STC
(6) Ditto-Service Provider
(7) Drop Conduits to TAWAL 2x32mm HDPE-STC
(8) Ditto-Service Provider
Manhole-STC
Ditto- Service Providers

Telecom Network

Telecom Rooms Location

Each Telecom Rooms Block comprising three compartments, each is 60m2



03.17

Smart City Initiative

Smart City Network

Summary

1- Smart City Standards in SILZ

The configuration of the Low Current and Telecom networks are intended to secure an appropriate infrastructure architecture for providing:

- Integrated infrastructure for better use of energy and water.
- Integrated Life Safety Systems
- High communication standards.
- Better Environmental Standards than same in traditional cities.

2- Infrastructure Services Integration:

The SILZ infrastructure networks are integrated through a smart Building Management System connecting the various Buildings and the Tenant Plots, Infrastructure Services and Utility Buildings through a SCADA System within the project's Control Center and the Facility Management.

3-Security and Life Safety:

The project's infrastructure security systems such as CCTV and X-RAY detection Units in addition to the integration of the Tenant buildings life / property safety system with the Control Center will enhance the security and safety standards in SILZ. The Tenants' fire alarm system, intrusion alarm system, water / fluid leakage detectors are interfaced with the Control Center via the Landlord SCADA. For instance, in case of a local alarm is initiated in a Tenant Warehouse, a simultaneous alarm will also be reported to the Control Center.
External warehouse doors and office doors alarmed to detect unauthorized opening and linked to main alarm system.
Intrusion detection (e.g. infrared, motion, sound, or vibration detection), is required to monitor the internal warehouse areas. The alarms must be activated and linked to the main alarm system during non-operational hour.
Perimeter intrusion detection or physical barriers are always required on external doors and ground-floor windows in office and warehouse.

4- Provisions for Pollution Control:

The pollution level in the project is decreased considerably with the Solar PV Systems installed on the 60% of the roof's free space of the Tenants buildings and on the Shades of the Public Parking.

Pollution detectors are recommended for tenants specialized in products that might produce polluted emissions (such as H2 for batteries storage and charging, NH3 for cold rooms...etc.). These sensors (where needed) are encouraged to be interfaced with the SCADA network.

5- Tenants BMS RTUs:

Tenants are recommended to provide provisions for interface between the Tennant's BMS remote terminal units RTUs to SCADA.

This interface purpose is to inform the smart city operators about pertinent problems in tenants plots.

Smart City Network

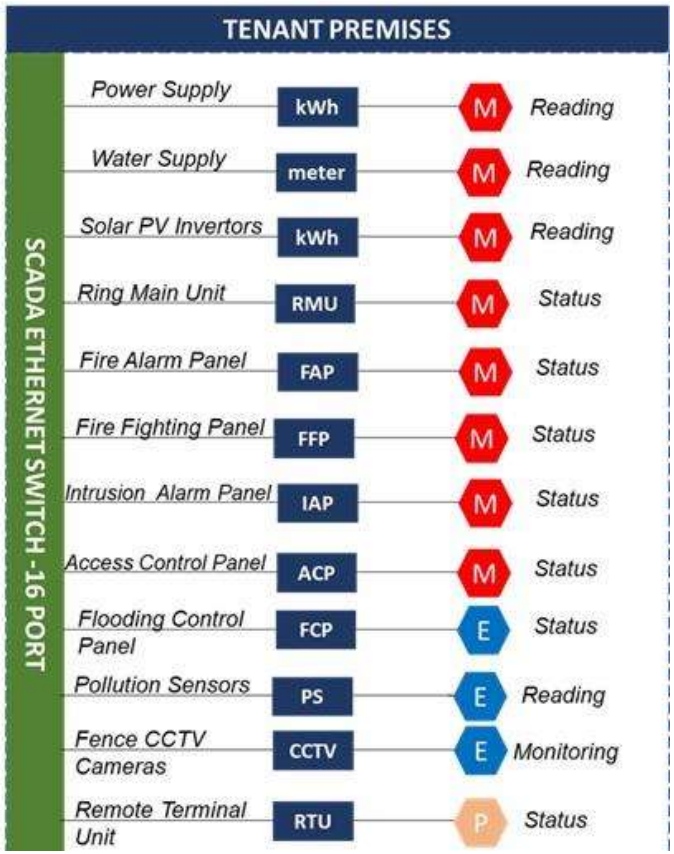
Tenant's Interface to SILZ SCADA System

A typical Tenant Plot is presenting the mandatory, encouraging and provisional items to be connected to SILZ SCADA. This makes the project smarter and safer.

The strategy of Smart and Life Safety connections to be provided by the Tenants are classified as follows:

- Items denoted by (M) are mandatory.
- Items denoted by (E) are encouraging
- Items denoted by (P) are provisional

From Adjacent Outdoor LC Cabinet of SILZ



Smart City Network

Tenant's Interface to SILZ SCADA System

System	Classification	Description
Power Supply	Mandatory	Tenants shall provide eletrical energy meters, capable to be IP interfaced directly or via a suitable gateway
Water meters	Mandatory	Tenants shall provide water supply meters, capable to be IP interfaced directly or via a suitable gateway
Solar PV Inverters	Mandatory if PV system is installed	Tenants shall provide bidrectional eletrical energy meters, capable to be IP interfaced directly or via a suitable gateway
Ring Main Unit	Mandatory	Fault Status of RMU, with suitable IP gateway
Fire Alarm Panel	Mandatory	Tenants shall provide fire alarm control panel with IP interface for monitoring
Fire Fighting Panel	Mandatory	Tenants shall provide fire fighting control panel with IP interface for monitoring
Intrusion Alarm Panel	Mandatory if installed by tenants	In case tenants use intrusion system, it shall by interfaced to the control center via Smart City Network
Access Control Panel	Mandatory	Tenants shall provide Access control panel with IP interface for monitoring
Flooding Control Panel	Encouraging	If Flooding System is used, it is highly rcommended to interface it with the control center
Fence CCTV System Cameras	Encouraging	Fence CCTV System Cameras are highly recommended to be interfaced with the control center for safety considerations
Pollution Sensors	Encouraging	Pollution Sensors are encouraged in tenants plots and shall be connected to the SCADA System.
BMS Remote Terminal Units	Provisional	Provisional ports in the SCADA Switch shall be reserved for BMS Remote Terminal Units

Tenants Scope:

- 1st Fix Scope (civil works, sensors…),
- 2nd Fix Scope (Ethernet Switch, hardware, power supply, conduits, cabling „„),
- 3rd Fix Scope (integration, calibration, software): Collaboration with SILZ for systems' Integration with the control center

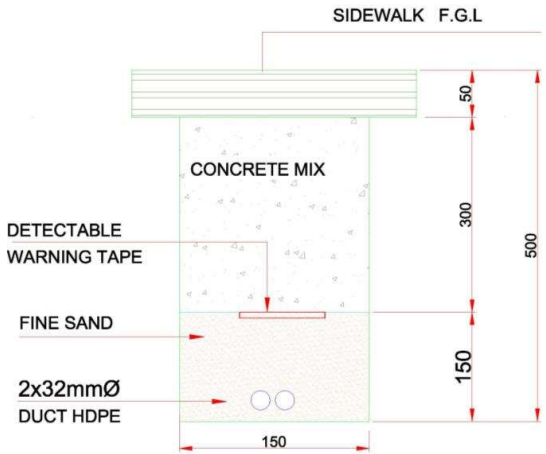
SILZ Scope:

- SILZ Scope is limited to fiber cable between the tenant ethernet switch and the control center.
- Third fix scope including integration with the control center shall be done by SILZ in collaboration with Tenants.

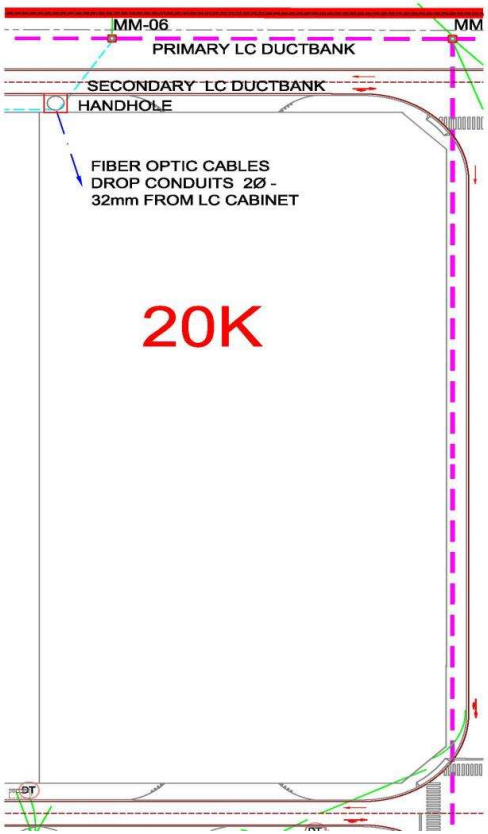
Smart City Network

Typical Conduiting Strategy Example for SCADA

Each Tenant will be supplied by 4-core-single mode outdoor type fiber optic cable via 2x32mm HDPE Drop conduits



DROP CONDUITS TO TENANTS PLOTS



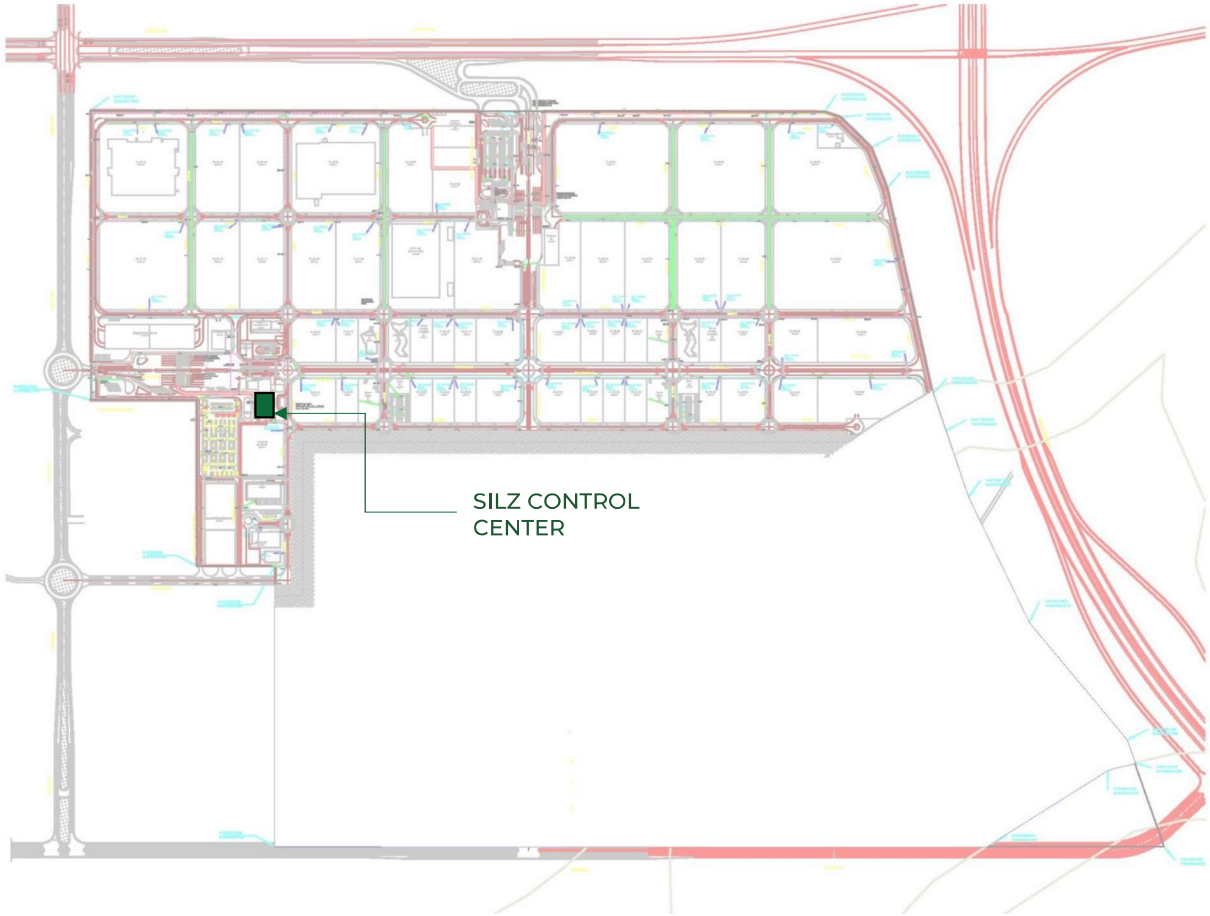
Smart City Network

SILZ control center location

The smart City System will include a common private network for SILZ low current services.

Connection will be done via intermediate fiber switches housed within the various outdoor low current cabinets provided by SILZ.

The SCADA switch for the interface between the tenants and the SILZ control center shall be provided by the tenants in coordination with SILZ operation team and located inside each tenant premises.



03.18

Electrical system in Tenants premises

Electrical system in Tenants premises

General

Each Tenant shall provide the various electrical systems within his premises in compliance with the specified regulations and as approved by SILZ.

Electrical system in Tenants premises

Tenant Scope of Work

The scope of Electrical Works covers, but not limited to the following:

1. Power Supply and Distribution

- Utility Power Supply connection to MRMU.
- Emergency Standby Power Generating Plant
- Solar PV Energy
- Critical loads supply (UPS System)
- Low Voltage (LV) Distribution boards, Feeders and Sub-feeders

2. Lighting Systems

- Normal Indoor Lighting
- Emergency lighting
- Exterior lighting

3. Wiring Devices and Miscellaneous Equipment

- Conventional / normal switches and sockets
- Cable Trays, Ladders and raceways
- Disconnecting Switches and Isolators

4. Earthing System

- Power Plants earthing
- LV Installation / rooms earthing
- LC Rooms, Security Rooms, Control and IT Rooms earthing

5. Lightning Protection System

- Faraday Cage system
- Surge Protection

6. Communication Systems:

- IP-Telephone System.
- Structural Cabling / Local Area Network (LAN)
- Fire-fighters Communication System

7. Fire Detection and Alarm System

- Fire Detectors and Sounders
- Interface to HVAC / Elevators as per code regulations
- Interlock with Fire Brigade.

8. Security Systems

- Closed Circuit Television System, CCTV
- Intrusion Alarm and Control System

9. Interface With SILZ SCADA System

10. Optional Systems

- Interactive television system (IPTV)
- Master clock and Staff Entrance Register System
- Public Address System
- Access Control System

Electrical system in Tenants premises

Codes and Standards

The following codes and standards will be adopted for the design of electrical, systems where not in contradiction with the LOCAL REGULATIONS, as applicable.

- The Medium Voltage (MV) Distribution Network shall be designed in compliance with the Local Regulations of Saudi Electric Company (SEC).
- The Low Voltage (LV) Distribution Network will be designed in compliance with the Saudi Building Code (SBC) and NFPA
- SCADA System will be designed in compliance with International Electrical Committee Standard No. IEC61850.
- The Exterior lighting System will be designed in compliance with the International Standard of the CIE - 140, where not in contradiction with local Saudi standards.
- The design of the Lighting System will be in accordance with the recommendations of the Chartered Institution of Building Services Engineers (CIBSE).
- The design of the Emergency Lighting System will be in accordance with the recommendations of the latest issue of NFPA 70 and NFPA 72.
- The design of the Fire Detection and Alarm System and Life safety and security will be in accordance with the recommendations of the latest issue of NFPA 70 and NFPA 72.
- The design of the Lightning Protection System will be in accordance with the recommendations of the latest issue of BS6651-Part (1).
- The Telephone and Data Distribution Network will be designed in compliance with the American Federal Standards where are not in contradiction with local regulations of the Saudi Telecommunication Company (STC).

All material specifications will comply with the relevant Local Regulations and the International standards IEC, NEMA or BSI, as applicable, and approved by the relevant local authorities

03.19

LPG

Liquefied petroleum gas

SILZ will not supply LPG in the Zone, If the Tenant require LPG or other type of GAZ the Tenant to coordinate and get appeoval from the relevant stakehlders for the design and construction in compliance the Applicable Law, Civil defense Codes, the Building Code, Good Industry Practice, or any other applicable codes, standards, decrees, laws, rules, or regulations.

04.

Plots configuration

Plots configuration
Introduction

The **plot configurations layout presented in this section is purely indicative and for illustrative purposes only**. These represent preliminary studies conducted to assess the general application of provided guidelines.

The focus of these studies is on key aspects such as building footprint, access points, internal circulation for both trucks and cars, as well as configurations for parking and loading/unloading areas.

The typical plot configuration layouts presented and studied in this section are exclusively **based on DMP Phase 1 plots** with regular shapes. It is important to consider that irregularly shaped plots may require distinct configurations and are subject to separate analysis.

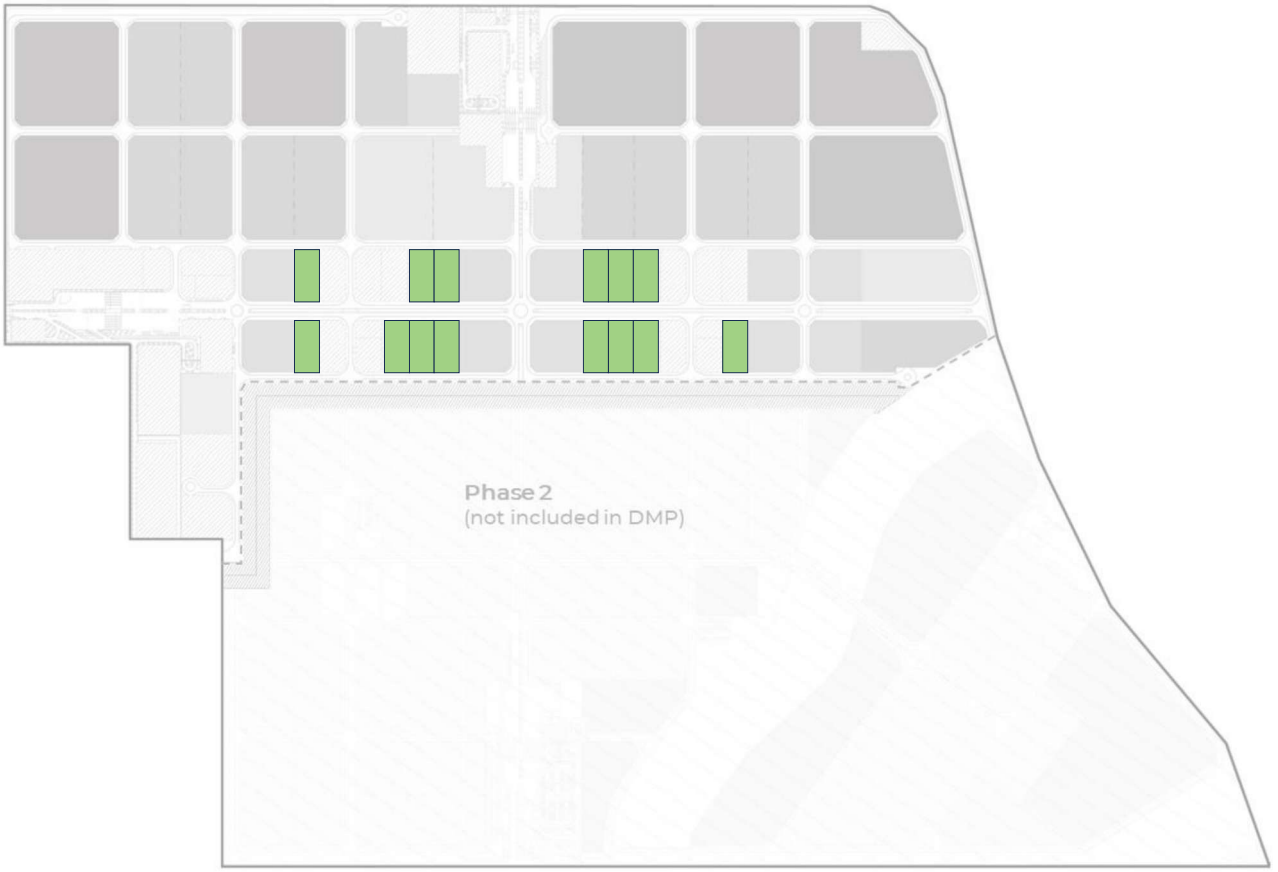
Plot configurations

10K Plots

We have categorized the **5K plots** into a single typology, since each plot in the masterplan have the same shape and plot access location:

- **Type A**: regular shape and central access

Different configurations are provided for each plot typology, with alternative distribution of building and office frontage, as well as loading bays and car parking areas.



The schemes show possible plots configurations. These plots layout are purely indicative and for illustrative purpose only.

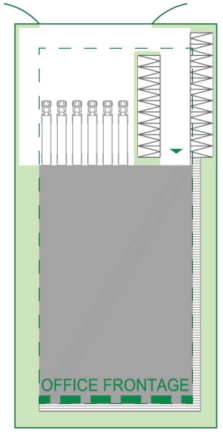
Plot configurations

5K Plot (Type A1)

The **5,000 sqm plots (Type A1)** are located along primary and local roads. This typology is characterized by:

- 1 single access point from local road
- Parking and delivery areas are located on local roads
- Offices frontage is located in facing the primary road

Typology	
Plot	5K
Plot type	Type A1
Plot configuration	
Plot area	5,000 sqm
Coverage	Min 40% - Max 60%
Building footprint	2,000 – 3,000 sqm
Setbacks	6 meters
Built-up Area	
F.A.R.	0.75
B.U.A.	3.750 sqm
Plot access	
Access	1 access point
Parking / Loading bays	
Car	20 parking spaces
Truck	6 bays



Building footprint of this option:

2,750 sqm (55%)

The schemes show possible plots configurations. These plots layout are purely indicative and for illustrative purpose only.

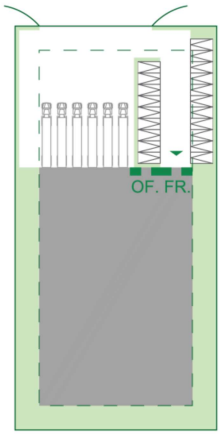
Plot configurations

5K Plot (Type A2)

The **5,000 sqm plots (Type A2)** are located along primary and local roads. This typology is characterized by:

- 1 single access point from local road
- Parking and delivery areas are located on local roads
- Offices frontage is located in proximity to the parking area

Typology	
Plot	5K
Plot type	Type A2
Plot configuration	
Plot area	5,000 sqm
Coverage	Min 40% - Max 60%
Building footprint	2,000 – 3,000 sqm
Setbacks	6 meters
Built-up Area	
F.A.R.	0.75
B.U.A.	3.750 sqm
Plot access	
Access	1 access point
Parking / Loading bays	
Car	20 parking spaces
Truck	6 bays



Building footprint of this option:

2,750 sqm (55%)

Plot configurations

10K Plots

We have categorized the **10K plots** into three distinct typologies, each identified based on both the shape of the plot and the location of plot access. The plots exhibit either a regular configuration or feature chamfered edges. Additionally, we differentiate them based on the access point, with some having central access while others provide access on the side:

- **Type A**: regular shape and central access
- **Type B**: chamfer of 2 corners and central access
- **Type C**: chamfer of 2 corners and access on the side

Different configurations are provided for each plot typology, with alternative distribution of building and office frontage, as well as loading bays and car parking areas.

The schemes show possible plots configurations. These plots layout are purely indicative and for illustrative purpose only.

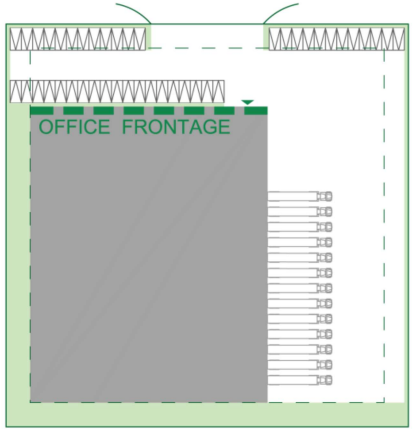
Plot configurations

10K Plot (Type A1)

The **10,000 sqm plots (Type A1)** are located along local roads. This typology is characterized by:

- 1 single access point from local road
- Loading/Unloading area on 1 side
- Single parking area for cars
- Offices frontage is located in proximity to the parking area

Typology	
Plot	10K
Plot type	Type A1
Plot configuration	
Plot area	10,000 sqm
Coverage	Min 40% - Max 60%
Building footprint	4,000 - 6,000 sqm
Setbacks	6 meters
Built-up Area	
F.A.R.	0.75
B.U.A.	7,500 sqm
Plot access	
Access	1 access point
Parking / Loading bays	
Car	43 parking spaces
Truck	13 bays



Building footprint of this option:

4,500 sqm (45%)

The schemes show possible plots configurations. These plots layout are purely indicative and for illustrative purpose only.

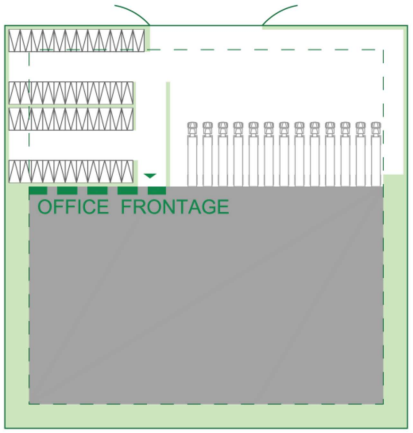
Plot configurations

10K Plot (Type A2)

The **10,000 sqm plots (Type A2)** are located along local roads. This typology is characterized by:

- 1 single access point from local road
- Loading/Unloading area on 1 side
- Single parking area for cars
- Offices frontage is located in proximity to the parking area

Typology	
Plot	10K
Plot type	Type A2
Plot configuration	
Plot area	10,000 sqm
Coverage	Min 40% - Max 60%
Building footprint	4,000 - 6,000 sqm
Setbacks	6 meters
Built-up Area	
F.A.R.	0.75
B.U.A.	7,500 sqm
Plot access	
Access	1 access point
Parking / Loading bays	
Car	45 parking spaces
Truck	13 bays



Building footprint of this option:

4,800 sqm (48%)

The schemes show possible plots configurations. These plots layout are purely indicative and for illustrative purpose only.

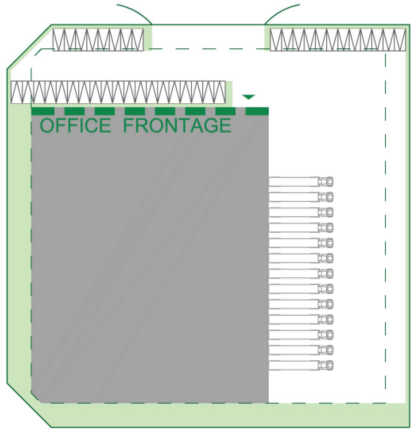
Plot configurations

10K Plot (Type B1)

The **10,000 sqm plots (Type B1)** are located along primary and local roads. This typology is characterized by:

- 1 single access point from local road
- Loading/Unloading area on 1 side
- Single parking area for cars
- Offices frontage is located in proximity to the parking area

Typology	
Plot	10K
Plot type	Type B1
Plot configuration	
Plot area	9,879 sqm
Coverage	Min 40% - Max 60%
Building footprint	4,000 - 6,000 sqm
Setbacks	6 meters (2.5m on chamfer)
Built-up Area	
F.A.R.	0.75
B.U.A.	7,409 sqm
Plot access	
Access	1 access point
Parking / Loading bays	
Car	40 parking spaces
Truck	13 bays



Building footprint of this option:

4,500 sqm (45%)

The schemes show possible plots configurations. These plots layout are purely indicative and for illustrative purpose only.

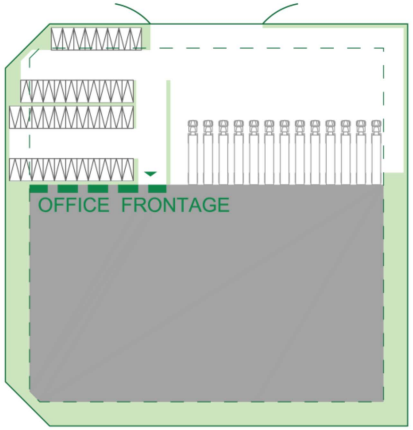
Plot configurations

10K Plot (Type B2)

The **10,000 sqm plots (Type B2)** are located along primary and local roads. This typology is characterized by:

- 1 single access point from local road
- Loading/Unloading area on 1 side
- Single parking area for cars
- Offices frontage is located in proximity to the parking area

Typology	
Plot	10K
Plot type	Type B2
Plot configuration	
Plot area	9,879 sqm
Coverage	Min 40% - Max 60%
Building footprint	4,000 - 6,000 sqm
Setbacks	6 meters (2.5m on chamfer)
Built-up Area	
F.A.R.	0.75
B.U.A.	7,409 sqm
Plot access	
Access	1 access point
Parking / Loading bays	
Car	40 parking spaces
Truck	13 bays



Building footprint of this option:

4,800 sqm (48%)

The schemes show possible plots configurations. These plots layout are purely indicative and for illustrative purpose only.

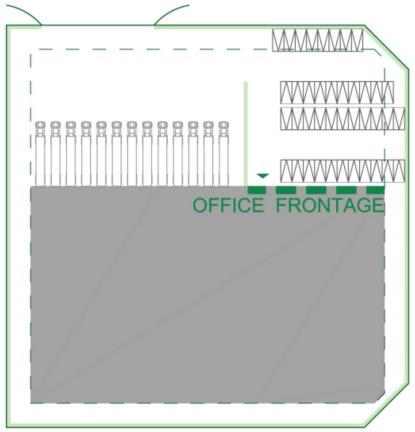
Plot configurations

10K Plot (Type C1)

The **10,000 sqm plots (Type C1)** are located along primary and local roads. This typology is characterized by:

- 1 single access point from local road
- Loading/Unloading area on 1 side
- Single parking area for cars
- Offices frontage is located in proximity to the parking area

Typology	
Plot	10K
Plot type	Type C1
Plot configuration	
Plot area	9,879 sqm
Coverage	Min 40% - Max 60%
Building footprint	4,000 - 6,000 sqm
Setbacks	6 meters (2.5m on chamfer)
Built-up Area	
F.A.R.	0.75
B.U.A.	7,409 sqm
Plot access	
Access	1 access point
Parking / Loading bays	
Car	40 parking spaces
Truck	13 bays



Building footprint of this option:

4,800 sqm (48%)

The schemes show possible plots configurations. These plots layout are purely indicative and for illustrative purpose only.

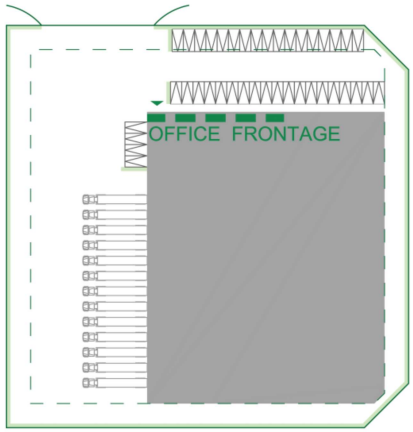
Plot configurations

10K Plot (Type C2)

The **10,000 sqm plots (Type C2)** are located along primary and local roads. This typology is characterized by:

- 1 single access point from local road
- Loading/Unloading area on 1 side
- Single parking area for cars
- Offices frontage is located in proximity to the parking area

Typology	
Plot	10K
Plot type	Type C2
Plot configuration	
Plot area	9,879 sqm
Coverage	Min 40% - Max 60%
Building footprint	4,000 - 6,000 sqm
Setbacks	6 meters (2.5m on chamfer)
Built-up Area	
F.A.R.	0.75
B.U.A.	7,409 sqm
Plot access	
Access	1 access point
Parking / Loading bays	
Car	40 parking spaces
Truck	13 bays



Building footprint of this option:

4,300 sqm (43%)

Plot configurations

20K Plots

We have categorized the **20K plots** into two distinct typologies, each identified based on both the shape of the plot and the location of plot access. The plots exhibit either a regular configuration or feature chamfered edges. Additionally, we differentiate them based on the access point, with some having central access while others provide access on the side:

- **Type A:** chamfer of 2 corners and central access
- **Type B:** chamfer of 2 corners and access on the side

Different configurations are provided for each plot typology, with alternative distribution of building and office frontage, as well as loading bays and car parking areas.

The schemes show possible plots configurations. These plots layout are purely indicative and for illustrative purpose only.

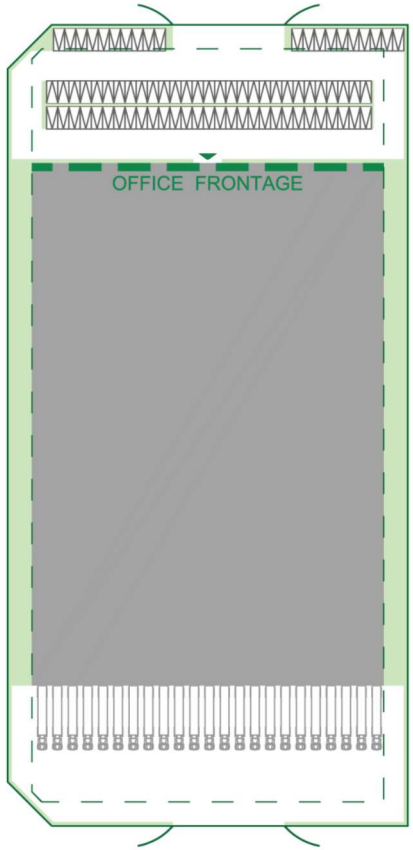
Plot configurations

20K Plot (Type A1)

The **20,000 sqm plots (Type A1)** are located along local roads. This typology is characterized by:

- 2 access points located on two plots sides (central)
- Loading/Unloading area on 1 side
- Single parking area for cars
- Offices frontage is located in proximity to the parking area

Typology	
Plot	20K
Plot type	Type A1
Plot configuration	
Plot area	19,879 sqm
Coverage	Min 40% - Max 60%
Building footprint	8,000 - 12,000 sqm
Setbacks	6 meters (2.5m on chamfer)
Built-up Area	
F.A.R.	0.75
B.U.A.	14,909 sqm
Plot access	
Access	2 access points
Parking / Loading bays	
Car	78 parking spaces
Truck	23 bays



Building footprint of this option:
11,000 sqm (55%)

The schemes show possible plots configurations. These plots layout are purely indicative and for illustrative purpose only.

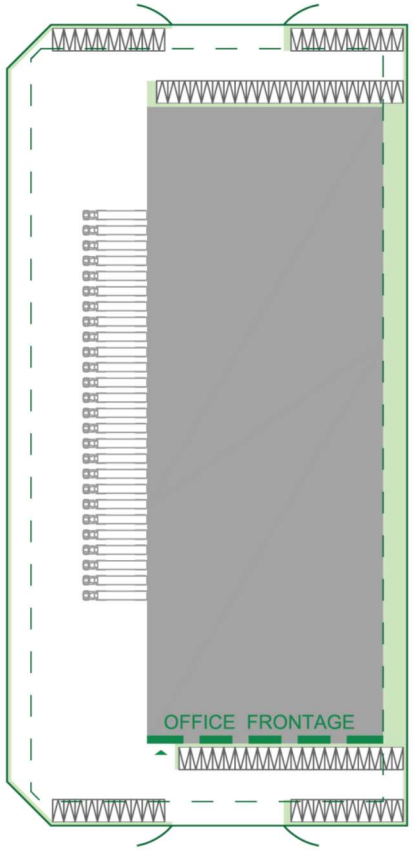
Plot configurations

20K Plot (Type A2)

The **20,000 sqm plots (Type A2)** are located along local roads. This typology is characterized by:

- 2 access points located on two plots sides (central)
- Loading/Unloading area on 1 side
- Parking area for cars on two sides

Typology	
Plot	20K
Plot type	Type A2
Plot configuration	
Plot area	19,879 sqm
Coverage	Min 40% - Max 60%
Building footprint	8,000 - 12,000 sqm
Setbacks	6 meters (2.5m on chamfer)
Built-up Area	
F.A.R.	0.75
B.U.A.	14,909 sqm
Plot access	
Access	2 access points
Parking / Loading bays	
Car	82 parking spaces
Truck	26 bays



Building footprint of this option:
9,500 sqm (48%)

The schemes show possible plots configurations. These plots layout are purely indicative and for illustrative purpose only.

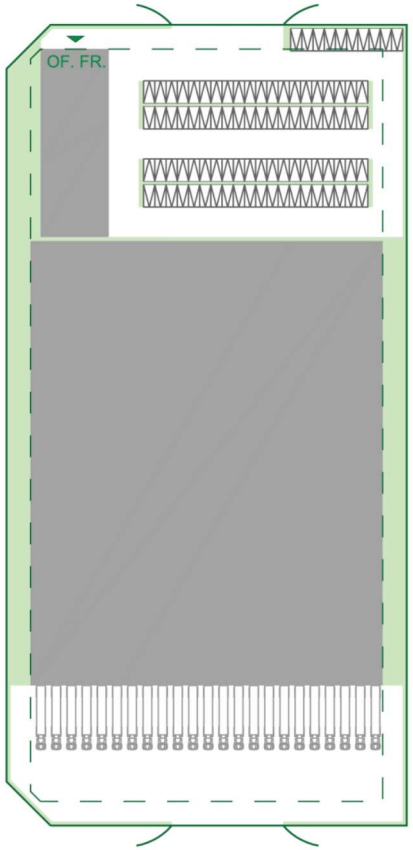
Plot configurations

20K Plot (Type A3)

The **20,000 sqm plots (Type A3)** are located along local roads. This typology is characterized by:

- 2 access points located on two plots sides (central)
- Loading/Unloading area on 1 side
- Single parking area for cars
- Office building is separated from the warehouse

Typology	
Plot	20K
Plot type	Type A3
Plot configuration	
Plot area	19,879 sqm
Coverage	Min 40% - Max 60%
Building footprint	8,000 - 12,000 sqm
Setbacks	6 meters (2.5m on chamfer)
Built-up Area	
F.A.R.	0.75
B.U.A.	14,909 sqm
Plot access	
Access	2 access points
Parking / Loading bays	
Car	90 parking spaces
Truck	23 bays



Building footprint of this option:
10,500 sqm (53%)

The schemes show possible plots configurations. These plots layout are purely indicative and for illustrative purpose only.

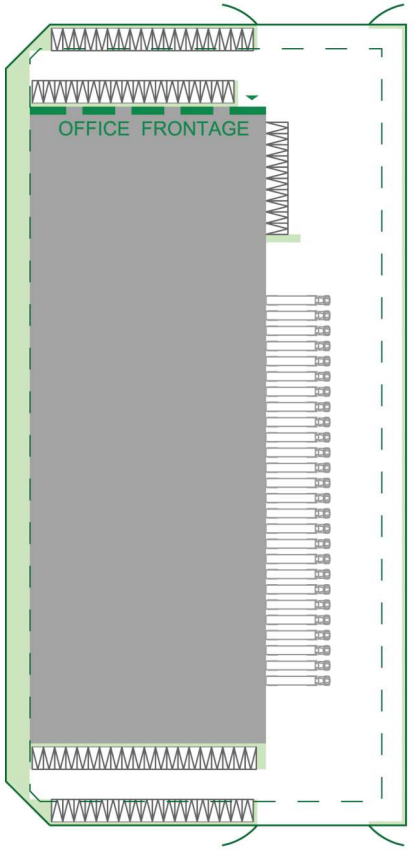
Plot configurations

20K Plot (Type B1)

The **20,000 sqm plots (Type B1)** are located along local roads. This typology is characterized by:

- 2 access points located on two plots sides
- Loading/Unloading area on 1 side
- Parking area for cars on two sides

Typology	
Plot	20K
Plot type	Type B1
Plot configuration	
Plot area	19,879 sqm
Coverage	Min 40% - Max 60%
Building footprint	8,000 - 12,000 sqm
Setbacks	6 meters (2.5m on chamfer)
Built-up Area	
F.A.R.	0.75
B.U.A.	14,909 sqm
Plot access	
Access	2 access points
Parking / Loading bays	
Car	84 parking spaces
Truck	26 bays



Building footprint of this option:
9,500 sqm (48%)

The schemes show possible plots configurations. These plots layout are purely indicative and for illustrative purpose only.

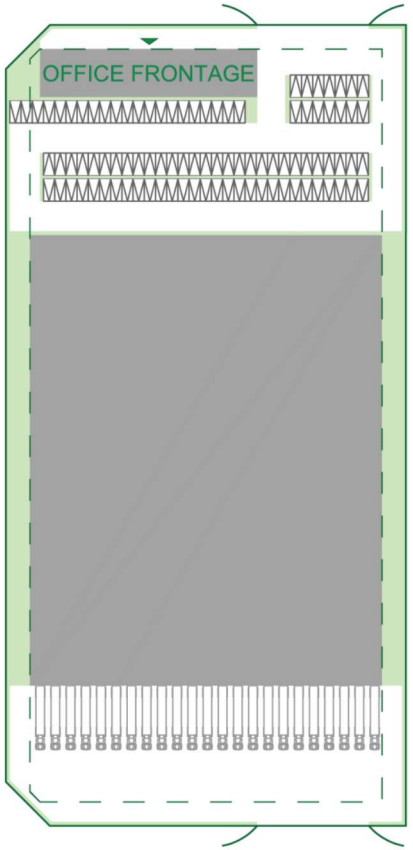
Plot configurations

20K Plot (Type B2)

The **20,000 sqm plots (Type B2)** are located along local roads. This typology is characterized by:

- 2 access points located on two plots sides
- Loading/Unloading area on 1 side
- Single parking area for cars
- Office building is separated from the warehouse

Typology	
Plot	20K
Plot type	Type B2
Plot configuration	
Plot area	19,879 sqm
Coverage	Min 40% - Max 60%
Building footprint	8,000 - 12,000 sqm
Setbacks	6 meters (2.5m on chamfer)
Built-up Area	
F.A.R.	0.75
B.U.A.	14,909 sqm
Plot access	
Access	2 access points
Parking / Loading bays	
Car	93 parking spaces
Truck	23 bays



Building footprint of this option:
10,500 sqm (53%)

The schemes show possible plots configurations. These plots layout are purely indicative and for illustrative purpose only.

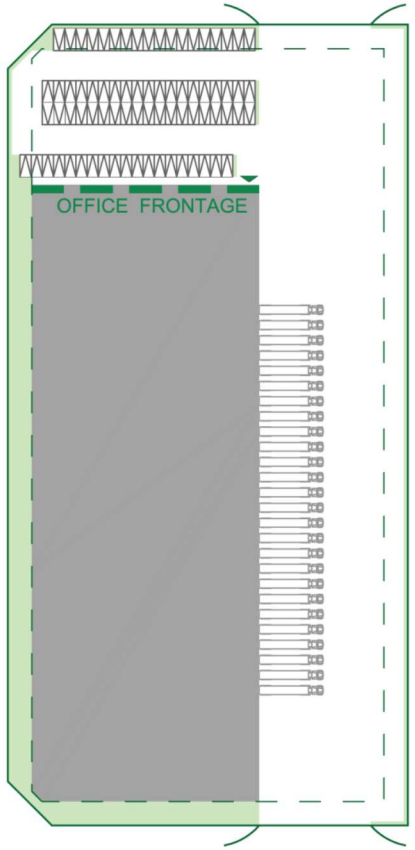
Plot configurations

20K Plot (Type B3)

The **20,000 sqm plots (Type B3)** are located along local roads. This typology is characterized by:

- 2 access points located on two plots sides
- Loading/Unloading area on 1 side
- Single parking area for cars
- Offices frontage is located in proximity to the parking area

Typology	
Plot	20K
Plot type	Type B3
Plot configuration	
Plot area	19,879 sqm
Coverage	Min 40% - Max 60%
Building footprint	8,000 - 12,000 sqm
Setbacks	6 meters (2.5m on chamfer)
Built-up Area	
F.A.R.	0.75
B.U.A.	14,909 sqm
Plot access	
Access	2 access points
Parking / Loading bays	
Car	75 parking spaces
Truck	26 bays



Building footprint of this option:
9,000 sqm (45%)

Plot configurations

40K Plots

We have categorized the **40K plots** into two distinct typologies, each identified based on both the shape of the plot and the location of plot access. The plots exhibit either a regular configuration or feature chamfered edges. Additionally, we differentiate them based on the access point, with some having central access while others provide access on the side:

- **Type A:** chamfer of 2 corners and central access
- **Type B:** chamfer of 2 corners and access on the side

Different configurations are provided for each plot typology, with alternative distribution of building and office frontage, as well as loading bays and car parking areas.

Plot configurations

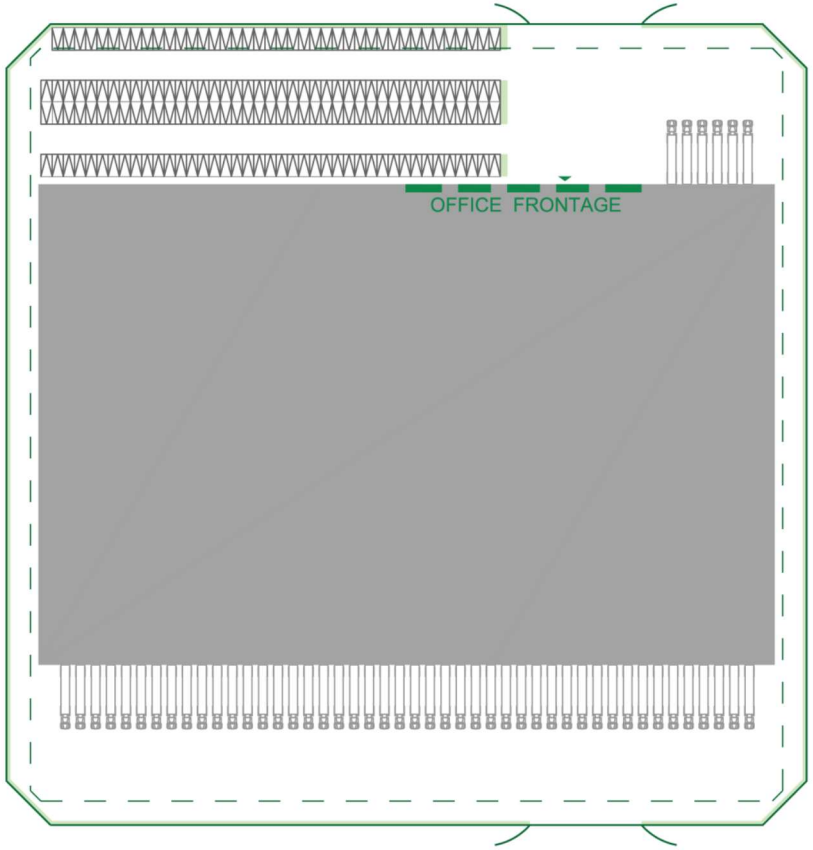
40K Plot (Type A1)

The **40,000 sqm plots (Type A1)** are located along local roads. This typology is characterized by:

- 2 access points located on two plots sides
- Loading/Unloading area mainly on 1 side
- Single parking area for cars
- Offices frontage is located in proximity to the parking area

Typology	
Plot	40K
Plot type	Type A1
Plot configuration	
Plot area	39,758 sqm
Coverage	Min 40% - Max 60%
Building footprint	16,000 - 24,000 sqm
Setbacks	6 meters (2.5m on chamfer)
Built-up Area	
F.A.R.	0.75
B.U.A.	29,819 sqm
Plot access	
Access	2 access points
Parking / Loading bays	
Car	163 parking spaces
Truck	52 bays

The schemes show possible plots configurations. These plots layout are purely indicative and for illustrative purpose only.



Building footprint of this option:

22,000 sqm (55%)

Plot configurations

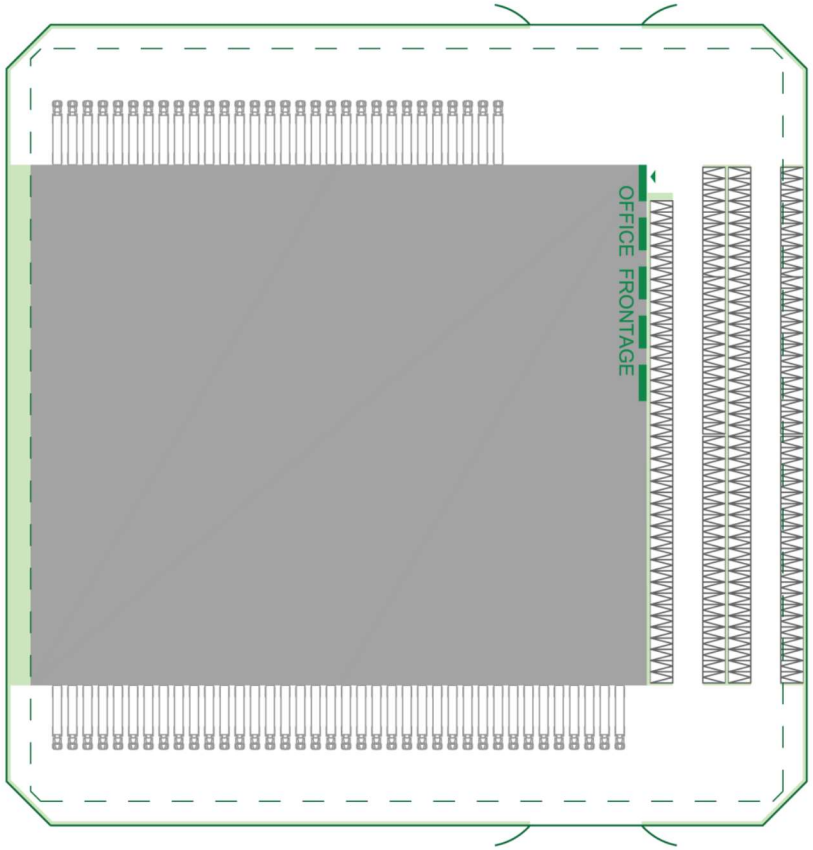
40K Plot (Type A2)

The **40,000 sqm plots (Type A2)** are located along local roads. This typology is characterized by:

- 2 access points located on two plots sides
- Loading/Unloading area on 2 sides
- Single parking area for cars
- Offices frontage is located in proximity to the parking area

Typology	
Plot	40K
Plot type	Type A2
Plot configuration	
Plot area	39,758 sqm
Coverage	Min 40% - Max 60%
Building footprint	16,000 - 24,000 sqm
Setbacks	6 meters (2.5m on chamfer)
Built-up Area	
F.A.R.	0.75
B.U.A.	29,819 sqm
Plot access	
Access	2 access points
Parking / Loading bays	
Car	181 parking spaces
Truck	68 bays

The schemes show possible plots configurations. These plots layout are purely indicative and for illustrative purpose only.



Building footprint of this option:

20,000 sqm (50%)

Plot configurations

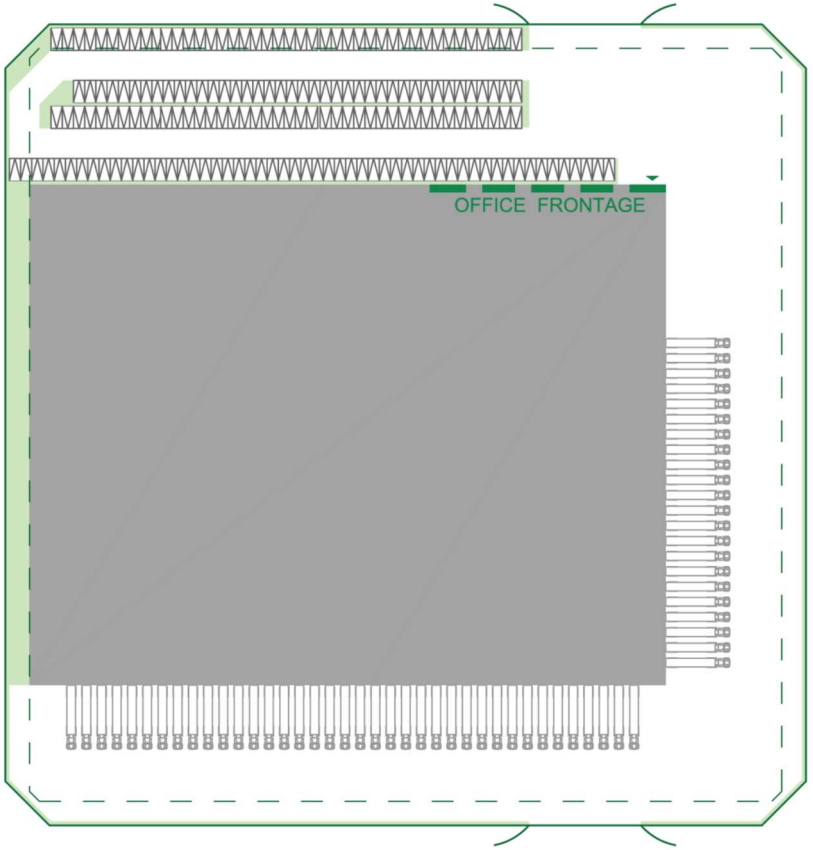
40K Plot (Type A3)

The **40,000 sqm plots (Type A3)** are located along local roads. This typology is characterized by:

- 2 access points located on two plots sides
- Loading/Unloading area on 2 sides
- Single parking area for cars
- Offices frontage is located in proximity to the parking area

Typology	
Plot	40K
Plot type	Type A3
Plot configuration	
Plot area	39,758 sqm
Coverage	Min 40% - Max 60%
Building footprint	16,000 - 24,000 sqm
Setbacks	6 meters (2.5m on chamfer)
Built-up Area	
F.A.R.	0.75
B.U.A.	29,819 sqm
Plot access	
Access	2 access points
Parking / Loading bays	
Car	181 parking spaces
Truck	68 bays

The schemes show possible plots configurations. These plots layout are purely indicative and for illustrative purpose only.



Building footprint of this option:

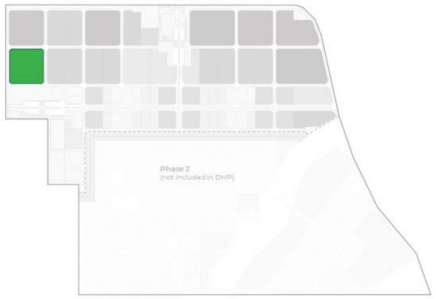
20,000 sqm (50%)

Plot configurations

40K Plot (Type B1)

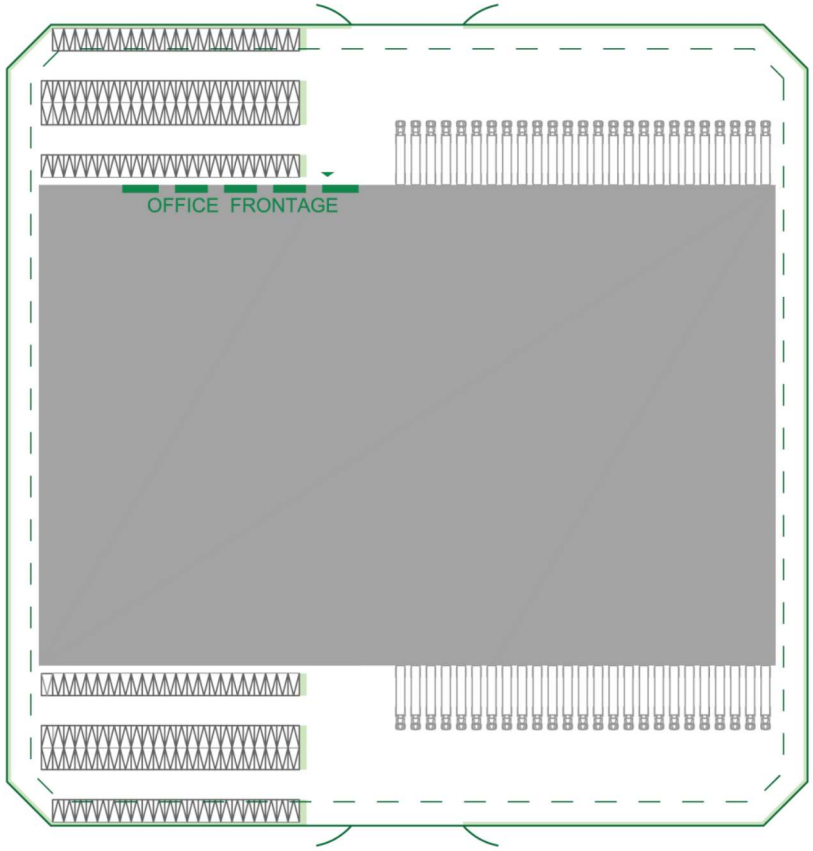
The **40,000 sqm plots (Type B1)** are located along local roads. This typology is characterized by:

- 2 access points located on two plots sides (in the center)
- Loading/Unloading area on 2 sides
- Parking area for cars on 2 sides
- Offices frontage is located in proximity to the parking area



Typology	
Plot	40K
Plot type	Type B1
Plot configuration	
Plot area	39,758 sqm
Coverage	Min 40% - Max 60%
Building footprint	16,000 - 24,000 sqm
Setbacks	6 meters (2.5m on chamfer)
Built-up Area	
F.A.R.	0.75
B.U.A.	29,819 sqm
Plot access	
Access	2 access points
Parking / Loading bays	
Car	182 parking spaces
Truck	50 bays

The schemes show possible plots configurations. These plots layout are purely indicative and for illustrative purpose only.



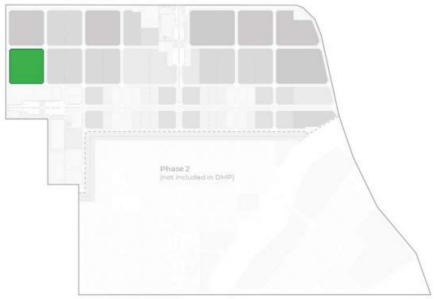
Building footprint of this option:
22,000 sqm (55%)

Plot configurations

40K Plot (Type B2)

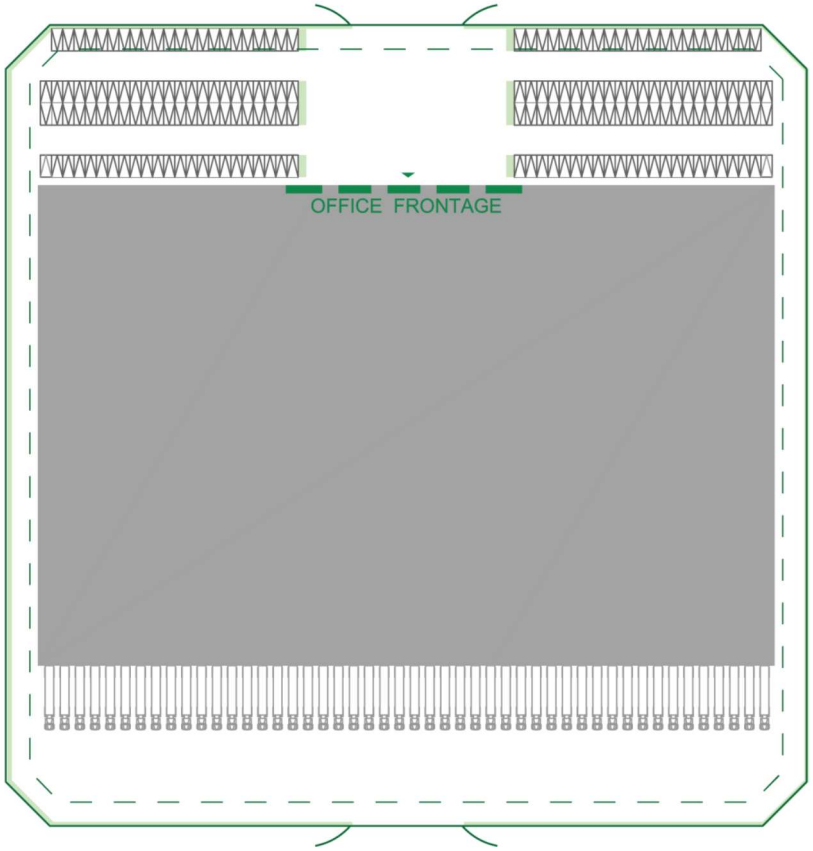
The **40,000 sqm plots (Type B2)** are located along local roads. This typology is characterized by:

- 2 access points located on two plots sides (in the center)
- Loading/Unloading area on 1 side
- Parking area for cars on 1 side
- Offices frontage is located in proximity to the parking area



Typology	
Plot	40K
Plot type	Type B2
Plot configuration	
Plot area	39,758 sqm
Coverage	Min 40% - Max 60%
Building footprint	16,000 - 24,000 sqm
Setbacks	6 meters (2.5m on chamfer)
Built-up Area	
F.A.R.	0.75
B.U.A.	29,819 sqm
Plot access	
Access	2 access points
Parking / Loading bays	
Car	182 parking spaces
Truck	48 bays

The schemes show possible plots configurations. These plots layout are purely indicative and for illustrative purpose only.



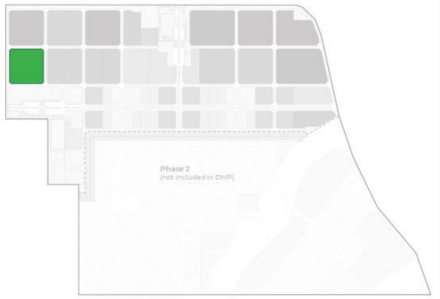
Building footprint of this option:
22,000 sqm (55%)

Plot configurations

40K Plot (Type B3)

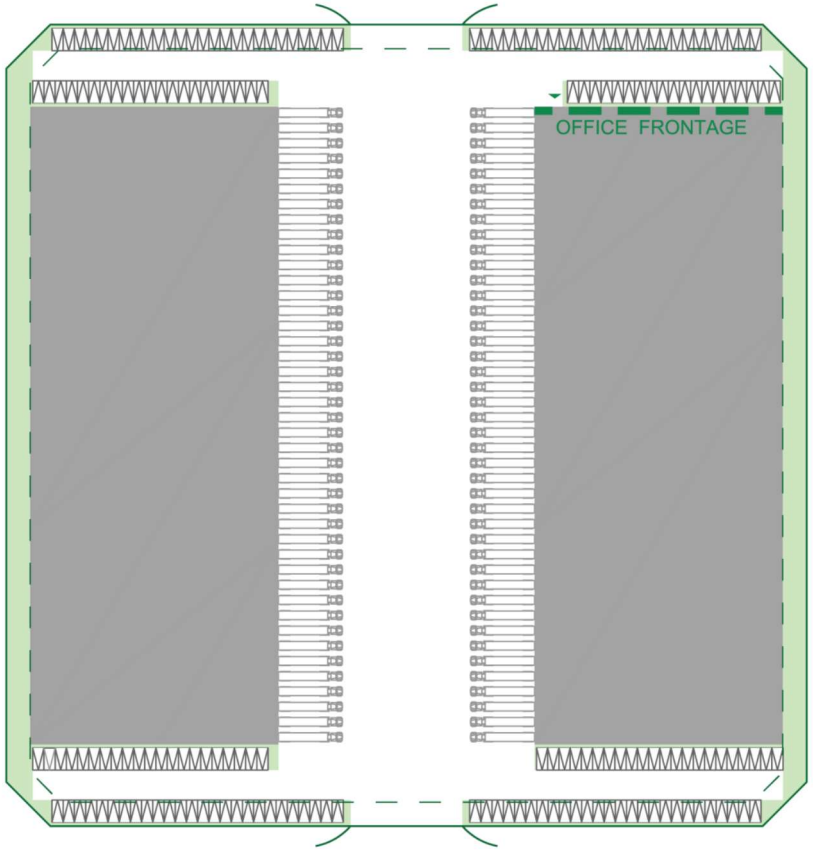
The **40,000 sqm plots (Type B3)** are located along local roads. This typology is characterized by:

- 2 access points located on two plots sides (in the center)
- 2 Separated buildings
- Loading/Unloading area on 1 side for each building
- Parking area for cars on 2 sides of each building



Typology	
Plot	40K
Plot type	Type B3
Plot configuration	
Plot area	39,758 sqm
Coverage	Min 40% - Max 60%
Building footprint	16,000 - 24,000 sqm
Setbacks	6 meters (2.5m on chamfer)
Built-up Area	
F.A.R.	0.75
B.U.A.	29,819 sqm
Plot access	
Access	2 access points
Parking / Loading bays	
Car	188 parking spaces
Truck	84 bays

The schemes show possible plots configurations. These plots layout are purely indicative and for illustrative purpose only.



Building footprint of this option:

20,000 sqm (50%)

Riyadh Integrated
Special Logistics Zone
المنطقة الخاصة اللوجستية المتكاملة